

添付資料 11-2: 成果1サブグループ会議

11-2-7 : 7th SG1



Contents of Today's Presentation

1. Comments regarding Draft BAT/BEP Guideline
2. Answer on the Comments to enhance to the Guideline
3. Presentation of Some Cases for the Clarification
4. Further step

Output 1-1

"Update for Comments on Draft BAT/BEP Guidelines"

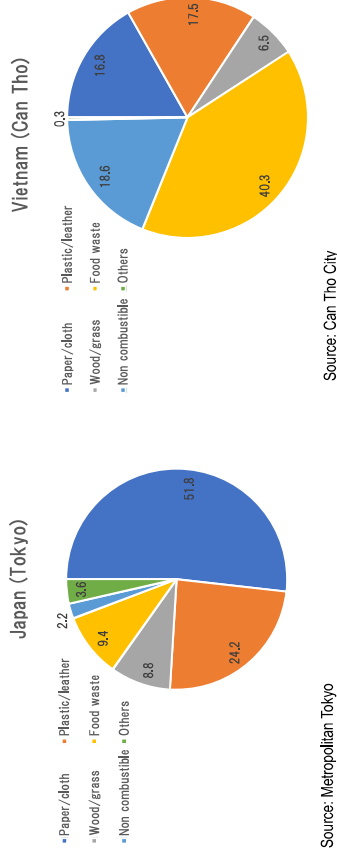
7th Subgroup Meeting for Output 1

23th April 2021 (Thursday)

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

1

Waste Characterization (Typical or Acceptable Range, etc)



Source: Metropolitan Tokyo

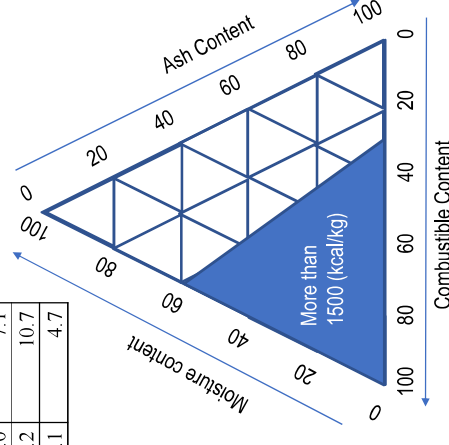
Acceptable Waste for WtE Facility

Bulk density, Moisture, Combustible, Ash Contents of the Case Studies in Japan

	Bulk density (kg/L)	Moisture contents (%)	Combustible (%)	Ash (%)
Japan (average)	145.8	40.9	52.0	7.1
Japan (max)	235.0	52.6	60.2	10.7
Japan (min)	104.2	33.3	41.1	4.7

- As one of examples, suitable moisture, combustible and ash contents are within the range of right figure.

- In the case study, moisture, combustible and ash contents are above table, which is within the range of right figure.



Source: National Institute for Environmental Study

Layout of WtE facility (Buffer zone or green area, etc)

Outline of the facilities (Tobuki Incineration Plant)

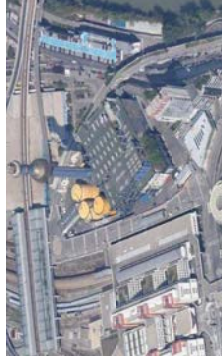
Site area: 21,445 m²

Construction area: 7,118 m² (including attached buildings)

Incineration capacity: 300 t/day (100 t/day/furnace × 3)



Source: Clean Authority of Tokyo



Source: Leader of Wm Energie GmbH

- (1) Incineration plant (2) Office (3) Truck weighing station (4) Stack (5) Incombustibles Treatment Center (6) Plastic Recycling Center (7) Tobuki Yuttari Hall

Wastewater Treatment

- ◇ Basically, there are discharge sources of wastewater from waste pit, from washing are of equipment or platform or from ash discharge area and domestic water
- Such wastewater is separately collected and treated in the characteristics of wastewater such as inorganic wastewater from ash discharge area of low ignition loss-ash or organic wastewater like domestic wastewater
- In case of Japan, the wastewater from WtE facility is mainly treated by the discharge into sewerage or utilized in the facilities after the wastewater treatment
- Small amount of seasonal fluctuated wastewater with high organic contents such as the wastewater from pit can be sprayed into combustion chamber

Role and responsibilities of public and private (example)

◇Public-works projects

The public sector is responsible for everything from securing financial resources to designing, constructing, and operating the facility.

◇Design-Build plus Operate separate order scheme, DB+O

The public sector designs and constructs the facilities, and the private sector is entrusted with the operation of the facilities for multiple years.

◇Design-Build-Operate, DBO

The public sector raises funds through bonds and grants, etc., and comprehensively outsources the design, construction, operation, etc. of facilities to the private sector.

◇Design-Build-Maintenance, DBM

The public sector raises funds through bonds and grants, etc., and comprehensively outsources the design, construction, maintenance, and management of facilities to the private sector.

◇PFI

•Build-Transfer-Operate, BTO

The private sector is responsible for financing, design, construction, and operation of the facility. Ownership will be transferred to the public after completion of the facility.

•Build-Operate-Transfer, BOT

The private sector is responsible for financing, design, construction and operation of the facility. Ownership will be transferred to the public at the end of the commissioning period.

•Build-Own-Operate, BOO

The private sector will be responsible for financing, design, construction, and operation of the facility. Ownership will not be transferred to the public even after the end of the commissioning period.

Role and responsibilities of public and private (example)

	PFI			DBO	DBM	Public + Long term contract	Public works	Remarks
	BOO	BOT	BTO					
Degree of public involvement	△							
Role	weak						strong	
Construction								
Design	Private	Private	Private	Public	Public	Public	Public	
Construction	Private	Private	Private	Public	Public	Public	Public	
Funding	Private	Private	Private	Public	Public	Public	Public	
Operation								
Operation	Private	Private	Private	Private	Public	Private	Public	
Maintenance	Private	Private	Private	Private	Private	Private	Public	
Ownership of facilities								
Construction period	Private	Private	Private	Public	Public	Public	Public	
Operation period	Private	Private	Private	Public	Public	Public	Public	

△:Role of the private sector

Note: In the PFI system, the private sector will be the installer, while in the DBO system, the public will be the installer.

Example of Japan

Item	Shinkoto WtE plant	Toshima WtE plant	Ota WtE plant	(million PHP)
Personnel cost	345	93	34	5%
Utility cost	114	38	44	6%
Maintenance	673	255	96	13%
Ash handling	228	65	156	21%
Others	177	242	405	55%
Material	1,193	601	700	95%
Total cost	1,537	694	735	100%
Total waste amount (thousand ton/year)	412	92	173	-
Treatment cost (ton/PHP)	3,735	7,533	4,243	-

Summarization of Progress

- 60 case studies have been collected but some data collection is difficult.
- Comments from SG member were received for draft BAT/BEP guideline.
- Answer on comments are prepared to revise BAT/BEP guideline.

Further Step

- According to the comments, BAT/BEP guideline will be revised and improved
- Confirmation of the next step of official process

Maraming salamat po !

Examples of EU and Japan

Item	O&M/S in Japan (Section 17 above)	Circular (Kansei 95) MOE Japan	EU directive 2000/76 (EU Directive 2010-75)
	Mandatory	Recommendatory	Mandatory
Target capacity of WtE	All	For >200t/d	
DXNs	1/year*	-	2/year
SOx	2/year	6/year	Continuous
Dust	2/year	6/year	Continuous
HCl	2/year	6/year	Continuous
NOx	2/year	6/year	Continuous

PROJECT ACTIVITY : 7th SUB-GROUP MEETING FOR PROJECT OUTPUT 1 (ENHANCEMENT OF NATIONAL GOVERNMENTS’ CAPACITY FOR SUPPORTING AND COORDINATING OF LGUs’ WTE PROJECT)

DATE/TIME : 23 April 2021, 9:00AM - 11AM (Philippine Time)

VENUE : Video Conference through Microsoft Teams

MATERIALS : <https://bit.ly/7thOPISGMtg>

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Call to Order/ Meeting Objectives/Acknowledgement of Attendees (Ms. Elvira Pausing, EMB-SWMD-PMO)	● Ms. Elvira Pausing of EMB-SWMD-PMO commenced the 7th subgroup meeting for Project Output 1 when quorum was reached with 9 of the 10 agencies present, and all presenters for the meeting have signed in. ● Ms. Pausing presented the agenda and asked the subgroup members if anything else needed to be discussed. ● Ms. Pausing acknowledged the presence of the participants, welcoming new participants from QC LGU Task Force on Solid Waste Management.	☐ Agenda was moved for adoption with no comments and modifications from the participants.	
2.) Review of the previous discussions from the last subgroup meeting (Takahiro Kamishita, JET)	● Mr. Kamishita reviewed the pertinent discussion points from the last Subgroup Meeting last October 14, 2020. ● In the last subgroup meeting, the Draft Technical Standard was presented, and a call for comments was sent following the meeting for the refinement of the draft. With the comments and consultations facilitated with the subgroup members, the Technical Standards have been approved in the ITWG Meeting last		

	December 2020, and approved by the JCC in the meeting last February. ● The case studies gathered for the BAT/BEP Guidelines was also discussed in the last subgroup meeting, with JET expressing difficulty in gathering information. JET sought the assistance of PMO in contacting the implementing body of the WTE facilities in the case studies, but unfortunately, only a few companies replied to the request. ● The draft BAT/BEP guidelines have been drafted with the additional inputs gathered, and sent to the OP1 Subgroup for their review and comments, to be discussed in more detail in Mr. Higashinakagawa's presentation.		
3.) Updates on the submission of comments on the BAT/BEP Guidelines by the SG1 members (Ms. Roxanne Barcenas, EMB-SWMD-PMO)	● Ms. Roxanne Barcenas presented a matrix consolidating the timeline of the dissemination of the BAT/BEP guidelines. In the summary, it was mentioned that only the following agencies have sent comments through PMO: ○ PPPC ○ DOE		
4.) Presentations/ Discussions of the Draft BAT/BEP Guidelines (Mr. Satoshi Higashinakagawa, JET)	● Mr. Satoshi Higashinakagawa presented a summary of the comments received for the BAT/BEP Guidelines and JET's responses to the comments along with the team's further clarifications. He noted that aside from PPPC and DOE, JET also		

	received comments from PMO and Davao City LGU. ● Mr. Higashinakagawa elaborated on each of the received comments, and confirmed to the commenter the alignment of understanding. JET’s responses to the comments were discussed, and on whether the comments may be accommodated in the updated guidelines. ● In the interest of time, the more detailed verification of the responses was not covered during the meeting and will just be facilitated after the meeting. ○ The matrix of comments may be accessed here.	Ms. Raquel Reyes EMB SWMD clarified the intention of her comment, which is to clarify the types of waste that will and will not be accepted. ☐ Ms. Pausing clarified when the material was shared and on whether PPPC and DOE have already reviewed JET’s responses. ○ The matrix has only been shared this morning shortly before the meeting, so the relevant agencies have not had the time to thoroughly review the responses. ☐ Mr. Gilbert Kintanar of NEDA raised that their team has not been provided with the presented guidelines, and requested to be furnished a copy in preparation of the ITWG meeting and to submit comments. ☐ Mr. Higashinakagawa clarified with Ms. Pausing the process of adoption on the BAT/BEP Guidelines. ○ The process of the endorsement, approval, and adoption is similar to the Technical Standards,	● [DOE, PPPC, PMO and Davao City] Ms. Pausing requests for the agencies who extended comments to the BAT/BEP Guidelines to confirm the responses of JET. ● [JET] Ms. Mallare of JET sent the link to the BAT/BEP Guidelines and matrix of responses of JET.. ● [PMO] Mr. Kintanar acknowledges receipt of the link from JET, but requests for the original email to be sent to NEDA Infrastructure Team for their reference and documentation. ● [NEDA] Submit comments to the BAT/BEP guidelines on or before April 30.
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			wherein EPTWG will then determine the form by which the Guidelines will be officially published (i.e. Memorandum Circular, DAO, etc)	
5.) Other Matters	● Updates on the Status of Approval on the MC for Technical Standards of WtE Facility ○ Currently endorsed to DENR-FASPS for approval and signature of USec Leones ○ Once signed by USec Leones, TS will be sent to EMB Director his endorsement to the EPTWG ○ Final deliberation by EPTWG prior to approval. ● Mr. Kamishita requests updates on the WtE Bill and amendment of DAO 2013-22. ○ Ms. Charisse Pascual of DOE relays that the bill is scheduled for interpellation in the Senate ○ Mr. Dexter Lunk of PPPC relays that since the update last July, no further progress have been shared to them yet ● On the amendment of DAO 2013-22: ○ Mr. Santini Quiocson relays that the revisions have been			● [PMO] To provide further updates on the TS that was adopted and approved for endorsement to EMB during the JCC Meeting on February 9, 2021.
				● Ms. Pausing reminded JET on the position paper that is to be submitted to HWMS. Mr. Kamishita acknowledged

		finalized in HWMS and endorsed for adoption.	and explained the difficulty in obtaining necessary information to be considered from the position paper from the EMB regional office. He clarified that the intention of the question is to ask if comments from JET will still be accepted given the progress of the amendment. ● Mr. Quiocon clarifies that they are still open for comments from JET in the amendment of the DAO 2013-22.	
6.) Wrap-up, Required Actions, and Agreements		Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. ● [DOE, PPPC, PMO and Davao City] Ms. Pausing requests for the agencies who extended comments to the BAT/BEP Guidelines to confirm the responses of JET. ● [JET] Ms. Mallare of JET sent the link to the BAT/BEP Guidelines and matrix of responses of JET. ● [PMO] Mr. Kintanar acknowledges receipt of the link from JET, but requests for the original email to be sent to NEDA Infrastructure Team for their reference and documentation. ● [NEDA] Submit comments to the BAT/BEP guidelines on or before April 30. ● [PMO] To provide further updates on the TS that was adopted and approved for		

	endorsement to EMB during the JCC Meeting on February 9, 2021.		
7.) Way forward, Schedule of the next meetings	- Proposed schedules of next SG Meetings 8th OP1 SG Meeting to be held on June 10 - Proposed agenda for the next ITWG Meeting		[All Members] Confirm attendance to the ITWG Meeting

添付資料 11-2: 成果1サブグループ会議

11-2-8 : 8th SG1



Output 1-1
“2nd Draft of BAT/BEP Guideline”

7th Subgroup Meeting for Output 1

16th June 2021

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

1

Contents of Today’s Presentation

1. Changes from 1st Draft to 2nd Draft
2. Answer on the Comments from SG members
3. Findings
4. Further step

1. Changes from 1st Draft to 2nd Draft

1. Updates based on the comments from SG members
2. Updates of data by additional information
3. More graphs and tables to illustrate the obtained data from the Case Study
4. Referring the case ID as the information source

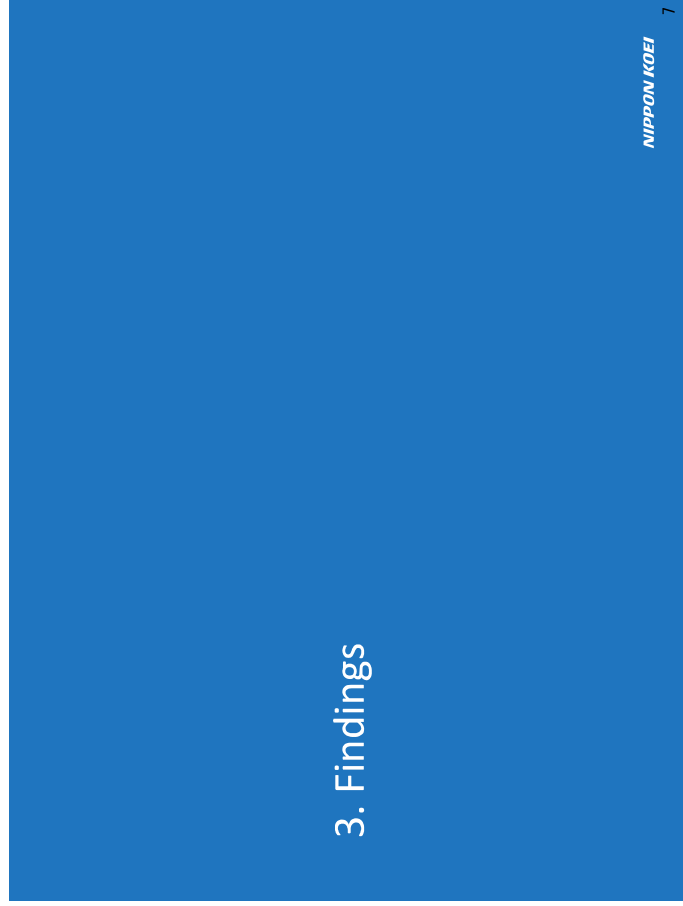
2. Answer on the Comments from SG members

1)Acceptable Target waste

- The combustion furnace, either stoker or fluidized bed type, can accept most of type of waste.
- Even incombustible waste such as metal, concrete brick or liquid waste can be treated while it is not desirable.
- Nowadays, LGUs defines the type of waste for WtE to sustain their waste management.
- This must be the same in the Philippines.

2) Clustering

- The concept of cluster LGU is important to consider the advantage of scale of WtE facility.
- the following issues to make consensus among LGUs joining clustering.
 - Possible change in administration of LGUs,
 - Site selection concerns (Not in my backyard or NIMBY),
 - Waste collection and transportation efficiency, as transportation distances could be longer for member LGUs
 - Environmental impact by WtE, waste transportation etc.



3. Findings

1) Target waste

- The target waste of WtE is not decided uniformly. LGUs shall decide or check the target waste to be treated in their WtE facility their plan.
- The waste segregation practiced commonly before treatment by WtE facility. The segregation practice, methodology and technology in the preceding countries can be references to the LGUs in the Philippines

3. Findings, 2) Combustion Technologies and Treatment Capacity

- Stoker (moving grate) is the most commonly adopted because of track record, variety of treatment capacity.
- Since, the operation period of WtE facility is long as 20 years or more, the technology shall be evaluated carefully.
- The LGUs shall evaluate type of furnace appropriate for their solid waste amount.

3. Findings, 3) Area

- The area for WtE can be minimized according to availability of land and the conditions of the surrounding area.
- WtE facilities have been constructed and operated in the populated and urbanized area.

3. Findings, 4) Energy Recovery

- The electricity generation efficiency has been improved as the treatment capacity of WtE facilities become bigger.
- To achieve very high efficiency of electricity generation, more cost could be required.
- Various methodologies which contribute to improve the efficiency of energy recovery is available

3. Findings, 5) Pollution Control

- Environmental standards of WtE facility is set as stricter than the National standards in the existing cases.
- Such stricter standards can be met by installing appropriate pollution control technology and eases making public consensus for its development

3. Findings,

6) Ash Handling

- Utilizations of bottom ash as cement aggregate, other construction use are practiced. Such utilization sometime requires additional cost and could be revenue source depending on the conditions.
- Fly ash containing heavy metals or other toxic materials, it is stabilized by cement solidification, chemical treatment, or dispose at hazardous waste landfill site.

3. Findings,

7) Business Scheme

- A solicited approach was adopted in almost all cases in the case study.
- This is the fact that the WtE projects took this approach could reach to the construction and operation.
- Proposals from the private sector are based on the proponent's interest, which may not be best for waste management in the LGUs.

3. Findings,

8) Business Scheme

- A solicited approach was adopted in almost all cases in the case study.
- This is the fact that the WtE projects took this approach could reach to the construction and operation.
- Proposals from the private sector are based on the proponent's interest, which may not be best for waste management in the LGUs.

2. Further Step

- Endorsement by SG to ITWG
or
- Review comments

No.	Page (1st draft)	Section/Page	Question/Comment/Suggestion	From	Answer to the comments	Page (2nd draft)	Update in BAT/BEP guideline
1 p.11	2.2.3Target Waste (1)	Category of waste	Comment: Waste Segregation The separate collection shall be implemented and the target waste for WtE facility are segregated residual wastes which is directly collected from the source (households and business establishments) can be handled in the WtE facility.	PMO	JET agrees the comment. -The LGUs shall decide or check the target waste to be treated in their WtE facility according to their solid waste management plan -Waste segregation is commonly practiced before treatment by WtE facility in the existing cases. These can be reference for Philippines	p.52	Reflected in BAT/BEP GL
2 p.5	(2) Scope of Project		Comment: Clustering In case of clustered or multiple LGUs which do not generate more than 100 ton/day of wastes and in consideration of the volume of waste and the distance for the hauling and transporting, provision of temporary storage area or Residual Containment Area (RCA) and the intermediate treatment, collection and final disposal in the clustered WtE facility shall be planned and implemented.	PMO	The concept of cluster LGU is important to consider the advantage of scale of WtE facility. the following issues shall be considered and discussed to make consensus among LGUs for adopting the LGUs clustering. • Possible change in administration of LGUs, • Site selection concerns (Not in my backyard or NIMBY), • Waste collection and transportation efficiency, as transportation distances could be longer for member LGUs • Environmental impact by WtE, waste transportation etc.	P10-11	Reflected in BAT/BEP GL
3 p.4		Small-scale combustion facility cannot generate the sufficient electric power generation. In that case, the electricity generation is only enough for utilizing within the facility and not for selling to power companies.	Suggestion: Clustering Suggest to recognize possibility of waste consolidation of various LGUs, especially for LGUs with small volume of generated waste.	PPP center		P10-11	Reflected in BAT/BEP GL
4 p.5		The target cities are large cities namely Quezon City, Cebu City and Davao City,	Question: Clustering See comment above. Cluster of LGUs may also be considered. It may also be clarified here why clustering of LGU is not recommended.	PPP center	Yes, clustering can be recommended as an option in certain conditions.	P10-11	Reflected in BAT/BEP GL
5 p.5		Combustion technology is one of the most popular and reliable WtE technologies with a long history of application	Question: Combustion Technology Will combustion technology be the most ideal for the Philippine setting considering the Philippines' climate, and technical and financial capacity?	PPP center	The case study focused on the combustion technology as agreed in the 1st and 2nd SGOP meeting The combustion technology has many track records and is reliable among other waste processing technologies. The GL is intended to be a reference in developing WtE ACC in Philippines.	P53	Reflected in BAT/BEP GL
6 p.6		Table 1.3, Type of acceptable waste	Suggestion: Acceptable waste type Suggest to include a list of acceptable waste for stoker type incinerator for fluidized bed combustion	PPP center	The combustion furnace, either stoker or fluidized bed type, can accept most of type of waste. Even incombustible waste such as metal, concrete brick or liquid waste can be treated while it is not desirable. However, nowadays, each local government defines the type of waste for WtE to sustain their waste management. This must be the same in the Philippines.	P24	Reflected in BAT/BEP GL

No.	Page (1st draft)	Section/Page	Question/Comment/Suggestion	From	Answer to the comments	Page (2nd draft)	Update in BAT/BEP guideline
7 p.6		Table 1.3, Type of acceptable waste	Suggestion: Acceptable waste type Suggest to provide a list of type of acceptable waste with high calorific value or liquid waste. Is this only MSW? for stoker type incinerator	PPP center	The acceptable range of physical composition, three components are described or discussed in the guideline. There is no significant difference between types of incinerators such as stoker and fluidized bed combustion.	P26-27	Reflected in BAT/BEP GL
8 p.6		Table 1.3, disadvantage of the comparison of stoker type and fluidized bed combustion	Suggestion: Combustion Technology Suggest to include financial, environmental, social and gender concerns as well, i.e. which one is more costly, more safe for the community etc. in Table 1.3 Comparison of combustion system	PPP center	Both types of furnace can meet requirements of environmental and social aspects. No significant difference in the initial cost per unit tons of waste is found between both types in the experiences of Japan.	P21	Reflected in BAT/BEP GL
9 p.7		Table 2.1 Survey Contents of Case Studies	Suggestion: Terminology Suggest to revise this to Implementation Framework from Financial Scheme in Table 2.1 Survey Contents of Case Studies.	PPP center	Noted. It is corrected to be Business Scheme (Implementation Framework)	P12	Reflected in BAT/BEP GL
10 p.9		This is because the size of each local authority is relatively small, and each local authority has to implement waste management through their own waste management facility. Additionally, the cooperation between authorities is generally difficult, though there are some cases of regional waste treatment facilities operated through cooperation between local authorities	Suggestion: Clustering Given the discussion here, two solutions are possible: 1. Smaller capacity of individual facilities, but spread across the country 2. Bigger capacity of individual facilities and clustering is possible. Suggest to have a summary statement to this effect if the understanding is correct. What are the determining factors which solution is appropriate?	PPP center	Both solutions are possible depending on the situation. Can not be a uniform solution in LGUs.	P10-11	Reflected in BAT/BEP GL
11 p.12		Energy Recovery	Suggestion: Financial Aspect Suggest to also include discussion on the commercial aspect of energy component such as information on how power output is traded, prices, revenue, etc. in Energy Recovery	PPP center	All available data are shown in the case study (it is appendix 1 and 2).	Appendix	Reflected in BAT/BEP GL
12 p.18		Wastewater	Suggestion: Wastewater Aside from characteristics and treatment, suggest to include discussion on how and where is the proper collection and disposal/discharged of wastewater.	PPP center	Wastewater shall collected from the source of wastewater depending on the treatment method. Organic and inorganic wastewater is treated separately. After the treatment, wastewater is discharged into sewerage or is reutilized in the plant.	P37	Reflected in BAT/BEP GL
13 p.19		Bottom ash	Question: Ash Utilization "After the separation, the residue of bottom ash will be utilized as cement aggregate, other construction material such as backfilling material, roadbed after its melting, baking and aging, or other necessary processing." > Could this be a potential source of project revenue?	PPP center	There is potential of revenue sources. However, it is factor of expense at the same time depending on the situation of market of such material. In case of Metropolitan Tokyo, recycled bottom ash is received to cement company by paying around 470 US\$/ash-ton.	P38	Reflected in BAT/BEP GL

No.	Page (1st draft)	Section/Page	Question/Comment/Suggestion	From	Answer to the comments	Page (2nd draft)	Update in BAT/BEP guideline
14 p20		Solicited approach is mostly applied in both EU and Japan .	Question: Business Scheme May we inquire what the common concerns/problems are for unsolicited WTE projects?	PPP center	As main concern, unsolicited proposal in the absence of LGU's sufficient WTE plan results in a mismatching of interests in both parties. This concern is elaborated in the GL. In Table 2.25 in this TCP's Progress Report (2), findings and recommendations of solicited approach is summarized as "5. Applicability of Solicited Approach", please refer it as well.	P40-41	Reflected in BAT/BEP GL
15 p21		The range of capital expenditure is from 100,000 US\$ to 700,000 US\$ per ton/day .	Suggestion: CAPEX VS Capacity "The range of capital expenditure is from 100,000 US\$ to 700,000 US\$ per ton/day." > Based on the graph, the lower the capacity the higher the Capex. Suggest to include short analysis of the graph.	PPP center	We will explain the advantage of scale regarding the CAPEX of WTE facility which can be seen from the graph.	P42	Reflected in BAT/BEP GL
16 p22		Public hearing and public consultation meeting are held during the planning and/or design stage.	Suggestion: Public Consultation "public hearing and public consultation meeting are held during the planning and/or design stage." > Suggest to identify who should be invited in these public consultations for better guidance	PPP center	In case of Japan, public consultation meeting is open to anyone including residents near the site, NGO, academic experts. We will describe some examples of public consultation meeting.	P43	Reflected in BAT/BEP GL
17 p3		1.2 Scope of Case Studies (1) Capacity of WTE Facilities	Suggestion: Waste Characteristic This section pertains to the amount of waste generation or waste quantity from local government units (LGUs) only. It is highly recommended to include data and information on waste characterization on selected LGUs.	DOE	The more information of waste characterization is added.	P24-25	Reflected in BAT/BEP GL
18 p7		2. Survey Procedure of Case Studies 1 Survey Contents of Case Studies Coverage (Scope) -Scope of implementation body (only WTE, or including waste collection, transportation, energy recovery and distribution, ash disposal, etc.)	Suggestion: Waste Segregation, Clustering 1) It is recommended to include in the survey contents information as well as discussion on the waste segregation, collection and pre-treatment practices outside the WTE facilities considered in the case studies. 2) Also, to include discussion on the clustering techniques of municipalities and logistics (collection, handling, transport) of waste sources of the WTE facilities.	DOE	1) Target waste is investigated in the cases study. Survey contents were agreed in the previous SG meeting. So, waste segregation, collection and pre-treatment process before feeding the waste to WTE is not investigated for all cases. 2) Please refer to JET's answers comment2-4 above.	1)P23-24 2)P10-11	Reflected in BAT/BEP GL
19 p9		2.2.2 Required area of WTE Facility A WTE facility needs a sufficient area for a waste receiving building that includes a waste receiving hopper, combustion furnace, energy recovery facility, air pollution control facility, stack and operation area such as inside roads and buffer zone.	Comment: Facilities in WTE Other operation to be housed in a WTE facility such as material recovery facility (MRF) to segregate metals and glasses, among others, may be included.	DOE	Noted. Cases are confirmed, in or beside of WTE facilities, there are Material Recovery Facilities such as crusher for bulky waste, separation conveyor, plastic baler.	P22	Reflected in BAT/BEP GL
20 p11		2.2.3 Target Waste (2) Waste Characterization	Suggestion: Waste Characteristic This section only the covered Lower Heating Value (LHV) as a waste characterization parameter. It may include other data pertaining to waste composition or waste quality conditions such as the acceptable range in terms of percentage of combustibles, moisture, and ash, among others.	DOE	The more information of waste characterization is added.	P24-25	Reflected in BAT/BEP GL

No.	Page (1st draft)	Section/Page	Question/Comment/Suggestion	From	Answer to the comments	Page (2nd draft)	Update in BAT/BEP guideline
21 p.12		2.2.4 Energy Recovery Process	Suggestion: Energy Recovery This section only included discussion on Recovery for Thermal Utilization. It is recommended to expound also on techniques on applications for power generation. Also, itemized discussion on best practices utilized by WTE facilities for improving energy recovery may be included.	DOE	Some of examples of best practices utilized WtE facility are described in Table of Utilization of Thermal Energy.	P30	Reflected in BAT/BEP GL
22 p.15		2.2.5 Environmental Pollution Control	Suggestion: Survey Content It is recommended to include GHG emission reduction data of different WTE plants in t-CO2/year to further understand WTE's significance and relevance in terms of GHG emission reduction.	DOE	Organic wastes dumped in landfill sites generate methane gas. After WtE, methane gas from landfill can be avoided and electricity from WtE reduce the use of fossil fuel for electricity generation. *Survey contents were agreed in the 1st and 2nd SGOP-1 meeting. *The information of GHG emission reduction was not proposed and included by members.	-	None
23 p.20		2.3 Institutional and Financial Aspects of Case Studies 2.3.1 Project Implementation 1. Financial Scheme In EU and USA, PPP scheme is applied for some facilities, but mainly Design-Build-Operate (DBO) or Build-Operate-Transfer (BOT).	Suggestion: Role of Public/Private in PPP It is suggested to elaborate the public/private roles by business model in WtE such as the difference of Traditional Business Contract (Design-Build-Operate) DBO, Build-Transfer-Operate (BTO), Build-Operate-Transfer (BOT), and Build-Own-Operate (BOO).	DOE	We described the role and responsibilities for each business scheme such as Traditional business contract (public own and operate), DBO, BTO, BOT and BOO.	P39	Reflected in BAT/BEP GL
24 p.21		2.3.2 Financial Aspects (1) Capital Expenditure (CAPEX) (2) Operation and Maintenance Expenditure (OPEX)	Suggestion: CAPEX and OPEX This section only mentioned ranges of CAPEX and OPEX. It is recommended to include breakdown of items covered in the CAPEX and OPEX. Also, additional information from other countries may be considered.	DOE	The Capex and Opex information (as in total) is given in the Case study sheets (appendix). The breakdown of CAPEX and OPEX information is added. JET appreciate if members provide information from other countries.	P43	Reflected in BAT/BEP GL
25 p.23		3.1 Summary of Case Studies Table Error! No text of specified style in document..2 Table Summary of Institutional and Financial Aspects of Case Studies Financial Aspect Revenue	Suggestion: Financial Aspect It is recommended to include data and information on the tipping fees, electricity selling price / energy market options and fiscal incentives of the WtE facilities considered in the case studies.	DOE	We describe examples of electricity selling price as well as fiscal incentives. If you have some specific ideas of energy market options, please inform us.	P48	Reflected in BAT/BEP GL
26 p.8		2.2.2 Required area of WtE Facility	Question: Facilities in WtE Regarding the buffer zone of WtE facility, are there regulations from other countries with regards to siting of WtE facilities? i.e. distance from communities, buffer requirements and etc. Could we cite at least one example.	Davao	In case of Japan, there is regulation not for WtE but for industrial plant and factory which stipulates necessary green area and environmental facility like park, the area for sports, etc.	P22	Reflected in BAT/BEP GL
27 p.11		(2) Waste Characterization (Lower Calorific Value)	Question: Facilities in WtE "external energy burner" is this auxiliary fuel? Diesel or bunker fuel?	Davao	Yes. External fuel are auxiliary fuel such like heavy oil or diesel oil or gas.	P27	Reflected in BAT/BEP GL
28 p.11		(2) Waste Characterization (Lower Calorific Value)	Question: Facilities in WtE Regarding "to remove moisture by drying before inputting to the combustion furnace", can we elaborate more on how "drying" can be done? Can excess heat from incineration process be channeled to waste pit to facilitate the drying process?	Davao	There is no drying process in the waste pit while draining of moisture of waste is expected. It is revised as to reduce moisture by drying before inputting to the combustion furnace".	P27	Reflected in BAT/BEP GL

No.	Page (1st draft)	Section/Page	Question/Comment/Suggestion	From	Answer to the comments	Page (2nd draft)	Update in BAT/BEP guideline
29	p15	2.2.5 Environmental pollution control, (1) Exhaust Gas Treatment, 1) Emission Standard	Suggestion: Environmental Monitoring Regarding emission standard, suggest to include frequency of monitoring, how is monitoring done in other countries.	Davao	Monitoring frequency is added.	P33	Reflected in BAT/BEP GL
30	p19	2.2.6 Ash Treatment and Disposal, (2) Fly ash	Question: Ash Treatment "In EU, the treatment and disposal method of fly ash is different for each country." > How about Leachate Treatment for disposed bottom and fly Ash? How are they treated and what parameters to look into?	Davao	Leachate treatment and parameters of the disposed ash should be discussed in another activity dealing with regulation of landfill.		None
31	-	-	Suggestion: Acceptable Waste Type In Table 3.1 of the draft BAT/BEP Guidelines on Target waste and its characterization - Please remove sewage sludge as this has very low caloric value and energy recovery is not possible.	PMO	Sewage sludge is accepted in some cases while the caloric value of sewage sludge is low. It shall be decided by the facility plan.	-	None
32	-	-	Suggestion: Waste Characteristic Please include a listing of the different types of waste in a sample waste characterization/WACS done locally and specify the heating value of the different types of waste when used as feedstock.	PMO	The more information of waste characterization is added.	P24-25	Reflected in BAT/BEP GL
33	-	-	Suggestion: the Collected Cases While the examples used referring to EU, Japan, US and other industrialized countries are appreciated, kindly use more examples in developing countries from Asia or other developing countries with the same waste character as the Philippines, (Maybe Africa, South America, India, etc.?)	PMO	Developing countries do not have many WtE cases. A case of India, Vietnam, has been already included.	-	None

PROJECT ACTIVITY : 8th SUB-GROUP MEETING FOR PROJECT OUTPUT 1 (ENHANCEMENT OF NATIONAL GOVERNMENTS’ CAPACITY FOR SUPPORTING AND COORDINATING OF LGUs’ WTE PROJECT)
DATE/TIME : 16 June 2021, 9:00AM - 12NN (Philippine Time)
VENUE : Video Conference through Microsoft Teams
MATERIALS : <https://bit.ly/8thOP1SGMtg>

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Call to Order/ Meeting Objectives/Acknowledgement of Attendees (Ms. Elvira Pausing, EMB-SWMD-PMO)	● Ms. Elvira Pausing of EMB-SWMD-PMO commenced the 8th subgroup meeting for Project Output 1 when quorum was reached with 8 of the 10 agencies present, and all presenters for the meeting have signed in. ● Ms. Pausing presented the agenda and asked the subgroup members if anything else needed to be discussed.	➤ Agenda was moved for adoption with no comments and modifications from the participants.	
2.) Review of the previous discussions from the last subgroup meeting (Takahiro Kamishita, JET)	● Mr. Kamishita reviewed the pertinent discussion points from the last Subgroup Meeting last April 23, 2021. ● In the last subgroup meeting, Ms. Roxanne Barcenas of EMB-SWMD-PMO presented a summary of the comments received from the subgroup on the BAT/BEP Guidelines, noting that DOE and PPPC sent comments through PMO. ● Mr. Higashinakagawa also presented the progress of the BAT/BEP Guidelines, showing the updates that have been added guided by the comments from the subgroup. DOE, PPPC, PMO and Davao City LGU were asked to confirm the changes made by JET to ensure the alignment of edits to their feedback.		

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
3.) Technical presentation on the BAT/BEP Guidelines v2 (Mr. Takahiro Kamishita, JET)	● Mr. Kamishita presented the BAT/BEP Guidelines v2, highlighting the updates adopted from v1 to v2. ● In this discussion, he noted that the updates came from the comments from the subgroup members, additional information from the implementing bodies, and addition of visualizations and case ID’s for ease of reference. The following updates were underscored, comparing the changes to the comments received from the subgroup: ○ Accepted target waste must be defined by LGUs, waste segregation before combustion is commonly practiced. ○ Clustering may be explored by LGUs in putting up WtE facilities ○ Combustion Technologies such as stoker and fluidized bed types can meet environmental requirements ○ Facilities included in WtE Facility ○ Financial aspect, including the CAPEX and OPEX required with respect to capacity ○ Energy recovery ○ Wastewater management		

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
	○ Ash treatment and utilization ○ Role of Private and Public entities in PPP schemes ● Mr. Kamishita ends his presentation with extending the proposal to approve the BAT/BEP Guidelines v2, and endorse it to the ITWG.	● Ms. Pausing opened the floor for comments, and asked the participants on their approval of the revised guidelines: ○ [DOE] Ms. Pascual mentioned that they will need more time to review the document and send confirmation. ○ [NEDA] Mr. Kintanar relayed that he could not decide on behalf of NEDA, and will need to consult with his team prior to confirmation. ○ [PPPC] Ms. Padiernos noted that all of PPPC’s comments have been duly incorporated, and expressed support to the endorsement of the guidelines to the ITWG. ○ [QC LGU] Engr. Sabater requests more time to review the document and send confirmation. ○ [DENR-EMB-PPPPDD] Ms. Ofiaza requests more	

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
		time to review the guidelines. ○ [DENR-EMB-PPDD] Ms. Crisostomo suggested giving more time for the body to review the revisions and confirm the file. ● Mr. Kamishita agreed to give the subgroup until June 24, 2021 to send their comments and confirmation to the BAT/BEP Guidelines v2. Non-submission of comments will be interpreted as confirmation. ○ Mr. Kintanar asks for a formal request for comments to the BAT/BEP Guidelines v2.	● [JET] Send an email request to the subgroup members for comments to the BAT/BEP Guidelines v2. ● [OP1 Subgroup members] Send comments/confirmation to the BAT/BEP Guidelines v2 on or before June 24, 2021. Confirmation is implied for agencies who will not send comments within the set timeframe.
4.) Updates on the following concerns by SWMD-PMO ● Approval/Signing of the MOU between DENR and participating LGUs (Ms. Roxanne Barcenas, EMB-SWMD-PMO)	● Ms. Barcenas relays the following comments on the MOU signing: ○ [QC] MOU still on the City Administrator ■ Engr. Sabater confirmed that this is the latest update to the MOU signing. The next step after the City Administrator is the mayor's signing. ○ [DC] Paperwork has been forwarded to the Sangguniang		

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
Endorsement of the MC on the Guidelines for the Technical Standard of WtE Facility on Appropriately Controlled Combustion (Ms. Kris Morada, EMB-SWMD-PMO)	Panlunsod, but no progress yet since the office is still on lockdown [CC] MOU has been signed by the City Mayor, and now sent to EMB R7 for signing of the Regional Director. - EMB has already endorsed the MC to the EPTWG, but was sent back last week to provide a formal request for deliberation by the EPTWG.		[PMO] Give access to JET to the document monitoring matrix on the endorsement of the MC to the EPTWG.

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
5.) Wrap-up, Required Actions, and Agreements	Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. ● [JET] Send an email request for comments to the BAT/BEP Guidelines v2 within the day. ● [Subgroup] Send comments/confirmation to the BAT/BEP Guidelines v2 on or before June 24, 2021. ● [PMO] Give access to JET to the document monitoring matrix on the endorsement of the MC to the EPTWG. ● [JET, PMO] Finalize date of ITWG Meeting in July		
7.) Way forward, Schedule of the next meetings	● Proposed schedules of next SG Meetings ○ ITWG Meeting tentatively calendared in July ○ 9th OP1 SG Meeting to be held on August 11, 2021		

添付資料 11-2: 成果1サブグループ会議

11-2-9 : 9th SG1



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NOTICE OF MEETING

FOR : **ALL DESIGNATED SUB-GROUP MEMBERS FOR PROJECT OUTPUT 1**

- DOE-Renewable Energy Management Bureau (REMB)
- DILG-Bureau of Local Government Supervision (BLGS)
- DOST- Industry Technology Development Institute (ITDI)
- DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)
- NEDA-Investment Programming Group
- Public-Private Partnership Center
- LGU Quezon City-Task Force for SWM
- DENR-Foreign Assisted and Special Project Service (FASPS)
- EMB-Planning, Policy and Program Development Division (PPPDD)
- EMB-EQMD-Hazardous Waste Management Section (HWMS)
- EMB-EQMD-Air Quality Management Section (AQMS)
- JICA Experts Team (JET)
- EMB-Solid Waste Management Division/Project Management Office

FROM : **THE DIRECTOR**
 Environmental Management Bureau

SUBJECT : **9th SUB-GROUP MEETING FOR PROJECT OUTPUT 1**
Enhancement of the National Government's Capacity to Identify Issues and Provide Suggestions / Recommendations for other SWM Technologies other than WtE Under the Technical Cooperation Project (TCP) re Capacity Development on Improving Solid Waste Management through Advanced / Innovative Technologies

DATE/TIME : **04 November 2021, Thursday, 9:00 AM (MS Teams)**

AGENDA :

1. **Call to Order/Meeting Objectives/Adoption of Agenda/ Acknowledgement of Attendees**
 - Ms. Elvira S. Pausing, EMB-SWMD, PMO
2. **Presentations/Discussions:**
 - a. **Under Activity 1-1: Comments of NEDA & LGU Quezon City on the Case Study Analysis for the BAT/BEP Guidelines** - Mr. Takahiro Kamishita, JET
 - b. **Latest Updates on the WtE Bill (PPPC, DOE, DENR-EMB)**
 - c. **Updates regarding the Public Consultation on the DOE Draft Department Circular for WtE Facilities** – Ms. Ruby de Guzman, DOE-REMB
3. **Wrap-up/Required Actions/Agreements/Timelines** - Engr. Andrei Mallare, JET
4. **Updated schedules of the next meetings** – Engr. Roxanne R. Barcnas, EMB-SWMD-PMO
5. **Other Matters**

Your attendance/participation is enjoined.

ENGR. WILLIAM P. CUÑADO

9TH SUB-GROUP MEETING FOR PROJECT OUTPUT 1

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

04 November 2021, Thursday, 9:00 AM (via on-line)

TENTATIVE AGENDA

- Call to Order/Meeting Objectives/Acknowledgement of Attendees and Adoption of Agenda (20 mins) - Ms. Elvira S. Pausing, EMB-SWMD, PMO
- Technical Presentations by JET:
 - Under Activity 1-1: Comments of NEDO, Quezon City in the Case Study Analysis for the BAT/BEP Guidelines
Mr. Takahiro Kamishita (Presentation 30 mins + Q&A 5 mins)
 - Under Activity 1-6: the Manual for Planning, Evaluation, Formulation, and Supervision of WTE project
Mr. Makoto Kosaka (Presentation 15 mins + Q&A 5 mins)
- Updates of WTE bill and DOC-DC, (TBN, DOE)
- Wrap-up/Required Actions/Agreements/Timelines - Eng. Andrei Mallare, JET (Presentation/discussions/comments 15 mins)
- Schedules of the next meetings - Ms. Elvira S. Pausing, EMB-SWMD-PMO (Presentation/discussions/comments 15 mins)
- Other Matters



Output 1-1

“The Case study Analysis for BAT/BEP Guideline”

9th Subgroup Meeting for Output 1

04th November 2021

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

1

Contents of Presentation

1. History of meetings
2. BAT/BEP Guidelines in the TCP
3. JET responses to NEDA comments
4. JET responses to Quezon City comments
5. Further step

Meeting	Date in 2020	Main Presentation/Discussion
1 st SG	18 Feb. 2020	- Discussion of the target countries and type of WtE facility - Presentation of survey format for each member
2 nd SG	5 th March	- It was agreed that case studies mainly focus on combustion. - JET requested members to investigate what they are interested.
3 rd SG	4 th June	- Confirmation of selection criteria and survey format - Presentation of 4 collected case studies base on the survey format (Japan, Singapore, Netherland and France)
4 th SG	7 th July	- Presentation of summary of 15 cases
5 th SG	20 th Aug.	- Presentation of summary of 36 cases
6 th SG	14 th Oct.	- Presentation of summary of 46 cases
2 nd ITWG	3, Dec	- Explanation of Survey Procedure of Case Studies of BAT/BEP GLs - Presentation of summary of 60 BAT/BEP cases (Japan:30, Asia except Japan: 10, EU and USA:20)

Meeting	Date in 2021	Main Presentation/Discussion
4 th SG(OP4)	25, March	- Submission and Explanation of the 1st draft BAT/BEP GL (17 Mar) - Deadline for SG members' comments was set for the beg. of April
7 th SG	23, April	- Presentation of the answer for the comments - Explanation of additional information for the comments
3 rd ITWG	26, April	- Explanation of 1st draft of BAT/BEP GL - Sharing the comments from SG members and JET answers
8 th SG	14, June	- Submission of the 2nd draft BAT/BEP GL - Deadline for SG members' comments was set for June 24 (→Only DOE provided a comment to supplement information of FIT)
	July	• QC submitted the letter with comments to EMB after deadline (July) →PMO/EMB responded to QC within July • PMO suggested change of the title of the document
4 th ITWG	2, Aug.	• Submission and explanation of the 2nd draft BAT/BEP GL (updated with input by DOE, the different title suggested by PMO) • Deadline for ITWG members' comments was set by August 13
		• QC submitted a letter with the follow up comments to the communication in July(5 August) → Meeting with QC-OP4 (10 Sep) • NEDA submitted comments to EMB (18 August)

2. BAT/BEP Guidelines in the TCP

1. BAT/BEP Guidelines in the TCP (Backgrounds and understanding)

1. NSWMC Resolution669:

The National Ecology Center (NEC) is in charge of finalizing and publishing the BAT/BEP guidelines

2. The Inception Report of the TCP:

1. BAT/BEP Guidelines to be drafted in the TCP with cooperation with DOST, while finalization of the guidelines and preparation of budget shall be arranged by the NEC
2. "BAT/BEP Guidelines for WTE technologies" will not be "Obligation" but "Recommended Technologies" for WTE.

3. JET responses to NEDA comments

NEDA Comment a) Location of WtE facilities

- The report mentioned that WtE facilities in other countries were constructed and operated even in populated and urbanized areas. For this, the Expert Team may further highlight the important social, environmental, and institutional safeguards that were considered in putting up WtE facilities in such areas, and to expound whether other countries follow a standard criteria in siting WtE facilities in both urban and rural areas.
- A comparison of the advantages and disadvantages, including corresponding benefit/cost valuation and the parameters and data that need to be considered for the valuation, would guide government entities in their decision-making. Recognizing that accurate values will be location specific, at least a range or even standards/rule of thumb used may be provided.

JET's response

These aspects will be addressed in the preparation of "Planning, evaluation, formulation and supervision for WTE project" (Activity 1-6 of the TCP), to be dealt with in formulation of the project.

NEDA Comment b) Clustering of LGUs

- The study recognized clustering as one of the practicable solutions that LGUs in the Philippines may explore to address common SWM problems and to cope with the high front-end costs in establishing WtE facilities.
- We suggest that best practices and lessons learned among clustered LGUs in other countries be further detailed in the case study to illustrate how the same can be replicated in the Philippine context, especially in light of the implementation of the Supreme Court (SC) Mandanas Ruling in FY 2022, which reinforced the crucial role of LGUs in the provision of SWM facilities and services.

JET's response

- EMB drafted a Memorandum Circular particularly on the Procedural Guidelines on the Clustering of LGUs for the Common WtE Facility and currently being consulted with concerned stakeholders.
- JET would like to discuss applicability of LGUs clustering with NEDA in reviewing the draft Memorandum Circular of DENR. Also, JET will share the clustering guide and cases in Japan with NEDA while the relevant information in other countries are limited.
- What is SC Mandanas Ruling in FY 2022? Please share it with JET.

NEDA Comment c) LCV of the target waste of WtE

- Aside from lower energy generation, the study may further elaborate other potential implications of allowing facilities to accept solid wastes with lower calorific value, i.e., ranging from 4,200 to 8,000 kilojoules per kilogram (kJ/kg), or when the facilities fail to achieve such values.
- Relatedly, it may be discussed why most of the combustion facilities prefer to operate at a higher calorific value (i.e., more than 8000 kJ/kg) rather than the prescribed 4,200-5,500 kJ/kg

NEDA Comment c) LCV of the target waste of WtE

JET's response

- -If the LCV is low and falls below the stable combustion temperature, auxiliary fuel (heavy oil, kerosene, gas, etc.) is required.
- If the LCV is extremely low, the profitability and feasibility of the business is lower due to the fuel cost increase and the income decrease with less electricity generation. The business may stop in case that the waste quality guarantee is not satisfied.
- In the BAT / BEP case study, there are few low calorific value projects because only information of the projects for which facilities were constructed or scheduled to construct/operate were available. Information of non-feasibility projects were not obtained in the secondary information sources.

NEDA Comment d) Treatment of produced wastewater and fly ash before disposal

- the report explained that
- the residues from combustion process are classified into bottom ash (taken from the bottom of combustion furnace) and fly ash (captured at the cooling process of combustion gases and the air pollution control equipment) and that the bottom ash and fly ash can be separately handled and treated.
- The processes involving wastewater treatment and fly ash disposal may be further discussed in the report. A flow chart may be also included for better illustration purposes.

JET's response

- Since the treatment process differs from facility to facility, we will share the sample treatment flow at the ITWG subgroup meeting.
- In Japan, wastewater is often not discharged outside the facility, which is agreed in the consultation with stakeholders such as residents.

4. JET responses to Quezon City comments

Deliverables for WTE in the TCP

1. The Case Study Analysis for BAT/BEP guidelines (Activity 1-1)
Not "Obligation" but "[recommendations and references information](#)" for WTE.
2. The WtE technical standards (Activity 1-4), being discussed in EPTWG as JAO instead of DENR-MC Minimum "[requirements/obligations](#)" of WTE in terms of structural aspect and operational aspect.
3. The Manual for Planning, Evaluation, Formulation, and Supervision of WTE project (Activity 1-6)
A [reference manual](#) for LGUs for WTE

Understanding on the comments of QC

1. **Requests to EMB to guide:**
 - Siting process and public consultation
 - Buffer zone setting from facility
 - water body, food processing in
 - Acceptable residual waste for WTE
 - Required pre-treatment facilities for WTE

• High expectation to the NG

• As far as the minimum requirements are satisfied,

• Conditions are flexible

• LGU decides for their SWM
2. **Confirmations on the conditions**
 - BAT/BEP guidelines is limited to
 - Only stoker type can comply Clean Air Act?

• Agreed in the previous SGs in preparation of CS Analysis

• As written in the CS Analysis
3. **Consultations of the detailed conditions**
 - Example of residual waste accepted
 - WTE facility has an impact on

• Direct consultation with JET is expected and appropriate in the activities for Output2

QC Comment (example)

- On residual and disaster waste, the BAT/BEP guidelines should be clear, since all LGUs would prefer that all waste be accepted by WTE facility specially in times of disaster.
- Since non acceptance of any type of waste would mean additional cost to LGU.

JET's response

The BAT/BEP GLs in the TCP is renamed as "Case Study Analysis for BAT/BEP GLs" because this document was prepared to give reference information to LGUs. So, this document does not stipulate the guidelines which LGUs shall comply for LGUs' WTE project.

QC Comment (example)

- Are pre-treatment facilities mention by JET, should be included in WTE facility?
- Is this additional pre-treatment facility included in the BAT/ BEP guidelines that are being discussed in the TCP?

JET's response

The Cease Study Analysis for BAT/BEP GLs does not stipulate the guidelines which LGUs shall comply for LGUs' WTE project.

[JET recommend that LGUs should initiate F/S to evaluate the necessity and suitability of pretreatment facilities, then select the facilities as necessary.]

QC Comment (example)

- In our opinion residual waste cannot be considered as waste diversion since WTE process only reduce the density of waste going to the landfill. It is the same waste input but reduce in volume and weight through thermal treatment/process.

JET's response

If the Government imposes "Waste diversion" as an obligation for each LGU, it should be defined by DENR. (JET expects an answer/view by EMB.)

5. Next Step

- Endorsement on the Case Study Analysis to JCC with the consent of SG

**RESPONSES TO LGU QC's QUERIES/SUGGESTIONS REGARDING THE DRAFT
BAT AND BEP CASE STUDY ANALYSIS AND OTHER CONCERNS UNDER THE
JICA TECHNICAL COOPERATION PROJECT (TCP)**

Red texts are additional comments from QC after EMB response

Yellow Highlighted responses are input by JET.

LGU QC's QUERIES/SUGGESTIONS	EMB-SWMD-PMO RESPONSES/COMMENTS/INPUTS
1. Does BAP/BET guidelines is limited to thermal process to produce electricity which is the reason MBT is not considered? If that is the case we agree that MBT is not a WtE technology since the process is more on segregation and separation of materials. The output organic materials from MBT can be processed to make compost and/or to bio-digester to produce combustible biogas.	This office concur that Mechanical Biological Treatment (MBT) is more on the segregation/separation of recyclable plastic, metal, paper, and/or compostable waste as well as municipal solid waste which is directly collected from households and business establishments. MBT is commonly operated in EU for segregation before combustion. It can also be assumed that the target wastes for WtE Facilities may include residues from MBT. Waste-to-Energy (WtE) generally refers to the technology which uses thermal energy to generate electricity or heat, from waste. In DAO 2019-21, WtE is defined as “the process of converting wastes with various technologies, usually the conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of processes”. Though there are various types of WtE technologies such as Pyrolysis, Refused Derived Fuel (RDF), and Biogas Facilities, combustion technology is one of the most popular and reliable WtE technology at this moment with a long history of application. In the BAT/BEP guideline, the case studies would be primarily targeted for the WtE facilities utilizing combustion technology. There were no guidelines mentioned on RA 9003 regarding this technology. However, DAO No. 03-30 identified Biogas projects as under Project Group II (Non-ECPs in Environmentally Critical Areas), which are Heavy Industries, Fishery, and Logging projects with IEE as the highest

Biogas project does not have adverse impact compared to thermal process technology such as incineration and gasification. Hence, RA 9003 and previous DAO issued by DENR already encompass the guidelines of the said technology. However, we observed that it seems that most of the presented technologies is stoker type incinerator which is mass burning of MSW that is prohibited under RA 8749 Clean Air Act and RA 9003 Solid Waste Management Act.	documentary requirement (with moderate to nil significance of impact); MINOR wood processing projects, MINOR mining and quarrying projects, MINOR infrastructure projects in the same project types as listed in Proc No. 2146, as well as 16 additional project types which may be located in any of the 12 ECAs. In July 2002, the Department of Environment and Natural Resources (DENR) notified that only incineration emitting hazardous and toxic gas was prohibited after ruling of a decision by the Supreme Court of the Philippines in January 2002. Per Section 20 of RA 8749, specifically states that "Incineration, hereby defined as the burning of municipal, biomedical and hazardous waste, which process emits poisonous and toxic fumes is hereby prohibited; <i>Provided, however</i>, That the prohibition shall not apply to traditional small-scale method of community/neighborhood sanitation "siga", traditional, agricultural, cultural, health, and food preparation and crematoria; <i>Provided, Further</i>, That existing incinerators dealing with a biomedical wastes shall be out within three (3) years after the effectivity of this Act; <i>Provided, Finally</i>, that in the interim, such units shall be limited to the burning of pathological and infectious wastes, and subject to close monitoring by the Department. Likewise, per Section 48 of RA 9003, open burning of solid waste is hereby prohibited. According to our case study survey, One of Main Waste to Energy Technologies is stoker type incinerator. <i>Request JET to provide additional comments/inputs on this.</i> Please see above yellow hatched one.
G.R. No. 147465,	Yes

Section 20 does not absolutely prohibit incineration as a mode of waste disposal; rather only those burning processes which emit poisonous and toxic fumes are banned.	
Does stoker type incinerator qualify as burning process of waste technology that does not emit poisonous and toxic fumes as compared to other type of WTE technology?	Not only stoker but also other technologies such as fluidized bed type can satisfy the environmental standard set in each country by proper operation and equipment installation. While stoker type is not only choice of the WTE technology, there are the most track records and successful operation history.
The ruling of SC that state “does not emit toxic fumes,” imply that emission of dioxin and furans must be zero? or within standard? This might be on the argument of those who oppose WTE technology that should be clarified.	DENR stipulates emission standards for toxic substances in the Clean Air Act, and "within standards" is the answer to your question. Through discussions and consultation with stakeholders, it is possible to set the facility standards, as far as the applied WTE facility can meet in the operation process, that may be requested by the residents (application of stricter standards), which is one of requirement of LGU in the process of business formation. There are many cases which set the stricter standards than national standards as described in the case study.
1. With regards to the acceptable residual waste to WTE facility, we consider construction waste as part of the residual waste and should be accepted in the WTE facility since further segregation of this type of waste from residual waste collection is extremely difficult to implement. Conversely, another concern will be the disaster waste, is it acceptable to WTE facility considering that during emergency or on times of disaster situation all waste generated is already considered as residual waste? Although it depends on the type of disaster situation since flood, typhoon earthquake or fire debris produces different type of residual/disaster waste and moisture content and combustibility vary.	Per Disaster Waste Handling Guideline, disaster waste was defined as the generated wastes by the impact of a disaster, both as a direct effect of the disaster as well as in the post-disaster phase as a result of poor waste management. However, there is still no separate definition for Construction wastes. <i>Request JET to provide additional inputs/comments on this?</i> Disaster waste can be received in WtE- ACC facility with pretreatment facilities, such as crushing or separation, to remove incombustible materials. Per Section 4.1.4 on the Category of Target Waste for Combustion of the BAT/BEP guidelines, the LGUs shall decide or check the target waste to be treated in their WtE facility nbased from their approved 10-year solid waste management plan. Per approved NSWMC resolution for WACS Guidelines, construction wastes/debris are

	considered as bulky waste, which is under the category of Special waste. Bulky wastes require separate hauling arrangements with the LGUs (for households) or Contracted parties (for commercial, Industrial, and Institutional Sources). However, it is to be noted that some wastes can be traded in some areas and is likely to be disposed in the landfill in other areas. It is recommended that LGUs can also refer to other pertinent policies and ordinances relative to the same. Per Section 4.1.4 on the Category of Target Waste for Combustion of the BAT/BEP guidelines states that, “Some facilities also receive disaster waste in emergency cases – in cases of earthquakes and flood disaster”. This can also be applied in the Philippines which is considered as one of the disaster-prone areas. Nevertheless, the LGUs shall have to check and decide the target waste to be treated in their own WtE facility.
On residual and disaster waste, the BAT/BEP guidelines should be clear, since all LGUs would prefer that all waste be accepted by WTE facility specially in times of disaster. Since non acceptance of any type of waste would mean additional cost to LGU.	The BAT/BEP GLs in the TCP we renamed as “Case Study Analysis for BAT/BEP GLs” because this document was prepared to give reference information to LGUs. So, this document does not stipulate the guidelines which LGUs shall comply for LGUs WTE project.
EMB should clarify the acceptable waste in WTE in DAO 2019-21 in order to avoid confusion during the implementation stage of WTE project.	LGU can define the details of waste segregation in LGUs solid waste management plan following the requirements by the existing national Law/regulation. The types of waste accepted by WTE are set in detail by the LGU which is in charge of facility management referring to the three categories of RA9003 and the regulations of DAO2019-21. In the case of other countries as well, it is common for the national government to not uniformly determine the detailed waste classification for WTE facility acceptance.
Are pre-treatment facilities mention by JET, should be included in WTE facility?	As written above, the Cease Study Analysis for BAT/BEP GLs does not stipulate the guidelines which LGUs shall comply for LGUs WTE project.

	For matters not specified by DENR, the pretreatment facility to be adopted can be decided at the discretion of the LGU side.
Is this additional pre-treatment facility included in the BAT/ BEP guidelines that are being discussed in the TCP?	As written above, the Cease Study Analysis for BAT/BEP GLs does not stipulate the guidelines which LGUs shall comply for LGUs WTE project. [JET recommend that LGUs should initiate F/S to evaluate the necessity and suitability of pretreatment facilities, then select the facilities as necessary.]
Also, we would like to clarify if the Min. Tonnage Guaranteed should be weigh at the said pre-treatment facility or at the WTE facility.	In forming a project by the PPP scheme, the waste weighing point is a matter agreed in the contract. Generally, it is measured at the entrance to the facility of the PPP project.
2. For addendum, the definition of residual waste under 6 th Sub-group meeting in Output 1 must base on DAO 2019-21 as it conforms to the MOU between DENR and LGUs.	Per the Meeting summary of the 6th Sub-group meeting for OP1, it was mentioned that residuals processed in WTE facilities can be considered as residuals with potential for diversion, citing the WACS guidelines stating that: “residuals with potential for recycling refers to wastes that would normally be considered for disposal in a sanitary landfill due to economic viability but may eventually be recycled if feasible techniques or technologies would be available to an LGU provided these are dry and not contaminated by hazardous or food wastes”, which was recommended to be incorporated in the revised definition of “residual waste”.
Can you give an example of residual waste that has potential for recycling already delivered in the WTE facility?	Materials which can be recycled in the market depend on the recycling industry and the market for recycled resources in each LGUs. Even after sorting, plastic and paper may be mixed with other waste and sorted again at WTE. Technically, it can be said that these plastics and papers can also be recycled, but the profitability, which is key to sustain recycling activities, depends on the situation of each LGUs.
Does it mean another segregation will be done in WTE facility, after LGUs disposed segregated waste?	If the quality of segregation at LGU is low, it is possible to re-sort at WTE facility. When re-sorting is performed, additional equipment and associated cost increases.

In our opinion residual waste cannot be considered as waste diversion since WTE process only reduce the density of waste going to the landfill. <u>It is the same waste input but reduce in volume and weight through thermal treatment/process.</u>	If the country imposes “Waste diversion” as an obligation for each LGU, it should be defined by DENR. (JET expects an answer/view by EMB.)
Generally waste diversion means any combination of waste prevention such as recycling, reuse, and composting that reduces waste disposed to landfill.	What is the source which defines the “general meaning of waste diversion” given in your sentence? If the source of your definition is authorized in Philippines, you can adopt this definition. Please clarify it to EMB. (JET expects an answer/view by EMB.)
If we will allow residual waste as potential diversion, then we should no longer segregate waste since all materials or waste inputs that can be reduce through thermal process is considered or counted as waste diversion.	If the rules of the national and local governments allow it, incineration of all waste can be an option of the waste treatment method. It should be decided in the SWM plan of the LGUs in accordance with the national law and regulations. However, DAO 2019-21 allow incineration of only segregated waste. The idea of promoting the effective use of resources is widespread worldwide, and it is common for waste after segregation to be incinerated.
3. About the Case Study presented in Table 3.1 of BAP/BET Draft Guidelines, it is essential for us to discuss and understand what the common siting requirement of the WTE is presented?	<i>Request JET to provide inputs/comments on this?</i> Please follow the below comments.
a. How many kilometers from residential area?	<i>Request JET to provide inputs/comments on this?</i> Per Section 4.1.3 on the Required Area of WtE Facility of the BAT/BEP Guidelines – “In case of Japan, there is regulation not for WtE but for industrial plant and factory which stipulates necessary green area and environmental facility like park, the area for sports, etc.” As confirmed in the case studies in BAT/BEP Guideline, the WtE plant in Austria (Wien) and the WtE in Japan (Shibuya) is located in urban area and less than 20meters only from residential area. However, per Section 5 of the Draft Policy on MRF Clustering, currently being consulted to various stakeholders, a minimum buffer zone of

	50 meters is used for sensitive receptors such as schools, hospitals, parks, and residential areas. If the area is zoned, MRFs are preferably located in an industrial zone or close to a sanitary landfill to facilitate efficient movement of waste from various generators and disposal of residual or biodegradable materials. Per EIAD and HWMS recommendations, DAO 2004-36 can be used as reference for the buffer zone requirements. Providing you herewith the following additional examples of buffer zones for existing waste processing facility in other countries which can be used as reference: 1. Country : Malaysia Source : Guidelines For Siting And Zoning Of Industry And Residential Areas Reference : Treatment of non-hazardous waste by combustion or incineration or other methods, with or without the resulting production of electricity or steam, substitute fuels, biogas, ashes or other byproducts for further use etc.- 350 meters 2. Country : United Kingdom Source : Devon Waste Plan- Protecting Waste Management Capacity Reference : Buffer Distance Hazardous and non-hazardous landfill Physical, physio-chemical and biological treatment Thermal treatment - 500m 3. Country : China Source : September 2008 notice on environmental impact assessments for biomass-fired power plants issued by the MEP and the National Energy Bureau. Reference : 300-metre buffer zone between incineration plants and local residents
We recommend that we established a safe buffer zone for the residential area for WTE since MRF which has less impact is 50 meters.	As described in the BAT / BEP document, some WET facilities are in densely populated areas in Japan. Buffer zone specified for WTE facility does not exist in Japan.

	JET understand that, if the national government does not specify, a buffer zone can be specified at the discretion of the LGU, if necessary.
b. How many kilometers from agricultural area?	Same comment in item a. Per Section 5.2.2 of DAO 2004-36, the minimum considerations for siting TSD Facilities, shall not be constructed within 75 meters from a Holocene fault or known recent active fault and shall not be located in areas where they are known to be habitat of listed endangered species <i>Request JET to provide inputs/comments on this?</i>
We recommend that we discuss the buffer zone from agricultural area	By setting standards for environmental parameters (air quality, noise, vibration, water quality etc.), measures will be examined and adopted in the EIS procedure for businesses to comply with the standards, and the impact will be avoided or reduced. For this reason, JET does not consider it necessary to set a buffer zone reference specifically for WTE. Please clarify it to EMB. (JET expects an answer/view by EMB.)
c. How many kilometers from bodies of water? And on what type of bodies of water is it Class A, B, C, etc.?	Same comment in item a. Per Section 5.2.2 of DAO 2004-36, the minimum considerations for siting TSD Facilities, shall be located at least 50 meters away from any perennial stream, lake or river. <i>Request JET to provide inputs/comments on this?</i> As described in the case studies, some WtE facility apply the closed system of wastewater. In such case, there is no wastewater discharge to existing waterbody. Therefore, it is not necessary to regulate specific requirement of WTE-ACC facility.
We recommend that we discuss buffer zone for different type of bodies of water special if it a source of drinking water.	By setting standards for environmental parameters (air quality, noise, vibration, water quality etc.), measures will be examined and adopted in the EIS procedure for businesses to comply with the standards, and the impact will be

	avoided or reduced. For this reason, JET does not consider it necessary to set a buffer zone reference specifically for WTE. Please clarify it to EMB. (JET expects an answer/view by EMB.)
d. What is the zoning categories does WTE facility permitted? Industrial zone, Mixed Use, Special Development Area or others?	Copy of the EMB MC No. 2020-23 (Clarification on the Requirements of WtE Projects Relative to ECC Application Pursuant to DAO 2019-21) is hereto attached for your reference/guidance. Category A (ECP / EIS) : $\geq 30\text{MW}$ or $\geq 1,140$ Tons per day feedstock Category B (Non-ECP / EIS) : $\geq 10\text{MW}$ but $< 30\text{MW}$, or ≥ 380 Tons per day but not $< 1,140$ Tons per day feedstock Category B (Non-ECP / IEE) : $\geq 1\text{MW}$ but $< 10\text{MW}$, or ≥ 38 Tons per day but not < 380 Tons per day feedstock <i>Request JET to provide further inputs & comments on this?</i> WTE-ACC project shall follow relevant law in the Philippines. In Section 5 of NSWMC Resolution 669-2016, it is described that “A WTE facility shall be located at a site consistent with the land use plan of the LGU and must always consider all environmental criteria on site selection including provision for buffer zone(s)”.
Environmental criteria on site selection including provision for buffer zone has not yet been define by DAO 2019-21. Hence it is not clear if mixed used and Special Development Areas are allowed for WTE facility. Land use plan changes over time and the needs of the LGU	Consistent with LGU's Land Use Plan for the location of WTE is one of the requirements of the NSWMC resolution. According to this, it is possible not to allow the location of WTE in areas that the LGU deems unsuitable.
e. Does it have standard siting requirements?	<i>Request JET to provide inputs/comments on this?</i> Siting shall be selected by the project owner based on applicable law and regulation in the country. The detailed procedure of site selection in case of Japan will be shared with ITWG members of Output1 under another project activity.

f. What type of bodies of water does the effluent from WTE facility can be discharged?	Per BAT/BEP Guideline v2 Section 4.1.9 Environmental Pollution Control, “Wastewater shall be collected from the source of wastewater depending on the treatment method. Organic and inorganic wastewater is treated separately. After the treatment, wastewater is discharged into sewerage or is reutilized in the plant.” <i>Request JET to provide further inputs & comments on this?</i> Per Section 6.1 of DAO 2019-08, each water body classification is provided with Water Quality Guideline (WQG) to be maintained. The WQG for each water body classification is defined by primary and/or secondary parameters. As long as the effluent from WtE facilities is within the identified standard of WQG, the water quality standard will be dependent on the water class that it will be discharged on. Wastewater must be treated to meet the standards of water body before discharge. If the closed system of wastewater is applied, no wastewater is discharged from WTE-ACC facilities.
4. We noticed that there was no discourse on the siting of WTE facility in the previous meetings. We recommend that we should consider a standard siting requirement for WTE facility just like in landfill. As LGU we will be accountable to our constituents on the WTE facility location since this is a very controversial issue. We believe that siting will be a crucial issue in the development of WTE facility that should be part of the information dissemination.	In line with the approved DAO 2019-21, this office drafted a <i>Memorandum Circular particularly on the Procedural Guidelines on the Clustering of LGUs for the Common WtE Facility</i> and currently being consulted with concerned stakeholders. The guideline covers the roles of key proponents and provide specific guidance on the technical procedures and requirements for the clustering of WtE facilities wherein the common WtE Facility Siting Criteria is included. It is currently being forwarded to the various EMB Divisions and EMB regional offices prior to the conduct of stakeholder’s consultation to further refine the draft policy. <i>Request JET to provide further inputs/comments on this?</i>

	The detailed procedure of site selection in case of Japan will be shared with ITWG members of Output1 under another project activity.
Does EMB consider WTE facility the same as TDS facility for hazardous waste since same criteria can be applied in the siting of WTE facility?	Please clarify it to EMB. (JET expects an answer/view by EMB.)
5. Further, we should also be prepared to discuss and response with the affected community as well as NGOs that will scrutinize the details of contentious project such as WTE facility. We believe that this is the proper forum to learn more about the siting requirement of WTE facility since expert form JICA have already experienced in dealing with this matter. We have already mentioned during one of our meetings that we are still expecting that DENR can issue guidelines on WTE facility specially on the proper siting of WTE facility.	May we also inform you that the above-mentioned draft MC includes community involvement and consultations to enable them on a better-informed plan with detailed opportunities to participate and assure better community support geared towards its adoption as well as to ensure social acceptability. <i>Request JET to provide further inputs/comments on this?</i> The detailed procedure of site selection including consultation with the public/NGOs in case of Japan will be shared with ITWG members of Output1 under another project activity. In the EIS procedure of DENR, the public consultation is required to obtain the opinion of NGOs and the affected community.
We recommend that standard procedure for siting and public consultation be discuss more thoroughly in the BAT/BEP guidelines since this will be the key to a successful WTE project	The BAT/BEP GLs in the TCP we renamed as “Case Study Analysis for BAT/BEP GLs” because this document was prepared to give reference information to LGUs. Since it should be included in the requirements of EIS procedure, it should be stipulated in the EIS-related rules. Within that regulation, WTE may be one classification of project type.
6. In relation to this we also suggest that public consultation or scoping session should be a priority in the feasibility study. We are hoping that we can cope with the pace of the discussion of the TCP and clearly explained to us our issues and concerns in regard to the capacity building project of JICA.	Rest assured that all LGUs and other concerned stakeholders will be invited and provided with the draft MC during our upcoming stakeholders’ consultation. Copy of the EMB MC No. 2020-23 (Clarification on the Requirements of WtE Projects Relative to ECC Application Pursuant to DAO 2019-21 for your guidance and reference.
Additional clarification:	

Can a WTE facility be constructed in an environmentally sensitive/critical or environmentally protected area? What should be the buffer or distance to this area?	JET understands that structures cannot usually be built in protected areas. Not only WTE but also other business activities and infrastructure construction should follow the DENR rules for using protected areas.
What should be the required distance of the WTE facility to a food processing industry?	By setting standards for environmental parameters (air quality, noise, vibration, water quality etc.), measures will be examined and adopted in the EIS procedure for businesses to comply with the standards, and the impact will be avoided or reduced. For this reason, JET does not consider it necessary to set a buffer zone reference specifically for WTE. Please clarify it to EMB. (JET expects an answer/view by EMB.)
Agro-industrial facility? Do we have WTE facility model that is near the potable drinking water reservoir? What is the radius of impact of a WTE facility?	JET understands that the evaluation and examination will be conducted in accordance with the current rules of the Philippines, including the EIS procedure. There may be a site if environmental parameter standards are observed and the impact is avoided or mitigated.
Does WTE facility affect or has an impact on groundwater or soil contamination?	JET understands that necessary measures will be taken after being evaluated and examined in accordance with the current rules of the Philippines, including the EIS procedure. There is no impact on WTE where proper structure/facility and operation are carried out.
Does WTE facility considered as heavy industry that should be located in industrial zone?	In Japan, administrative procedures are required to position it as a land use plan in city planning as a waste disposal facility. Although it is possible to locate in areas other than industrial areas, the environmental regulation standards for the usage classification of the location are applied.
What should be the ideal climatic/meteorological and topographic condition of the site for the WTE facility to avoid inversion and smog?	Flat land that can secure sufficient site is preferable. Locations in extremely steep valleys and basins where air pollution is a concern are not desirable. However, the site selection is flexible because it is evaluated and examined in accordance with the current rules of the Philippines, including the EIS procedure, and the impact is avoided or reduced by taking necessary measures. In EIS, it is common to predict and evaluate the location the maximum pollutant value and impact

	on ambient air quality by exhaust gas diffusion simulation for air pollution.
What type of airshed does the WTE facility will be classified/located? Attainment or non-attainment area?	Please clarify it to EMB. (JET expects an answer/view by EMB.) Please share the airshed type designation in the Philippines because JET does not have such information.
What will be the effect of WTE facility to our national ambient air standard?	JET understand that the existing ambient air standards will not be changed for a single WTE facility.
We think that aside from local land use plan we should also consider airshed as criteria for WTE facility siting.	Please clarify it to EMB. (JET expects an answer/view by EMB.) Please share the airshed type designation in the Philippines because JET does not have such information.

Thank you for accommodating our queries.

NEDA's Comments on the Case Study Analysis for Guideline of Best Available Technique/ Best Environmental Practice (BAT/BEP)

1. Overall, we find the report an insightful documentation covering the technical, institutional and financial aspects of developing WtE projects, which may be of valuable use noting that WtE has increasingly gained interest and importance among LGUs, and as equally recognized in the updated PDP.
2. In this context, and given the lack of experience in the Philippines on developing and operating/maintaining WtE facilities, the following are suggested to be further substantiated and expounded in the report to further help and guide the LGUs and the national government in considering the adoption of WtE:

NEDA Comment	JET response
a. <u>Location of WtE facilities</u> – The report mentioned that WtE facilities in other countries were constructed and operated even in populated and urbanized areas. For this, the Expert Team may further highlight the important social, environmental, and institutional safeguards that were considered in putting up WtE facilities in such areas, and to expound whether other countries follow a standard criteria in siting WtE facilities in both urban and rural areas. A comparison of the advantages and disadvantages, including corresponding benefit/cost valuation and the parameters and data that need to be considered for the valuation, would guide government entities in their decision-making. Recognizing that accurate values will be location specific, at least a range or even standards/rule of thumb used may be provided.	These aspects will be addressed in the preparation of “Planning, evaluation, formulation and supervision for WtE project” (Activity 1-6 of the TCP), to be dealt with in formulation of the project.
b. <u>Clustering of LGUs</u> – The study recognized clustering as one of the practicable solutions that LGUs in the Philippines may explore to address common solid waste management	–EMB drafted a Memorandum Circular particularly on the Procedural Guidelines on the Clustering of LGUs for the Common WtE Facility and

problems and to cope with the high front-end costs in establishing WtE facilities. We suggest that best practices and lessons learned among clustered LGUs in other countries be further detailed in the case study to illustrate how the same can be replicated in the Philippine context, especially in light of the implementation of the Supreme Court (SC) Mandanas Ruling in FY 2022, which reinforced the crucial role of LGUs in the provision of solid waste management facilities and services.	currently being consulted with concerned stakeholders. –JET would like to discuss applicability of LGUs clustering with NEDA in reviewing the draft Memorandum Circular of DENR. Also, JET will share the clustering guide and cases in Japan with NEDA in the discussion. –What is SC Mandanas Ruling in FY 2022? Please share it with JET.
c. <u>Lower calorific value (LCV) of target waste in WtE facilities</u> – Aside from lower energy generation, the study may further elaborate other potential implications of allowing facilities to accept solid wastes with lower calorific value, i.e., ranging from 4,200 to 8,000 kilojoules per kilogram (kJ/kg), or when the facilities fail to achieve such values. Relatedly, it may be discussed why most of the combustion facilities prefer to operate at a higher calorific value (i.e., more than 8000 kJ/kg) rather than the prescribed 4,200-5,500 kJ/kg¹.	-If the calorific value of waste is low and falls below the stable combustion temperature, auxiliary fuel (heavy oil, kerosene, gas, etc.) is required to maintain the combustion temperature. The stable combustion temperature in a waste incinerator refers to the temperature range of 850 degree-C or higher, where the decomposition of dioxins can be promoted. The limit value of the lower calorific value that can be operated while maintaining this stable combustion temperature is around 4,200-5,000 kJ/kg. - If the calorific value is extremely low, the profitability of the business is low and the feasibility of the PPP business is reduced due to the cost increase of combustion fuel and the decrease in income due to the decreased power generation. –In addition, the business may not continue in case that the

	waste quality guarantee is not satisfied. -In the BAT / BEP case study, there are few low calorific value projects because only information of the projects for which facilities were constructed or scheduled to construct/operate were available. Information of non-feasibility projects were not obtained in the secondary information sources.
d. <u>Treatment of produced wastewater and fly ash before disposal</u> – the report explained that the residues from combustion process are classified into bottom ash (taken from the bottom of combustion furnace) and fly ash (captured at the cooling process of combustion gases and the air pollution control equipment) and that the bottom ash and fly ash can be separately handled and treated. The processes involving wastewater treatment and fly ash disposal may be further discussed in the report. A flow chart may be also included for better illustration purposes.	Since the treatment process differs from facility to facility, we will share the sample treatment flow at the ITWG subgroup meeting. In Japan, wastewater is often not discharged outside the facility which is agreed in the consultation with stakeholders such as residents.

¹ Based on the “The Design and Planning Procedure of Waste Treatment Facility” (2017), as mentioned in the case study.

Activity 1-6

To prepare the Manual for Planning, Evaluation, Formulation, and Supervision of WTE project

4th November 2021

Makoto KOSAKA, SWM-PPP Expert

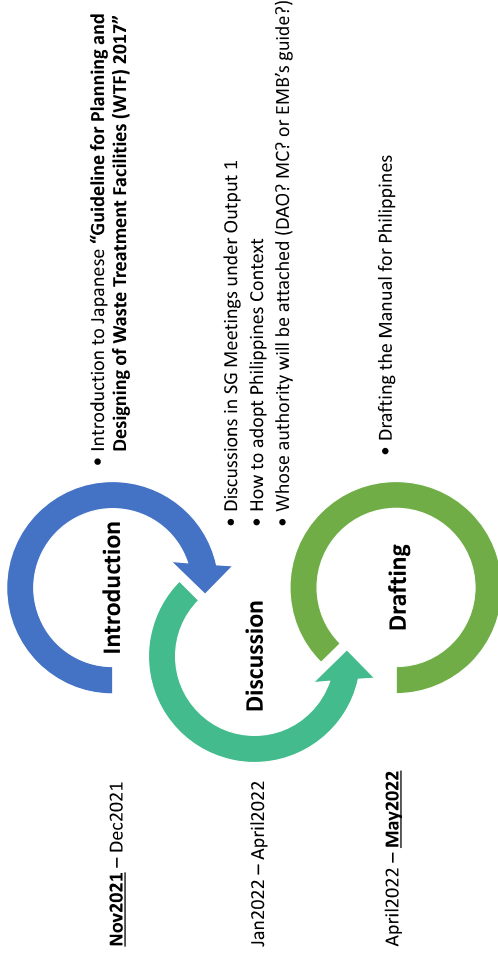


The Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management (SWM) through Advanced Innovative Technologies



Guideline for Planning and Designing of WTFs 2017

Title	Guideline for Planning and Designing of Waste Treatment Facilities (WTF) 2017
Publisher	Japan Waste Management Association
Price	JPY 27,000-
Last Update	May 2017
Size and Pages	A4 x 850 pages
TOC	Volume I Planning Guidelines Chapter 1 Formulation of waste treatment master plan Chapter 2 Formulation of regional plan for promoting the formation of a recycling-oriented society Chapter 3 Formulation of WTF life prolong plan Chapter 4 Formulation of various plans for the development of WTFs Chapter 5 Legal procedures for setting up a WTF Chapter 6 Procedures for ordering WTF construction work Chapter 7 Financial Resources for Construction of Waste Disposal Facility Volume II Design Guideline Chapter 1 Basic matters regarding waste incineration facilities Chapter 2 Matters concerning the functions of waste incineration facilities (excluding gasification and melting facilities and gasification reforming facilities) Chapter 3 Continuous operation type waste incineration facility Chapter 4 Intermittent operation type waste incineration facility Chapter 5 Gasification and Melting Facility / Gasification Reforming Facility Chapter 6 Incineration Residue Melting Facility Chapter 7 Non-combustible / Oversized / Container and Packaging Recycling Facility Chapter 8 Waste Transport and Transfer Facility Chapter 9 Refuse Derived Fuel Production Facility Chapter 10 Waste Carbonization Facility Chapter 11 Waste Methane Recovery Facility



Chapter 4: Formulation of various plans for the development of WTFs

Sec	Table of Contents	Number of Pages
S1	Positioning the Various Plans regarding the Development of WTFs	5
S2	Selection of Candidate Construction Sites	9
S3	Survey for the Possibility of PI/PPP Introduction	3
S4	Selection of Treatment Methods	2
S5	Development of Facility Basic Plan	44
S6	Core Items in Waste Treatment Facility Design	11
S7	Safety Measures	4
S8	Dismantling of Incineration Facility	4
	Total	79

WASTE TREATMENT MASTER PLAN

Tasks for the Development of Waste Treatment Facility

Various Plans for the Development of Waste Treatment Facility

- Selection of Construction Site
- Study on Introduction of PI/PPP
- Selection of Treatment System
- Facility Basic Plan

Relevant Studies (example)

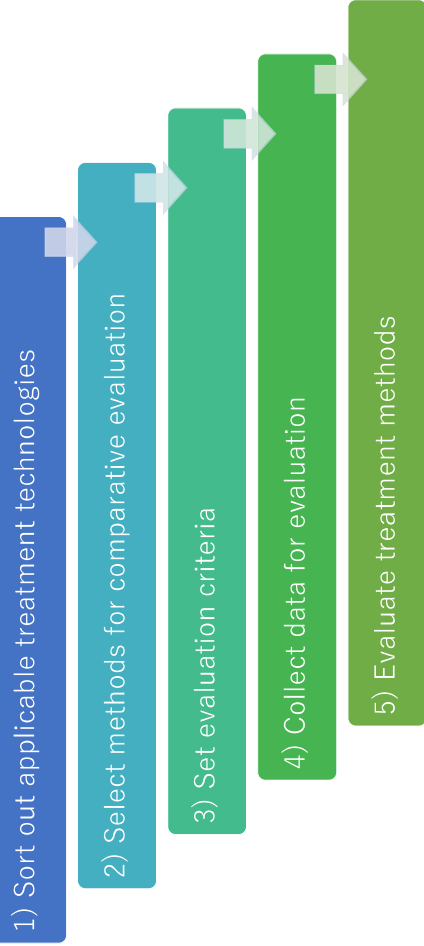
- Environment Impact Assessment
- Topographical Survey
- Geographical Survey
- Study for Buried Cultural Property
- Soil Pollution Investigation *2

Ordering Procedure for Construction, O&M of Waste Treatment Facility *3

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 combined and/or separate contract of construction and O&M

Sub-section	Contents
2.1 Background	Background of selection of candidate construction sites.
2.2 Laws for regulation of the potential construction site	Lists up environmental protection laws as well as laws on facility establishment, land use and construction which should be taken into consideration.
2.3 Candidate site selection procedure	Illustrates candidate site selection procedure.
2.4 Conditions and criteria related to candidate site selection	Shows examples of conditions and evaluation items related to candidate site selection.
2.5 Sample procedural flow for selection of candidate site	Illustrates procedural flow for selection of site.
2.6 Considerations in the selection of candidate sites	Describes the points for consideration in selection of sites.
2.7 Actions after the selection of candidate site	Describes the actions to be taken after selection of the site.

S4. Selection of Treatment Methods



S3. Survey for the possibility of PFI/PPP introduction

Objectives of PFI/PPP Feasibility Study

- To juxtapose different business methods to see which can be selected for the local government to introduce private sectors to ensure efficient and economical operation, maintenance, and management of the waste treatment facility
- To compares and evaluates which business methods should be selected in consideration of regional circumstances, business stability, economic efficiency, and intention of the private operators

View points to evaluate business methods

- Whether participation of multiple private companies is expected (intention survey)
- Whether quantitative effects (economic effects) can be expected (quantitative evaluation)
- Whether qualitative effects can be expected (qualitative evaluation)
- Whether comprehensive effects are expected after introduction of such (comprehensive evaluation)

S5. Development of Facility Basic Plan

Sub-section	Contents
5.1 Background	Describes background of developing facility basic plan. Explains how to set out ordering conditions for facility development.
5.2 Ordering conditions relating to facility development	1) Planned waste amount 2) Capacity of the facility 3) Planned Waste Quality 4) Pollution prevention standards 5) Waste heat utilization
5.3 Planned waste quality	Describes the points to be considered when determining the planned waste quality. 1) Type of waste 2) Items for Waste Quality Analysis 3) Items of Waste Quality Analysis and their Purposes 4) General trend of waste quality 5) Example of Waste Quality Analysis 6) Setup the Quality of Target Waste in a Waste Incineration Facility 7) Setting of planned target waste quality in recycling centers (MRFs) for non-combustibles, bulky and packaging waste
5.4 Structure of Facility Basic Plan	Describes the details to be included in Facility Basic Plan.
5.5 Stable supply of electricity	Introduces the outline of power liberalization, FIT system and widening of power generation business.
5.6 Measures against disaster waste treatment	Discusses how to deal with disaster waste that should be taken into account in the development of waste treatment facilities.

Sub-section		Contents
6.1	Notifications to government offices	Shows a reference example of application procedures to various government agencies by a local government that will be the project proponent.
6.2	General structure of waste treatment facility	Describes general structure and design considerations of waste treatment facility.
6.3	Earthquake-resistant and disaster prevention structure of waste treatment facility	Discusses the necessity of disaster countermeasures, earthquake-resistant design of major facilities, prevention of secondary disasters, and examples of disaster prevention measures.
6.4	Measures in snow-covered cold regions and areas affected by salt	Illustrates measures in snow-covered cold regions and areas affected by salt.

8.1 Dismantling of Incineration Facility

- Addressing dioxins and asbestos
- Dismantling cost issues

8.2 Dismantling Manual

- Regulations, guidelines and manuals
- Method of dismantling

8.3 Estimation of Dismantling Costs and Financial Resources

- Estimation of dismantling costs
- Subsidy system

7.1 Accidents at waste treatment facilities

- Occurrence of accidents
- Example of accidents

7.2 Facility safety measures

- “fail-safe” and “fool-proof” of equipment

7.3 Formulation of accident response manual

- Accident response manual
- Crisis management and safety assessment

Updates on Policies for Waste-to-Energy (WTE) Technology Development in the Philippines

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

9th Subgroup Meeting for Project Output 1

04 November 2021

Biomass Energy Management Division
Renewable Energy Management Bureau
DEPARTMENT OF ENERGY



Policy Support for WTE Development

Department Circular:

"Prescribing the Policies and Programs to Promote and Enhance the Development of Waste-to-Energy (WTE) Facilities"

Purpose and Objectives:

- Promote WTE facilities as baseload renewable energy in recognition of its contribution to solid waste management, local economy and green jobs creation;
- Provide definition and conditions for eligible WTE facilities utilizing municipal solid wastes (MSW) pursuant to the RE Act; and
- Prescribe policies and programs to enhance the electric power industry participants in the development of WTE facilities.

Legislations: 2020 - 2021

1 Senate Bill No. 1789: "Waste-to-Energy Act"

- An Act Establishing a National Energy Policy and Regulatory Framework for Facilities Utilizing WTE Technologies
- Pending for Second Reading

2 House Bill No. 7829: "Waste Treatment Technology Act"

- Consolidation of nine House Bills (Nos. 618, 933, 1938, 3174, 3423, 4419, 5401, 5706 and 7045)
- Submitted to the Senate on 25 November 2020

Updates on Proposed Policy

Draft Department Circular

"Prescribing the Policies and Programs to Promote and Enhance the Development of Waste-to-Energy (WTE) Facilities"

Conducted three-day Virtual Public Consultations on 03, 06 and 08 September 2021, covering stakeholders from Luzon, Visayas, and Mindanao;

Consultation meeting with REMB (BEMD and TSMD) and DOE-Legal Services held on 06 October 2021 to discuss way forward on the comments/inputs during public consultations and e-mail;

Currently, finalizing the Draft Department Circular

Thank You!

PROJECT ACTIVITY : 9th SUB-GROUP MEETING FOR PROJECT OUTPUT 1 (ENHANCEMENT OF NATIONAL GOVERNMENTS’ CAPACITY FOR SUPPORTING AND COORDINATING OF LGUs’ WTE PROJECT)
DATE/TIME : 04 November 2021, 9:00AM - 11:30AM (Philippine Time)
VENUE : Video Conference through Microsoft Teams
MATERIALS : <https://bit.ly/9thOP1SGMtg>

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Call to Order/ Meeting Objectives/Acknowledgement of Attendees (Ms. Elvira Pausing, EMB-SWMD-PMO)	● Ms. Elvira Pausing of EMB-SWMD-PMO commenced the 9th subgroup meeting for Project Output 1 when quorum was reached with 9 of the 13 agencies present. ● Ms. Pausing recapped the highlights of the 8th OP1 SG Meeting held last July 6, 2021 where the BATBEP Guidelines were presented. ● Ms. Pausing presented the agenda and asked the subgroup members if anything else needed to be discussed.	● An additional agenda item was added for the presentation of Mr. Makoto Kosaka of JET for Activity 1-6. ○ The discussion item was acknowledged for addition to the agenda.	
2.) Technical presentation on Activity 1-6: Manual for Planning, Evaluation, Formulation and Supervision of WTE Project (Mr. Makoto Kosaka, JET)	● Mr. Kosaka introduced Activity 1-6, sharing the pertinent steps and timelines for the activity implementation. ● Mr. Kosaka discussed the Guidelines, particularly focusing on Chapter 4: Formulation of various plans for the development of Waste Treatment Facilities. ● With the overview of the guidelines discussed, Mr. Kosaka enjoins the OP1 Subgroup members to review the materials	Proposed timeline for Activity 1-6: [Nov2021-Dec2021] Introduction to Japanese “Guideline for Planning and Designing of Waste Treatment Facilities” [Jan2022-Apr2022] Discussion on how the guidelines will be adopted in the Philippine context through OP1 subgroup meetings [Apr2022-May2022] Drafting of Manual for Philippines	

	provided and be guided by the timeline for the drafting of a similar guideline in the context of the Philippines. ● He ends his presentation by soliciting the approval of the subgroup members to the proposed timeline. ● For further consultation, Mr. Kosaka also raised to the subgroup to discuss how the manual can be adopted (e.g. DAO, MC, etc)	● No comments were noted in the timeline and will be adopted as is. ● Engr. Esguerra requests for DENR and related offices to note in the provided Japanese Guidelines, the corresponding local regulations that relate to the manual, to guide the subgroup in reviewing the materials.	[OP1 SG Members] Review and provide comments to the Japanese Guidelines guided by the approved timeline [DENR] To provide the local regulations corresponding to the items in the Japanese “Guideline for Planning and Designing of Waste Treatment Facilities”
3.) Updates on the WtE Bill (Engr. Romeo Galamgam, DOE)	● Engr. Galamgam relays that the WTE Bills, namely the SB 1789 and HB 7829 are still pending for the next hearing, but assures the project team that constant communication with the Senate and House Committee on Energy is being facilitated.	● Mr. Kosaka inquired about the timeline of when the hearing will be scheduled. ○ Engr. Galamgam noted that they cannot give a specific date given that the election season has begun and this may affect the lineup of hearings being scheduled. He notes that he will be updating the TCP once the date of hearing has been finalized.	[DOE] To share the schedule of hearings for HB7829 once set.
4.) Updates on the DOE Draft Department Circular for WTE Facilities: Prescribing the Policies and Programs to Promote and Enhance the Development of Waste-to-Energy (WtE) Facilities	● Engr. Galamgam noted that DOE is still in the process of drafting the revision to the DC guided by the comments received during the public consultations.	● Mr. Kamishita inquired how different the revision will be compared to the first iteration released prior. ○ Engr. Galamgam noted that changes that are to be	

(DOE)	○ DOE is still accepting feedback to the draft for OPI members who would like to extend comments, until before the CSW to the draft DC is processed.	incorporated constitute the resolving of several issues from the first draft, particularly the resistance from stakeholders like environmental and civic groups ● Mr. Kamishita raised that during the public consultation, several queries concerned the definition of feedstock that may be accepted in the facility, where certain participants claim that organic waste should be the only acceptable feedstock for the WTE facility for it to be classified as a renewable energy source. ○ Engr. Galangam noted that DOE responded to the queries by clarifying that facilities accepted only organic waste will be classified as biomass facilities, where existing regulations are already in place, while residual waste will be fed into the WTE facility ○ Ms. Pascual further noted that DOE is still communicating with the inquiring agencies to clarify the concerns relating to the matter.
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	● Engr. Esguerra asked if inquiring agencies used empirical proof in lobbying their claims ○ Ms. Pascual responded that the agencies claim that their position is based on scientific journals, but were not able to present these references to DOE when asked. ○ Engr. Galamgam noted that DOE will share these references, if provided by the inquiring agencies, for review of DOST. ● Ms. Consolacion Crisostomo noted that the TCP can get useful insights from the consultation sessions of DOE to mitigate possible issues that may arise in the TCP activities later on. ● Mr. Satoshi Higashinakagawa requested for the list of questions raised during the public consultations. ○ DOE agreed to share the matrix of issues raised during the PubCon to the subgroup by November 5. ○ Subgroup to meet on Nov 12 to discuss the PubCon issues and the revision of the DC.	[OP1 SG Members] To send comments to DOE on the draft DC prior to the processing of the CSW [DOE] To share references shared by inquiring agencies with DOST to help with reviewing the validity of claims. [DOE] To share with the subgroup the DC revision once finalized. [DOE] To provide a matrix of comments from the Public Consultation to OP1 subgroup on or before Nov 5. [OP1 Subgroup members] To meet on Nov 12 (tentative) to discuss the PubCon Comments for the finalization of the DC on WtE.
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6.) Technical presentation on Activity 1-1: Case Study on BAT/BEP Guidelines (Mr. Takahiro Kamishita, JET)	● Mr. Kamishita presented the timeline of activities that were undertaken in the development of the Case Study on BAT/BEP Guidelines. ● At the moment, NEDA and QC are the last agencies that have extended comments that have not yet confirmed the BAT/BEP Guidelines. ● Mr. Kamishita discussed JET’s response to the comments of QC LGU and NEDA on how their feedback will be addressed ● JET response to NEDA Comments ○ Siting of WTE Facilities will be addressed through Activity 1-6 ○ Clustering of LGUs may be addressed through the MC already being drafted with EMB on this matter, and will not need to be incorporated in the Guidelines ○ LCV of target waste for the collected cases have low LCV since these are only based on operational facilities ○ Sample Treatment Flow for the Treatment of wastewater and fly ash may be shared and is also addressed through Activity 1-6 ● JET response to QC LGU Comments ○ JET notes that the conditions were made to be flexible to the LGUs decision for as long as they meet the minimum standards, given the	● Ms. Pausing noted that the subgroup cannot endorse the BATBEP Guidelines without the concurrence of QC and NEDA on the responses of JET and PMO to their feedback. ○ Ms. Patricia Orante noted that they are tentatively scheduling the meeting with JET and PMO to Nov 10/11 to discuss the confirmation of QC LGU to the comments, alignment for OP2 expectations, and signing of the MOU ○ JET and PMO to contact NEDA for their confirmation to the comments	[QC LGU] To confirm the BATBEP Guidelines prior to JCC Meeting [QC LGU, JET, PMO] To meet on Nov 10/11 (for confirmation of QC LGU) [NEDA] To confirm the BATBEP Guidelines prior to JCC Meeting
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	differences in the contexts that may be considered. ○ Scope of BATBEP Guidelines were already approved by the subgroup in prior meetings ○ For the WTE project implementation, the specific support needed by QC may be directly consulted with JET through Output 2 activities		
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5.) Wrap-up, Required Actions, and Agreements (Ms. Andrei Mallare, JET)	Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. [OP1 SG Members] Review and provide comments to the Japanese Guidelines guided by the approved timeline [DENR] To provide the local regulations corresponding to the items in the Japanese “Guideline for Planning and Designing of Waste Treatment Facilities” [DOE] To share the schedule of hearings for HB7829 once set. [OP1 SG Members] To send comments to DOE on the draft DC prior to the processing of the CSW [DOE] To share references shared by inquiring agencies with DOST to help with reviewing the validity of claims. [DOE] To share with the subgroup the DC revision once finalized. [DOE] To provide a matrix of comments from the Public Consultation to OP1 subgroup on or before Nov 5. [OP1 Subgroup members] To meet on Nov 12 to discuss the PubCon Comments for the finalization of the DC on WtE. [QC LGU] To confirm the BATBEP Guidelines prior to JCC Meeting [QC LGU, JET, PMO] To meet on Nov 10/11 [NEDA] To confirm the BATBEP Guidelines prior to JCC Meeting		
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7.) Other Matters	● Mr. Kamishita shared with the subgroup the schedule and program of the online training being organized with JET and encouraged the subgroup members to participate in the said program. ● The main subgroup target per day is indicated in the program, but project members may attend all lectures.		[JET] To send the invitation to the online training to the TCP.
7.) Way forward, Schedule of the next meetings (Ms. Roxanne Barcenas, PMO)	● Ms. Barcenas presented the following meeting schedules remaining for Q4 of 2021: ○ JCC: November ○ OP1 Meeting: Nov 12 (PubCon discussion) ○ OP4 Meeting: November ○ Web training: November 15-18, November 26, 29, December 1 ○ PMO and JET Coordination Meeting: December 1		

添付資料 11-2: 成果1サブグループ会議

11-2-10: 10th SG1

“Interview survey for TSD facilities” (for Activity 1-5 and 1-8)

12th January 2022

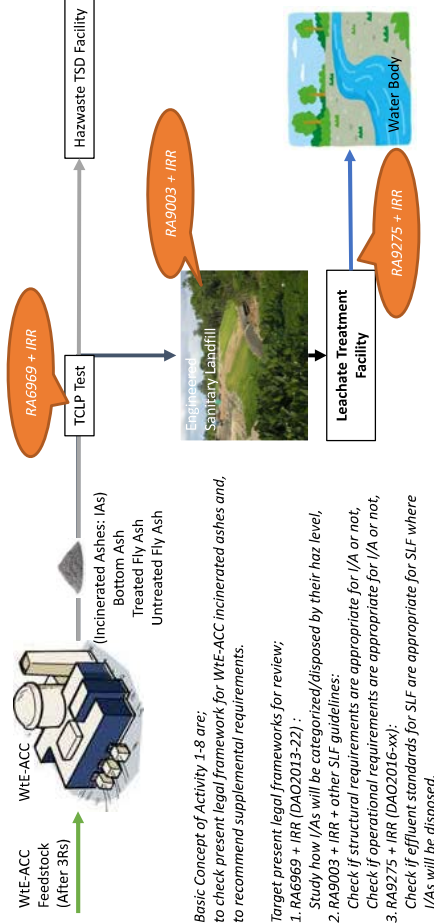
The Technical Cooperation Project (TCP) for Capacity Development on
Improving Solid Waste Management (SWM) through
Advanced/Innovative Technologies

1

Contents

1. Purpose of Interview Survey
2. Interviewees and Questions
3. Meeting schedule with Regional Offices and TSD facilities

Basic Framework of Activity 1-8



Interviewees and Questions

- 1. EMB Regional offices, regulating Category A and C of TSD facilities
 - Category A: Facilities that conduct onsite treatment and disposal of hazardous wastes generated with in the facility
 - Category C: Landfills that only accept hazardous wastes for final disposal
- 1. Section of RO in charge of regulating TSD facilities
- 2. Reporting requirements on TSD facilities
- 3. Regulation/guideline of TCLP test of ash wastes
- 4. Parameters in environmental monitoring

2. TSD facility operators

- 1. Profile of facility
- 2. Operation situation
- 3. Facility requirement
- 4. Monitoring report

Meeting Schedule (being arranged)

- 1. Regional Office
 - 1. Region 3: Jan 19
 - 2. Region 4a: Jan 14
 - 3. Region 8: Jan 10
 - 4. Region 10: Jan 18
 - 5. Region CAR: To be confirmed
- 2. TSD facilities
 - 1. Metro Clark Waste Management Corporation: Jan 13
 - 2. Cleanway Environmental Management Solutions: Waiting for EMB Endorsement Letter
 - 3. Clean Away Philippines: Declined/Referred
 - 4. Jorm Environmental Services: No response

Thank you for your attention.

NIPPON KOEI
EJEC 7

Table 5.1 Categories of TSD Facilities

Category	Description
A	Facilities that conduct onsite treatment and disposal of hazardous wastes generated within the facility that employs or utilizes technologies from Categories B to E.
B	Facilities that commercially treat industrial hazardous wastes using thermal technologies either burn or non-burn - B.1 Burn technologies such as plasma arc, pyrolysis, gasification, rotary or fluidized bed incinerator, cement kiln, etc. - B.2 Non-burn technologies such as autoclave, microwave, sterilization, hydroclave, irradiation, etc.
C	Landfills that only accept hazardous wastes for final disposal - C.1 Facilities that accept only inert or treated hazardous wastes for final disposal in a dedicated cell - C.2 Facilities that accept hazardous wastes for final disposal such as solidified, encapsulated wastes, etc. under Class K of this procedural manual

LIST OF REGISTERED TREATMENT, STORAGE AND DISPOSAL (TSD) FACILITIES

As of March 31, 2021

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Cordillera Administrative Region	BENGUET	September 07, 2021	OL-TR-CAR-11-000112	LEPANTO CONSOLIDATED MINING COMPANY	Lepanto, Paco, MANKAYAN, BENGUET	Joann A. Gatchalian
	NCR, SECOND DISTRICT	October 09, 2021	OL-TR-NCR-74-000042	ECOSAFE HAZMAT TREATMENT, INC.	Lot 7, West Los Angeles St., California Village, San Bartolome, QUEZON CITY, NCR, SECOND DISTRICT	Noehl Alinsangan
National Capital Region	NCR, SECOND DISTRICT	August 28, 2021	OL-TR-NCR-74-000124	SEANOgy ENVIRONMENTAL SOLUTIONS, INC. - TANDANG SORA INTERIM STORAGE FACILITY FOR PCB-CONTAINING EQUIPMENT AND WASTE	Tandang Sora Avenue Corner Cenacle Drive, Culiat, QUEZON CITY, NCR, SECOND DISTRICT	Angelito Perez Jr.
National Capital Region	NCR, SECOND DISTRICT	October 23, 2021	OL-TR-NCR-74-000170	INTEGRATED WASTE MANAGEMENT, INC. (LCP PLANT)	Lung Center Of The Philippines Compound, Quezon Avenue, Pinyahan, QUEZON CITY, NCR, SECOND DISTRICT	BERNARDO S. POLICARPIO
National Capital Region	NCR, SECOND DISTRICT	January 19, 2022	OL-TR-NCR-74-000251	KING KONG COMPUTER CORPORATION	608 CALDERON STREET, Addition Hills, MANDALUYONG CITY, NCR, SECOND DISTRICT	Amelita S. Alulod
National Capital Region	NCR, SECOND DISTRICT	February 23, 2022	OL-TR-NCR-74-000324	NANO-TECH CHEMICALS CORPORATION	23 Fema road, Bahay Toro, QUEZON CITY, NCR, SECOND DISTRICT	Archie Y. Yao
National Capital Region	NCR, SECOND DISTRICT	February 09, 2022	OL-TR-NCR-74-000375	TIMES PAINT CORPORATION	24 QUIRINO HIGHWAY, Unang Sigaw, QUEZON CITY, NCR, SECOND DISTRICT	RYAN CHRISTIAN C. YU
National Capital Region	NCR, THIRD DISTRICT	October 18, 2021	OL-TR-NCR-75-000060	JM ECOTECH SOLUTIONS CO.	168 Gen. Luis St., Kaybiga, Barangay 166, CALOOCAN CITY, NCR, THIRD DISTRICT	Jenny S. Chua

HW Code	Category
A101, B201, B202, B203	Category A
A101	Category E
D407	Category D
F601, F602, F603, F604, F699	Category E
G703, G704	Category D
H802	Category D
I101, I102, I103	Category D
I104	Category D
J201	Category D
M501	Category E
M503	Category E
M506	Category D
M507	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E
D401, D402, D403, D404, D405, D406, D407, D408, D499	Category E
L404	Category F
M501	Category B
M506	Category D, Category F
F601, F602, F603, F604, F699, G703, G704	Category D
M502	Category D
D407, F601, F602, F603, F604, F699, G703, G704, I101, I104, J201	Category D

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
					DISTRICT	
National Capital Region	NCR, THIRD DISTRICT	October 01, 2021	OL-TR-NCR-75-000061	ADCAN PETROLEUM PRODUCTS, INC.	144 F. Dulalia Street, Lingunan, VALENZUELA CITY, NCR, THIRD DISTRICT	Eden R. Gasolasco
National Capital Region	NCR, THIRD DISTRICT	September 14, 2021	OL-TR-NCR-75-000121	PETROMINE (M) SDN. BHD. BRANCH OFFICE	VICTORIA WAVE SPECIAL ECONOMIC ZONE,MALARIA,TALA, Barangay 186, CALOOCAN CITY, NCR, THIRD DISTRICT	MARIA JENNY M SALAMERA
National Capital Region	NCR, THIRD DISTRICT	January 22, 2022	OL-TR-NCR-75-000144	KATIPUNAN METALS CORPORATION	VICTORIA WAVE LTD. SPECIAL ECONOMIC ZONE, Barangay 186, CALOOCAN CITY, NCR, THIRD DISTRICT	JEROME DELOS SANTOS
National Capital Region	NCR, THIRD DISTRICT	September 07, 2021	OL-TR-NCR-75-000166	GREEN PLANET MANAGEMENT, INC	Lot 9, Block 4, Joy Street, Pearl Island Industrial Compound, Punturin, VALENZUELA CITY, NCR, THIRD DISTRICT	Arnel H. Luz
National Capital Region	NCR, THIRD DISTRICT	May 25, 2021	OL-TR-NCR-75-000185	GOLDSON GREEN SOLUTIONS, INC.	888, Lingunan, VALENZUELA CITY, NCR, THIRD DISTRICT	LOUIE CZAR F. ARTILLERO
National Capital Region	NCR, THIRD DISTRICT	March 26, 2022	OL-TR-NCR-75-000207	TRAME OIL & ENVIRONMMETAL SPECIALIST INC	L2 B2 PEARL ISLAND INDUSTRIAL COMPOUND, Punturin, VALENZUELA CITY, NCR, THIRD DISTRICT	RICHARD DAMONDON

HW Code	Category
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, K301, K302, K303, M503	Category E
I101	Category D
G704	Category D
D401, D403, D404, D405, D408, D499	Category D
M506	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D408, D499	Category E
I104	Category D
I101, I102, I103, I104	Category D
G703, G704	Category D
H802	Category D
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D406, D408, D499, F601, F602, F603, F604, F699, K301, K302, K303, M503, M507	Category E
J201	Category E
D407	Category E
D499	Category F
D407	Category D
F601, F602, F603, F604, F699	Category D
G703, G704	Category D
H802	Category D
I101, I102, I103	Category D
M506	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E
I104	Category E
J201	Category E
K301, K302, K303	Category E
D401, D402, D403, D404, D405, D408, D499	Category E

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
National Capital Region	NCR, THIRD DISTRICT	November 10, 2021	OL-TR-NCR-75-000321	BARANGAY 176 TREATMENT, STORAGE, AND DISPOSAL FACILITY	PHASE 2 PACKAGE 3, Barangay 176, CALOOCAN CITY, NCR, THIRD DISTRICT	DANTE A. LISTA
National Capital Region	NCR, THIRD DISTRICT	January 07, 2022	OL-TR-NCR-75-000341	EK2 MARKETING	1151 Oliveros Compound,, F. Bautista Street, Ugong, VALENZUELA CITY, NCR, THIRD DISTRICT	Eddie C. Ong
National Capital Region	NCR, THIRD DISTRICT	February 08, 2022	OL-TR-NCR-75-000376	COPINTERNATIONAL INC.	4372-C E.F Cuadra St., Ugong, VALENZUELA CITY, NCR, THIRD DISTRICT	Noel N. Tolentino
National Capital Region	NCR, FOURTH DISTRICT	January 13, 2022	OL-TR-NCR-76-000203	A. SEVIDAL TRADING	Block 1 Lot 2, Lot 10-12 Saint Urcising St., Saint Joseph Subdivision, Pulang Lupa Dos, LAS PIÑAS CITY, NCR, FOURTH DISTRICT	Elvira A. Sevidal
National Capital Region	NCR, FOURTH DISTRICT	September 14, 2021	OL-TR-NCR-76-000236	SOLCHEM PHILS., INC.	INTERIOR, KM. 18, IMPEX COMPOUND, Pamplona Tres, LAS PIÑAS CITY, NCR, FOURTH DISTRICT	MERRY JOY J. ARZAGAMARY CYNDELLA. JIZ DE ORTEGA
National Capital Region	NCR, FOURTH DISTRICT	February 09, 2022	OL-TR-NCR-76-000244	UDENNA ENVIRONMENTAL SERVICES, INC.	#4 STA. MARIA DRIVE, Bagumbayan, TAGUIG CITY, NCR, FOURTH DISTRICT	ADRIAN S. BOREBOR

HW Code	Category
M503	Category E
D406	Category E
M506, M507	Category D, Category F
I101	Category D
I102	Category D, Category F
M506	Category D
I101	Category F
F601, G703, G704	Category D
I101, I102	Category D
J201	Category E
H802, I101, I102, I103, I104	Category D
A101	Category E
D406	Category E
J201	Category E
K301, K302, K303	Category E
L401, L402	Category E
M501	Category B
M502	Category E
M503	Category E
M504	Category E
M506	Category E
M507	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E
D401, D403, D404, D405, D408, D499	Category E
E501, E502, E503, E599	Category E
F601, F602, F603, F604, F699	Category E
G703, G704	Category E

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
National Capital Region	NCR, FOURTH DISTRICT	November 17, 2021	OL-TR-NCR-76-000339	INTERCONTINENTAL WASTE DISPOSAL SYSTEMS, INC.	BLDG. D, ESTA COMPOUND, 37 ARTURO DRIVE, STA. MARIA INDUSTRIAL ESTATE, Bagumbayan, TAGUIG CITY, NCR, FOURTH DISTRICT	ROMULO ALCANTARA TIMBREZA V
Region 1	LA UNION	April 28, 2021	OL-TR-R1-33-000320	LA UNION MEDICAL CENTER, BRGY. NAZARENO, AGOO, LA UNION	n/a, Nazareno, AGOO, LA UNION	Rodney P. Abibuag
Region 1	PANGASINAN	March 09, 2022	OL-TR-R1-55-000028	SERVO TREAT PHILIPPINES, INC.	Zone 6, Pimmaludpod, CITY OF URDANETA, PANGASINAN	Ms. Eva M. Sagkal
Region 3	BATAAN	August 30, 2021	OL-TR-R3-08-000010	ADL ENVIROTECHNOLOGY INC.	Siteo Binasak, Mabiga, HERMOSA, BATAAN	Krystal Gayle C. Peralta

HW Code	Category
D407	Category E
F601, F602, F603, F604, F699, H802, M503	Category B
D406, D407, D499, F699, H802, I101, I104, J201, M501, M503, M506	Category F
M501	Category B
D407	Category D
D401, D403, D404, D405, D406, D407, D408, D499	Category E
G703, G704	Category D
H802	Category E
I101, I102	Category D
M503	Category E
M506	Category D
A101	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
J201	Category E
I104	Category E
F601, F602, F603, F604, F699	Category D
K301, K302, K303	Category E
H802, I101, I102, I103	Category D
G703, G704	Category D
D407	Category D
F601, F602, F603, F699	Category D
D401, D403, D404, D405, D408, D499	Category E
M506, M507	Category D
I104	Category D
J201	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
A101	Category E

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 3	BATAAN	September 24, 2021	OL-TR-R3-08-000013	BAO RUN METAL INC.	alcazar compound roman highway, Dona, ORANI, BATAAN	RECHELLE LIWANAG
Region 3	BATAAN	March 18, 2022	OL-TR-R3-08-000099	SHINTEN PHILIPPINES CO., INC.	G/F SFB No. 1 Luzon Avenue, Freeport Area of Bataan, Malaya, MARIVELES,	Joanna Marie Moselina Balaing
Region 3	BATAAN	May 26, 2021	OL-TR-R3-08-000143	NON COM POPS DESTRUCTION FACILITY	PNOC INDUSTRIAL PARK, Batangas II, MARIVELES, BATAAN	Richmond T. Gerapusco
Region 3	BATAAN	March 31, 2022	OL-TR-R3-08-000524	QUALITEK-DELTA PHILIPPINES, INC.	1st Ave., Phase 1, Poblacion, MARIVELES, BATAAN	Barlow R. Campano
Region 3	BULACAN	August 03, 2021	OL-TR-R3-14-000009	GULF OIL PETROLEUM PRODUCTS	#25 Sitio Balanga, Siling Bata, PANDI, BULACAN	Benjie D. Razalan
Region 3	BULACAN	April 28, 2021	OL-TR-R3-14-000015	POSITIVE A ENVIROTECH SPECIALIST INC.	651 Tibagan road, Santa Rosa II, MARILAO, BULACAN	Bejay B. Rimando
Region 3	BULACAN	October 21, 2021	OL-TR-R3-14-000020	RECYTECHPHIL INC.	138 Provincial Road, Tambobong, BOCAUE, BULACAN	BEVERLY T. SALAHAY
Region 3	BULACAN	November 08, 2021	OL-TR-R3-14-000031	GENETRON INTERNATIONAL MARKETING	425 TUBAW STREET, Sulucan, ANGAT, BULACAN	RIO R. ADRIANO
Region 3	BULACAN	August 24, 2021	OL-TR-R3-14-000037	ECOLOGY SPECIALIST, INC. (ESI)	KM. 58 CAGAYAN VALLEY ROAD, San Roque, SAN RAFAEL, BULACAN	ELENA T. CABANTOG
Region 3	BULACAN	May 26, 2021	OL-TR-R3-14-000047	TOTAL ORGANIC ENVIRONMENTAL SOLUTIONS INC.	ESGUERRA, Longos, PULILAN, BULACAN	MELBA MANGABAT

HW Code	Category
D406, M506	Category D
M506	Category D, Category F
I101	Category E
L404	Category E
D406, D499	Category D
I101, I102, I103, I104, J201	Category D, Category E
H802, I101, I102, I103	Category D
M506	Category F
I101, I102	Category D
A101	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
D407	Category D,
D401, D403, D404, D405, D499	Category E
C301, C302, C303, C304, C305, C399	Category E
F601, F602, F603, F604, F699	Category E
M503	Category E
E501, E502	Category E
G703, G704, I104, J201	Category D,
D405, D499, F601, F602, F603, F604, F699, H802, I104, L402	Category A, Category B
G704	Category D
I101, I102, I103	Category D
C301, C302, C303, C304, C305, C399, D499	Category E
J201	Category E
I104	Category A
J201	Category A
D407	Category A
I104	Category B
I102	Category D
I103	Category D
D406	Category F
I101	Category D
D407	Category D

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
			000047	SOLUTIONS, INC.	BULACAN	
Region 3	BULACAN	July 30, 2021	OL-TR-R3-14-000054	ALL WASTE SERVICES, INC.	Km 32 McArthur Highway, Tuktukan, GUIGUINTO, BULACAN	Rowena A. Ayson
Region 3	BULACAN	July 22, 2021	OL-TR-R3-14-000069	RMS PETROLEUM TECHNOLOGY AND WASTE MANAGEMENT CORPORATION (MAIN)	0822 M. VILLARICA ROAD, Santa Rosa I, MARILAO, BULACAN	JOANNE MARIE MOCA-ARRIBAS
Region 3	BULACAN	September 24, 2021	OL-TR-R3-14-000071	HOLCIM PHILIPPINES INC.	Brgy Matictic, Matictic, NORZAGARAY, BULACAN	Violie Esteban
Region 3	BULACAN	September 24, 2021	OL-TR-R3-14-000072	COLUMBIAN PETROLEUM PRODUCTS TRADING	blk 2 Lot 17, #475 J.P. Rizal St., Mahabang Parang, SANTA MARIA, BULACAN	Jhon Joseph Baccay
Region 3	BULACAN	August 03, 2021	OL-TR-R3-14-000080	GLOBALTEC WASTE MANAGEMENT, INC.	c/o GLOBALTEC, #9 Westmont Industrial Subdivision, Loma de Gato, MARILAO, BULACAN	MA. ROSARIO S. DE GUZMAN
Region 3	BULACAN	June 26, 2022	OL-TR-R3-14-000083	GLOBECARE SERVICES, INC.	Lot 2 Block 2 Grand Industrial Estate, Patulan, PLARIDEL, BULACAN	Joanne Bartolome

HW Code	Category
M501	Category B
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
F601, F602, F603, F604, F699, K301, K302, K303, L402, M503	Category E
I104, J201	Category E
G703, G704	Category D
I101, I102	Category D
M504	Category D
H802	Category D
A101, D401, D402, D403, D404, D405, D406, D407, D408, D499	Category E
I101, I102	Category D
C399, D499, F601, F602, F603, F604, F699, G704, H802, I101, I102, I103, I104, J201, K301, M503, M504, M505	Category B, Category D
D499, F601, F602, F603, F604, F699, G704, H802, I101, I102, I103, I104, J201	Category A
I101	Category D
I104	Category D
D407	Category D
M506, M507	Category D
G703, G704, I101, I102, I103	Category D
G703, G704, I104, J201	Category E
D401, D402, D403, D404, D405, D406, D407, D408, D499	Category F
D406	Category F
A101	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
D401, D402, D403, D404, D405, D406, D407, D408, D499, E501, E502, E503, E599, F601, F602, F603, F604, F699, K301, K302, K303, L401, L402	Category E
H802	Category D
M503	Category E
L404	Category E

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 3	BULACAN	May 07, 2021	OL-TR-R3-14-000089	REPUBLIC CEMENT & BUILDING MATERIALS, INC.	Ipo Road, Bigte, NORZAGARAY, BULACAN	Ralph Joseph Garcia
Region 3	BULACAN	December 22, 2021	OL-TR-R3-14-000117	ENVIROCORE MGT. PRECISION, INC.	Brgy. Sta. Cruz, Guiguinto Bulacan, Santa Cruz, GUIGUINTO, BULACAN	RENO M. ENTICO
Region 3	BULACAN	October 19, 2021	OL-TR-R3-14-000152	FAR EAST FUEL CORPORATION	888 PUROK 5 IRABAGON STREET, Anyatam, SAN ILDEFONSO, BULACAN	MERLIN R. DELA PAZ
Region 3	BULACAN	December 18, 2021	OL-TR-R3-14-000172	GREENERGIE CORPORATION	ESGUERRA ST., Longos, PULILAN, BULACAN	GREG V. BATINGANA
Region 3	BULACAN	February 06, 2022	OL-TR-R3-14-000176	EVERGREEN ENVIRONMENTAL RESOURCES INC.	Sta. Maria Industrial Park, Balasing, SANTA MARIA, BULACAN	Leo B. Manauis, Jr.
Region 3	BULACAN	September 07, 2021	OL-TR-R3-14-000239	YODA METAL AND CRAFT'S TRADING AND SERVICES CORPORATION	#45, Diliman I, SAN RAFAEL, BULACAN	May Ann Estavillo
Region 3	BULACAN	November 13, 2021	OL-TR-R3-14-000306	REPUBLIC CEMENT AND BUILDING MATERIALS INC.	Republic Cement Compound, Minuyan, NORZAGARAY, BULACAN	Joel R. Rayo
Region 3	BULACAN	February 08, 2022	OL-TR-R3-14-000392	ASIAUNITED OIL INDUSTRY CORPORATION	Muralia Street, Iba, CITY OF MEYCAUAYAN, BULACAN	Jeraph A. Notarte/Lily Co
Region 3	BULACAN	March 01, 2022	OL-TR-R3-14-000501	YODA METAL AND CRAFT'S TRADING AND SERVICES CORPORATION - SAN MIGUEL	N/A, Malibay, SAN MIGUEL, BULACAN	Joshua Daniel M. Benedicto
Region 3	NUEVA ECUIA	October 27, 2021	OL-TR-R3-49-000036	GLOCHEM MARKETING AND RECYCLING CORPORATION	PUROK 6, San Roque, SAN ISIDRO, NUEVA ECUIA	GEMARIE HAZEL QUETUA

HW Code	Category
D401, D402, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, G703, G704, I101, I102, I104, J201, K301, K302, L401, M503, M504	Category A, Category B, Category D
D407, M507	Category D,
M506	Category D,
F601, I101, I102, I103	Category B
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D499, F601, F602, F603, F604, F699, G703, G704, H802, I104, J201, K301, K302, L401, M501, M503, M504, M505, M506	Category B, Category D
J201	Category E
I101	Category D
D407	Category E
H802, I102, I103	Category D
D406	Category D
B201	Category A,
M506	Category D, Category F
H802, I101, I104, J201	Category A
F601, F602, F603, F604, F699, H802, I101, I104	Category B
I104	Category B
M503	Category B
I101, I102	Category D,
G703, G704	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E
D401, D403, D404, D405, D408, D499	Category E
F601, F602, F603, F604, F699	Category E
H802	Category E
J201	Category E
K301, K302, K303	Category E
M506	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 3	PAMPANGA	September 24, 2021	OL-TR-R3-54-000007	DOLOMATRIX PHILIPPINES INC.	Angeles Industrial Park Inc., Calibutbut, BACOLOR, PAMPANGA	John Michael Kristofferson Tolentino
Region 3	PAMPANGA	February 10, 2022	OL-TR-R3-54-000032	SAFEWASTE INCORPORATED	9801 A-C DOST TRC, Paralayunan, MABALACAT CITY, PAMPANGA	LESTER PAUL G. CASTRO
Region 3	PAMPANGA	July 27, 2021	OL-TR-R3-54-000142	SUNFLARE INDUSTRIAL SUPPLY CORPORATION	Power Point Industrial Park, San Pablo Libutad, SAN SIMON, PAMPANGA	Jennifer T. Rivera
Region 3	PAMPANGA	February 08, 2022	OL-TR-R3-54-000169	SEMIRECYCLING CO., INC.	Clarkfield Pampanga, Balibago, ANGELES CITY, PAMPANGA	LILIBETH B BACANI
Region 3	PAMPANGA	December 04, 2021	OL-TR-R3-54-000231	ENVIRONMENT SOLUTIONS EXPORT & IMPORT CORPORATION	BERTHAPHIL IV, WAREHOUSE 1E, CLARK CIVIL AVIATION, CFZ, Claro M. Recto, ANGELES CITY, PAMPANGA	ROBERT BRIAN B. CALALO
Region 3	PAMPANGA	March 25, 2022	OL-TR-R3-54-000276	SOLIMAN E.C. SEPTIC TANK DISPOSAL (POZO NEGRO)	National Highway, Eden, MEXICO, PAMPANGA	ROMER R. CUNANAN
Region 3	TARLAC	August 19, 2021	OL-TR-R3-69-000019	JMR TSD FACILITY	227, San Agustin (Murcia), CONCEPCION, TARLAC	Emmarie Luz S. Posadas
Region 3	TARLAC	July 27, 2021	OL-TR-R3-69-000038	METRO CLARK WASTE MANAGEMENT	Clark Special Economic Zone, Subzone D, Sitio Kalangitan, Cutcut 2nd, CAPAS, TARLAC	Nehemia Joy P. Manueduc

HW Code	Category
D401, D403, D404, D405, D408, D499	Category E
F601, F602, F603, F604, F699	Category E
J201	Category E
L401, L402	Category B
K301, K302, K303	Category E
M503	Category B,
G703, G704	Category D
H802	Category D
I101, I102, I103, I104	Category D
M501	Category B
M506	Category D
M507	Category B,
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D402, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, G703, G704, I104, J201, K301, K303, L401, L402, L404, M502, M503, M504, M506, M507	Category E
D402, D407, M506, M507	Category D
D406, G703, G704, I101, M507	Category F
M501	Category B
G703, I101, I102	Category D
I104	Category D
D406, D499, F601, F699	Category D
A101, D406, D499, F699	Category D
M506	Category D,
A101	Category F
M506, M507	Category F
H802, I101, I102, I103	Category D
A101	Category E
B201, B202, C301, C302, C303, C304, C305, J201	Category E
D404, D405, D406, D499	Category E
D406	Category B
M506	Category B
K301, K302, K303, M501, M502, M503	Category C

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 3	TARLAC	July 31, 2021	OL-TR-R3-69-000063	CLEANWAY ENVIRONMENTAL MANAGEMENT SOLUTIONS INCORPORATED	Sitio Kawiliwili, Cutcuit 2nd, CAPAS, TARLAC	Dean Carlo D. Castañeda
Region 3	TARLAC	December 01, 2021	OL-TR-R3-69-000094	CLEAN LEAF INTERNATIONAL CORPORATION	BRGY. ANUPUL, BAMBAN, TARLAC AND CUTCUT, CAPAS TARLAC, Anupul, BAMBAN, TARLAC	ARVIN BRIAN PUNO
Region 3	TARLAC	December 12, 2021	OL-TR-R3-69-000098	JOECHEM ENVIRONMENTAL CORPORATION	BGY. ARANGUREN CAPAS TARLAC, Aranguren, CAPAS, TARLAC	JOSE MARIE BENGOTCHEA

HW Code	Category
M501	Category B
H802, I101, I102, I103	Category D
A101	Category B
B201, B202, B203, B204, B205, B206, B207,	Category E
C301, C302, C303, C304, C305, C399	Category E
D401, D403, D404, D405, D406, D408, D499	Category E
D406	Category F
D407	Category E
E501, E502	Category E
F601	Category D
F602, F603	Category E
F604, F699	Category B
G703, G704	Category D
H802	Category B
I101, I102	Category D
I103, I104	Category B
J201	Category E
K301, K302, K303	Category E
M501, M503, M504, M507	Category B
M507	Category D,
M506	Category D
A101	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E
E501, E502, E503, E599	Category E
D401, D402, D403, D404, D405, D406, D407, D408, D499	Category E
M503	Category B
F601, F602, F603, F699	Category E
K301, K302, K303	Category E
J201	Category E
I104	Category B
I101, I102, I103	Category D
D407	Category D
G703, G704	Category D
H802	Category D
M506	Category D
F604	Category B

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 3	ZAMBALES	August 24, 2021	OL-TR-R3-71-000077	JACK ELECTRONIC METAL, INC.	LOT 18 COMMITMENT ST., COR. DUTY AVE., SUBIC BAY GATEWAY PARK, SUBIC BAY FREEPORT ZONE, Asinan, OLONGAPO CITY, ZAMBALES	JENNIFER T. CORONEL
Region 3	ZAMBALES	March 31, 2022	OL-TR-R3-71-000486	MISUNG SUBIC INC.	76 A AIM HIGH AVENUE SUBIC GATEWAY PARK , PHASE 1 SUBIC BAY FREEPORT ZONE, Asinan, OLONGAPO CITY, ZAMBALES	SHERYLL S. GARIANDO
Region 4A	BATANGAS	October 13, 2021	OL-TR-R4A-10-000012	REPUBLIC CEMENT & BUILDING MATERIALS, INC.	Boundary Gov. Antonio Carpio Road & Taysan - Lobo Road, Mapulo, TAYSAN, BATANGAS	Sharry Lynne Apud
Region 4A	BATANGAS	March 12, 2022	OL-TR-R4A-10-000426	HARVESTAR TECHNOLOGIES INC	Blk 1, Lot 5, Millennium Drive, LISP 3,, San Rafael, SANTO TOMAS, BATANGAS	Mark Lloyd P. Villegas
Region 4A	CAVITE	July 29, 2021	OL-TR-R4A-21-000027	INTEGRATED WASTE MANAGEMENT, INC.	BARANGAY AGUADO, Aguado (Piscal Mundo), TRECE MARTIRES CITY (Capital), CAVITE	RICO M. GATBUNTON
Region 4A	CAVITE	November 08, 2021	OL-TR-R4A-21-000033	O.M. MANUFACTURING PHILIPPINES, INC.	Phase 3 Blk 15-A Lot 1, Cavite Economic Zone, Tejeros Convention, ROSARIO, CAVITE	Gaflalyn B. Ariza
Region 4A	CAVITE	December 10, 2021	OL-TR-R4A-21-000048	CLEANWAY ENVIRONMENTAL MANAGEMENT SOLUTIONS INC.	Meridian Industrial Complex II, Maguyam, SILANG, CAVITE	Marisol A. Rosel

HW Code	Category
M506	Category D, Category F
M506	Category D, Category F
B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D402, D403, D404, D405, D408, D499, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, K301, K302, K303, M503, M504	Category A, Category D
M506	Category D
F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I104, J201, M501, M503	Category B
D407, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, M501, M503, M504, M505, M506	Category B, Category D
D406, D499	Category D
J201	Category E
M501	Category B
A101, B201, B202, B203, B204, B205, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D407, D408, D499, E501, E503, E599, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, K301, K302, K303, L401, L402, M501, M502, M503, M504, M506, M507	Category C
F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, M504, M505	Category D
D406, F601, F602, F603, F604, G703, G704, I101, I102, I103, I104, M506, M507	Category D
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D407, D408, D499, E501, E502, E503, E599, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, M504	Category E
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D407, D408, D499, F601, F602, F603, F604, H802, I101, I102, I103, I104, J201, M504	Category E
G703, G704, H802, I101	

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 4A	CAVITE	September 17, 2021	OL-TR-R4A-21-000057	SOUTHCHEM RECYCLING SOLUTION	BLOCK 7, LOT 3&4, PHASE II, GOLDEN GATE BUSINESS PARK I, Buenavista II, GENERAL TRIAS, CAVITE	LARIZA N. RETUSTO
Region 4A	CAVITE	August 10, 2021	OL-TR-R4A-21-000065	ENVIRONMENT SOLUTIONS AND RECYCLING TECH. PHILS. INC.	Blk. 11 Lot 13-16 & 18 Dasmariñas Technopark, Paliparan I, CITY OF DASMARIÑAS, CAVITE	ROMEL DG. POBLETE
Region 4A	CAVITE	September 30, 2021	OL-TR-R4A-21-000082	JORM TRADING CORPORATION	595 GENERAL TRIAS DR., TEJERO, Tejero, GENERAL TRIAS, CAVITE	MELEMIE F. VALLECER
Region 4A	CAVITE	March 11, 2022	OL-TR-R4A-21-000119	SOUTHCOAST METAL ENTERPRISE, INC.	Block 8A, Phase 1, East Avenue, Cavite Economic Zone, Tejeros Convention, ROSARIO, CAVITE	MARY ANN PEDROSO
Region 4A	CAVITE	November 17, 2021	OL-TR-R4A-21-000120	GREEN HORIZON ENVIRONMENTAL MANAGEMENT INC.	#223 Ilaya St., Nlog II, BACOR CITY, CAVITE	MA. ELENA B. PACULAN

HW Code	Category
D407	Category E
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D407, D408, D499, E501, E502, E503, E599, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, H802, I101, I102, I103, I104, J201, K301, K302, K303, L401, L402, M501, M503, M504, M505, M506, M507	Category F
D401, D403, D404, D405, D407, D408, D499, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, L401, L402, M501, M503, M506, M507	Category B
D407, D499, I104, M506	Category D
G703, G704, H802, I101, I102, I103	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D408, D499, F601, F602, F603, F604, F699	Category E
K301, K302, K303	Category E
J201	Category E
D499	Category F
B203, C301, F601, F602, F603, J201	Category E
I104, M506	Category D
D407	Category D
D406	Category F
M506	Category D
E501, E502, E503, E599	Category E
D401, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, G703, G704, M503, M507	Category E
I101, I102, I103	Category D
H802	Category E
J201	Category E
K301, K302, K303	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
I104	Category E
M506	Category D
D499, F699, I104, M506, M507	Category F
D407	Category D
G703, G704	Category D
I101	Category D

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 4A	CAVITE	September 22, 2021	OL-TR-R4A-21-000125	GREPSON MAINTENANCE AND GENERAL SERVICES	sitio palindong, Pasong Kawayan I, GENERAL TRIAS, CAVITE	REMEDIOS CUROD
Region 4A	CAVITE	January 16, 2022	OL-TR-R4A-21-000129	DAIKI OM ALUMINIUM INDUSTRY (PHILIPPINES), INC.	Lot 5, Block 21, Phase III, Cavite Economic Zone, Tejeros Convention, ROSARIO, CAVITE	Rocky O. Blasurca
Region 4A	CAVITE	August 25, 2021	OL-TR-R4A-21-000132	BLUE OCEAN GENERAL MERCHANDISE	Block 4 Lot 6 Golden Gate Business Park I, Buenavista II, GENERAL TRIAS, CAVITE	Baby Jean Castillo
Region 4A	CAVITE	March 11, 2022	OL-TR-R4A-21-000134	SOLVTECH CONSULTANCY RESOURCES	BLOCK 11 LOT 6A, MART ONE STREET, STERLING TECHNOPARK, Maguyam, SILANG, CAVITE	ALENELL A. VILLARAIZ
Region 4A	CAVITE	August 03, 2021	OL-TR-R4A-21-000139	INTEGRATED WASTE MANAGEMENT, INC. - INTEGRATED WASTE MANAGEMENT, INC. (TMC, AUTOCLAVE)	Brgy. Aguado, Aguado (Piscal Mundo), TRECE MARTIRES CITY (Capital), CAVITE	DANTE D. PAHILAGAO
Region 4A	CAVITE	May 11, 2021	OL-TR-R4A-21-000146	WASTE AND RESOURCE MANAGEMENT, INC.	Pineapple St., Sitio Pag-asa I, Aguado (Piscal Mundo), TRECE MARTIRES CITY (Capital), CAVITE	LEONARDO CARINO
Region 4A	CAVITE	March 25, 2022	OL-TR-R4A-21-000164	HONHUA ENVIRONMENTAL TECHNOLOGY PHILS., INC.	Block 11, Lot 4 Suntrust Ecotown Tanza, Remulla Drive, Sahud Ulan, TANZA, CAVITE	Demmy Rose S. Nugas

HW Code	Category
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D407, D499, F601, F602, F603, F604, F699, G703, G704	Category E
J201	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D407, D499, F601, F602, F603, F604, F699	Category E
K301, K302, K303	Category E
M503	Category E
I102, I103, I104	Category D
H802	Category E
M507	Category D,
I102	Category B
I104	Category D
I101	Category F
D407	Category D
G703, G704	Category D
I101, I102, I103, I104	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
D401, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, K301, K302, K303, M503, M506	Category E
J201	Category E
M506	Category F
M501	Category B
F604	Category E
M506	Category D

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 4A	CAVITE	October 02, 2021	OL-TR-R4A-21-000199	MATSUDA SANGYO (PHILIPPINES) CORPORATION	Lot 1 Blk 4 PTC-SEZ, Madyaya, CARMONA, CAVITE	Edna Arro
Region 4A	CAVITE	September 29, 2021	OL-TR-R4A-21-000232	JAIRAPEL TRADING	Sitio Aroma, Longos, Zapote V, BACCOOR CITY, CAVITE	Rosemarie D. Radana
Region 4A	CAVITE	November 17, 2021	OL-TR-R4A-21-000275	MEGA MANILA GNB MOTORS CORPORATION	Governor's Drive, Sabang, NAIC, CAVITE	Lousito Sanchez
Region 4A	CAVITE	January 13, 2022	OL-TR-R4A-21-000281	LS ONE CORPORATION	ARNALDO HIGHWAY, SITIO DE FUEGO, San Francisco, GENERAL TRIAS, CAVITE	MICHELLE ZANTUA
Region 4A	CAVITE	November 26, 2021	OL-TR-R4A-21-000368	JORM ENVIRONMENTAL SERVICES, INC.	Governor Ferrer Dr.,,.,, Tapia, GENERAL TRIAS, CAVITE	ALLEN M. JOYA

HW Code	Category
A101	Category F
C305	Category F
D401, D402, D403, D404, D405, D406, D408, D499	Category F
F601, F602, F603, F604, F699	Category F
G704	Category F
J201	Category F
K301, K302, K303	Category F
M506	Category F
M506	Category D, Category F
D406	Category D
I101	Category D
D499	Category D
I102	Category F
D401, D403, D404, D405, D406, D407, D408, D499, M507	Category C, Category E
F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, M506	Category C, Category D, Category E
J201	Category C, Category E
K301, K302, K303	Category C

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 4A	LAGUNA	July 17, 2021	OL-TR-R4A-34-000004	GREEN RESOURCE AND ENVIRONMENTAL MANAGEMENT SOLUTIONS INC.	WAREHOUSE 6, MMG 3 INDUSTRIAL COMPOUND, MAGSAYSAY ROAD, San Antonio, CITY OF SAN PEDRO, LAGUNA	JOSEPH A. BACUNAWA
Region 4A	LAGUNA	December 12, 2021	OL-TR-R4A-34-000011	MARITRANS RECYCLER, INC.	Unit 3, DM Ragasa Warehouse, 763 National Highway,, Parian, CITY OF CALAMBA, LAGUNA	Norelyn P. Genove
Region 4A	LAGUNA	December 01, 2021	OL-TR-R4A-34-000022	PYROTECH SOLUTION AND INTEGRATED SERVICES CORPORATION	PUROK 5, Sainsim, CITY OF CALAMBA, LAGUNA	RUFINO B. CARINGAL
Region 4A	LAGUNA	April 28, 2021	OL-TR-R4A-34-000023	FRILCO PHILIPPINES CORPORATION	Purok 6, Kanluran, Malilit, CITY OF SANTA ROSA, LAGUNA	AIZA ANGENETTE SANTOS

HW Code	Category
M502, M503	Category C,
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, M503, M506, M507	Category D,
G703, G704	Category D,
I101	Category D,
I104, J201	Category E,
M506, M507	Category F,
D406, D499	Category F,
M501	Category B,
D407	Category F,
B299, C399, F699	Category E,
M506	Category D,
M501	Category B,
D407	Category F,
B299, C399, F699	Category E,
M506	Category D,
I101, I102, I103	Category D,
I104	Category B,
G703	Category D,
G704	Category D,
I101	Category D,
I102	Category D,
I103	Category D,
I104	Category D,
F601	Category E,
F602	Category E,
F603	Category E,
F603, F604	Category E,
F699	Category E,
D499	Category E,
J201	Category E,
H802	Category E,
K301	Category E,

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 4A	LAGUNA	October 02, 2021	OL-TR-R4A-34-000040	INTEGRATED RECYCLING INDUSTRIES PHILIPPINES INC.	Lot C4-5B, Carmelray Industrial Park 2, Brgy Punta, Calamba City, Laguna, Philippines 4027, Punta, CITY OF CALAMBA, LAGUNA	Jonathan Torrejos
Region 4A	LAGUNA	August 24, 2021	OL-TR-R4A-34-000041	AUGUST-10 ENTERPRISE CO.	192, Santo Tomas (Calabuso), CITY OF BIÑAN, LAGUNA	MYLENE S. MONTILLA
Region 4A	LAGUNA	October 15, 2021	OL-TR-R4A-34-000058	ZERO WASTE ENVIRONMENTAL MANAGEMENT SOLUTIONS INCORPORATED	Warehouse Corporate Park, Brgy. Malilit, Malilit, CITY OF SANTA ROSA, LAGUNA	Geoffrey Dojello
Region 4A	LAGUNA	August 24, 2021	OL-TR-R4A-34-000073	HMR ENVIROCYCLE PHILIPPINES INC.	CA YULO AVENUE, SILANGAN INDUSTRIAL PARK,, Canlubang, CITY OF CALAMBA, LAGUNA	AIRA MAE M. VILLAVICENCIO
Region 4A	LAGUNA	October 18, 2021	OL-TR-R4A-34-000078	SEMICYTECH, INC.	UNIT C, WINSOUTH ONE NO. 140 EAST MAIN AVENUE LOOP, PHASE 6, LAGUNA TECHNO PARK-SEZ, Loma, CITY OF BIÑAN, LAGUNA	MARY ANN R. PALIZA
Region 4A	LAGUNA	January 07, 2022	OL-TR-R4A-34-000088	HAZCHEM INC.	0947 Purok V, Makiling, CITY OF BIÑAN, LAGUNA	Jose Carmelo P. Tinio

HW Code	Category
K302	Category E
K303	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299	Category E
C301, C302, C303, C304, C305, C399	Category E
D401, D402, D403, D405, D406, D407	Category D,
M503, M504, M506	Category D,
D406, D499, M506	Category D, Category F
H802, I101, I102, I103, I104, J201, M503	Category B
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category B
I101	Category D
G703, G704	Category D
D401, D402, D403, D404, D405, D407, D499, F601, F602, F603, F604	Category E
I104, J201	Category E
D407	Category D
M506, M507	Category D
F699, I101	Category E
D406	Category D
D499	Category D, Category F
D407	Category D
M506	Category D
D406	Category F
F601	Category F
F602	Category F
F699	Category F
G704	Category F
I101	Category F
I104	Category F
J201	Category F
D406, D499, F601, F602, F699, J201	Category F
M506	Category B
M501	Category B

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
			000154		CALAMBA, LAGUNA	
Region 4A	LAGUNA	November 17, 2021	OL-TR-R4A-34-000184	UNI NFM INDUSTRY INC.	Km 40 Metallum Compound, Macabling, CITY OF SANTA ROSA, LAGUNA	John Patrick A. Crisostomo
Region 4A	LAGUNA	August 27, 2021	OL-TR-R4A-34-000189	MARYCHECK TRADING	Mamatid road, Banlic, CABUYAO CITY, LAGUNA	NEREO A. BARRIENTOS
Region 4A	LAGUNA	December 29, 2021	OL-TR-R4A-34-000259	TMC METAL PHILIPPINES, INC.	LOT C2 3 UNIT1 CARMELRAY INDUSTRIAL PARK II, Punta, CITY OF ARAZO	JOYCE RACHEL ARAZO
Region 4A	RIZAL	October 17, 2021	OL-TR-R4A-58-000085	EGC ENTERPRISES	BLOCK 3, LOT 1 & 2, VICTONETA BAYTOWN STREET, Kalayaan, ANGONO, RIZAL	ROSELYNA. TABUNDA
Region 4B	PALAWAN	April 08, 2021	OL-TR-R4B-53-000149	POLLUTION ABATEMENT SYSTEMS SPECIALISTS INC.	Sanitary Landfill, Santa Lourdes, PUERTO PRINCESA CITY (Capital), PALAWAN	Lanel Jane F. Ubuza
Region 5	ALBAY	December 28, 2021	OL-TR-R5-05-000107	ZIGS ECO SANITATION CORPORATION	SITTIO BANASIAN, San Ramon, DARAGA (LOCSIN), ALBAY	ELDIE F. DELA RAMA
Region 6	ILOILO	June 26, 2021	OL-TR-R6-30-000052	SOLLESTA-NIELSEN CORPORATION	along National highway, Talanghauan, SANTA BARBARA, ILOILO	FRANCIS JOY SOLLESTA
Region 6	NEGROS OCCIDENTAL	December 21, 2021	OL-TR-R6-45-000116	POWDEROCK VENTURES PHILS.,INC.	Sitio Quarry, Rafaela Barrera, SAGAY CITY, NEGROS OCCIDENTAL	Michelle Delgado
Region 7	CEBU	October 18, 2021	OL-TR-R7-22-000008	RRDS ENVIRONMENTAL SERVICES, INC.	PUROK TAMBIS, UMAPAD, Umapad, MANDAUE CITY, CEBU	Marica P. Taneo
Region 7	CEBU	October 12, 2021	OL-TR-R7-22-000025	MARITRANS RECYCLER, INC.	Sitio Baas, Pagsabungan, MANDAUE CITY, CEBU	Ma. Elena M. Lavadia

HW Code	Category
F602, F603, F699, M503, M504, M507	Category B
F601, G703, G704, I101	Category D
H802, I102, I103	Category D
M506	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
D401, D403, D405, D499, F601, F602, F603, F604, F699, K301, K302, L401, L402, M503 I104, J201	Category E
D499	Category B
H802	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
I101, I102, I103	Category D
F601, F602, F603, F604, F699	Category E
I104, J201	Category E
M506	Category D
D406, D499, M506	Category F
I101	Category D
I102	Category D
M501	Category B
M501	Category B
I102	Category D
I104	Category E
I101	Category D
I101	Category D
G703, G704	Category D
D407	Category D
D406	Category D
F601, I104	Category F
D402, D403, D404, D405, D406, D499, M506, M507	Category D
D407	Category D
F601, F602, F603, F699, G703, G704	Category D
H802, I101, I102, I104	Category D

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 7	CEBU	March 10, 2022	OL-TR-R7-22-000127	PHIL-JAPAN METALS & REFINED PRODUCTS CO., INC	4th st., 3rd Ave., Block D5, MEZ 1, Ibo, LAPU-LAPU CITY (OPON), CEBU	Victor C. Hilot Jr.
Region 7	CEBU	March 18, 2022	OL-TR-R7-22-000156	Pollution Abatement Systems Specialists, Inc.	Emilio Jaca St., Inayawan, CEBU CITY (Capital), CEBU	Engr. Edlyn Nicole Talapiero
Region 7	CEBU	September 04, 2021	OL-TR-R7-22-000173	MEDCLEAN MANAGEMENT SOLUTIONS, INC.	M.L. Quezon St., Cabancalan, MANDAUE CITY, CEBU	Januarius Nacional
Region 7	CEBU	March 09, 2022	OL-TR-R7-22-000174	CEBU COMMON TREATMENT FACILITY, INC.	WHITE ROAD, Inayawan, CEBU CITY (Capital), CEBU	SHIELLA MAE DE LOS REYES
Region 7	CEBU	August 21, 2021	OL-TR-R7-22-000188	ARC MERCHANDISING	Sitio Pomelo, Jubay, LILOAN, CEBU	DONATO G. PRITOS, JR.
Region 7	CEBU	November 06, 2021	OL-TR-R7-22-000225	CEBU MEGALUBE USED OIL RECYCLE	BAHA-BAHA, Tayud, CONSOLACION, CEBU	Genivive L. Retuerto
Region 7	CEBU	November 28, 2021	OL-TR-R7-22-000363	JARON'S METAL CRAFT	PLARIDEL ST PAKNAAN MANDAUE CITY, Pakna-an, MANDAUE CITY, CEBU	JOEL M. JARON
Region 7	CEBU	March 08, 2022	OL-TR-R7-22-000448	STELLAR ECO SOLUTIONS CORPORATION	Sitio Casantia, Soong, Macian, LAPU-LAPU CITY (OPON), CEBU	Dr. Maria Fe P. Chio
Region 8	LEYTE	December 02, 2021	OL-TR-R8-37-000076	ALLIED CARE EXPERTS (ACE) MEDICAL CENTER-TACLOBAN CITY	Tabuan National Highway, Barangay 78 (Marasbaras), TACLOBAN CITY (Capital), LEYTE	Yvan Vic C. Advincula
Region 8	LEYTE	December 20, 2021	OL-TR-R8-37-000136	CLEANAWAY PHILIPPINES INC.	Leyte Industrial Development Estate (LIDE), Libertad, ISABEL, LEYTE	Cheryl B. Mahusay

HW Code	Category
J201	Category E
D407, M506	Category F
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, D401, D403, D404, D405, D408, D499, G704, M506	Category D
A101	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, D401, D403, D404, D405, D408, D499, G704	Category E
M501	Category B
M501	Category B
D407, F601, F602, F603, F604, F699, G703, G704, I101, M506, M507	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D402, D403, D404, D405, D406, D407, D408, D499, F601, F602, J201	Category E
D401, D402, D403, D404, D405, D406, D407, D408, D499, F601, F602, F603, F604, F699, I101, I104, M506, M507	Category F
A101, B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399, D401, D402, D403, D404, D405, D406, D407, D408, D499, F601, F602, J201	Category E
I101	Category D
G703, G704	Category D
D407	Category D
I104	Category F
H802, I102, I103, J201	Category F
I101	Category D
I102	Category D
I104	Category E
I101, I102	Category D
M501	Category B
M501	Category A
K301, K302, K303	Category C
F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, M504	Category D
D407, M507	Category D
I104, J201, M503, M506, M507	Category E

Region	Province	Expiry Date	Registration No.	Name of Facility	Company Address	PCO Name
Region 8	LEYTE	January 27, 2022	OL-TR-R8-37-000282	MT. APO SAROZAMA, INC.	NA, Bairan, SAN MIGUEL, LEYTE	NIEVA C. MENDOZA
Region 10	BUKIDNON	June 02, 2021	OL-TR-R10-13-000131	ERR ENTERPRISES	PUROK 4, Mambatangan, MANOLO FORTICH, BUKIDNON	Renald M. Tajor
Region 10	BUKIDNON	November 17, 2021	OL-TR-R10-13-000179	POWER POINT ENTERPRISES	Gabuk, Lingion, MANOLO FORTICH, BUKIDNON	Gelly Rose E. Cortes
Region 10	BUKIDNON	February 23, 2022	OL-TR-R10-13-000245	MATRIVINO GENERAL MERCHANDISE	p9, south poblacion, maramag, bukidno, South Poblacion, MARAMAG, BUKIDNON	Loricel M. Camilotes
Region 10	LANAO DEL NORTE	February 23, 2022	OL-TR-R10-35-000074	REPUBLIC CEMENT MINDANAO, INC. (AMENDED)	, Kiwalian, ILIGAN CITY, LANAo DEL NORTE	Reynaldo P. Casomo
Region 10	MISAMIS ORIENTAL	October 23, 2021	OL-TR-R10-43-000070	HOLCIM PHILIPPINES, INC. LUGAIT PLANT, HCC COMP. BRGY. POBLACION LUGAIT, MISAMIS ORIENTAL	HCC Compound, Poblacion, LUGAIT, MISAMIS ORIENTAL	Michelle Trazona
Region 11	DAVAO DEL NORTE	September 04, 2021	OL-TR-R11-23-000230	WAVE INDUSTRIAL SALES	Gales St., Purok 4, Maduao, CITY OF PANABO, DAVAO DEL NORTE	AGNES M. TOM
Region 11	DAVAO DEL NORTE	March 15, 2022	OL-TR-R11-23-000302	MACONDRAY PLASTICS PRODUCTS, INC.	Purok Uno,, Tagpore, CITY OF PANABO, DAVAO DEL NORTE	ALBERTO N. ARABILLA JR
Region 11	DAVAO DEL NORTE	March 01, 2022	OL-TR-R11-23-000371	CYCLE RICH SUMMIT INDUSTRIES, INC.	Lot 1278-A Barangay Kinamayayan Sto. Tomas Davao Del Norte, Kinamayayan, SANTO TOMAS, DAVAO DEL NORTE	Gilbert Go
Region 11	DAVAO DEL SUR	March 18, 2022	OL-TR-R11-24-000261	DAVAO THERMO BIOTECH CORPORATION	Sitio Lumboy, Salulillo Road, Binugao, DAVAO CITY, DAVAO DEL SUR	Rainiel E. Mendoza
Region 11	DAVAO DEL SUR	December 17, 2021	OL-TR-R11-24-000333	NORTHSEA PETROLEUM PRODUCT	Purok 4B, Upper Ilang, Bunawan District, Davao City, Ilang, DAVAO CITY, DAVAO DEL SUR	Robert J. Agapito
Region 12	SOUTH COTABATO	September 23, 2021	OL-TR-R12-63-000211	JONCYR ENTERPRISES, INC.	PUROK WAL, BARANGAY TAMBLER, Tambler, GENERAL SANTOS CITY (DADIANGAS), SOUTH COTABATO	EXEQUIEL A. LABRADOR JR.

HW Code	Category
A101, D401, D402, D403, D404, D405, D406, D407, D408, D499, E501, E502, E599, L401, L402	Category E
A101, D401, D402, D403, D404, D405, D406, D407, D408, D499, E501, E502, E599	Category E
D401, D402, D403, D404, D405, D406, D407, D408, D499, M502	Category E
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, C399	Category E
G703, G704, I101, I102	Category D
M501	Category F
I101	Category D
I102	Category D, Category F
I102	Category D
I102	Category D
B201, B202, B203, B204, B205, B206, B207, B208, B299, C301, C302, C303, C304, C305, D499, F601, F602, F603, F604, F699, G703, G704, H802, I101, I102, I103, I104, J201, M503, M504, M506	Category A, Category B, Category D
F601, F602, F604, F699, G703, G704, H802, I101, I102, I104, J201, M504	Category A, Category B, Category D
I101	Category D
M504	Category D
M504	Category D
H802, I102, I103	Category D
I101	Category F
I101	Category D
I101, I102, I104	Category D
J201	Category E



Contents of Today's Presentation

1. Background and Objective
2. Confirmation of Current Review Procedure
3. Preliminary Review of Evaluation Criteria
4. Further step

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

1

Background and Objectives

Background

- NSWMC has formulated the “Guidebook for Formulation of Solid Waste Management Plan” and “Annotated Outline (10-year SWM plan)” as reference document and checklist for preparation of 10-year SWM plans.
- These guidebook and checklist are formulated based on RA9003 which was enacted on the premise that Waste to Energy (WtE) technology shall not be applied. Therefore, evaluation criteria for 10-year SWM plan will be requested to be revised by including criteria concerning the WtE projects.

Objective

- To support the revision of “Annotated Outline”, which is review criteria of 10-SWM plan, because of the development of WtE project
- To assist the revision of document such as guidelines for reviewing 10-year SWM plans, if necessary

Confirmation of Current Review Procedure

Review Procedure (My understanding)

- LGU submit the 10 years SWM plan to EMB regional Office
- EMB regional office review the 10 years SWM plan based on “Annotated Outline”, prepare the comments for LGU
- LGU respond to the comments, revise the 10-year SWM plan and submit the revised 10 years SWM plan to EMB regional Office
- If EMB regional Office accept the revised 10-year SWM plan, it will be submitted to EMB for final review
- After final review by EMB, NSWMC will approve the 10-year SWM plan

Confirmation matter

(1) Relevant document for review

- Do you utilize “Guidebook for Formulation of Solid Waste Management Plan” as well as “Annotated Outline” for the review of 10 years SWM plan?
- Do you have some sample models of 10-year SWM plan for review?

(2) Issues

- Appropriateness of criteria and/or guideline, difficulties of communication with LGUs about the review, duration of the review, number of reviewer, etc

添付資料11

Review Result of Annotated Outline

- Better to describe “Waste Flow Diagram” clearly
- Detail explanation of 10-year SWM plan will be necessary, though only 5 years data is required in the parts of investment cost, annual cost and funding option
- Definition of “Diverted Waste” and “Diversion Rate” (should not include self-disposal, which is potential illegal dumping)

Necessary Parts to be added due to WtE

- Description of WtE facility in “SWM System”
- Waste Flow including receiving waste in WtE facility and residue from WtE facility
- Description of WtE components in Environmental and Social Consideration
- Others

- JET implemented initial work to update the evaluation criteria of 10-year SWM plan
- JET will have a meeting with a reviewer of 10 years SWM plan tomorrow
- JET will prepare the draft revised evaluation criteria of 10 years SWM plan
- Discussion of the draft revised evaluation criteria of 10 years SWM plan in 11th SG meeting of Output 1 in the end of February
- Revise the criteria based on the above discussion
- Finalize the evaluation criteria of 10 years SWM plan in 12th SG meeting of Output 1 in the end of April

Tentative schedule of
SG meeting for
Output 1

PROJECT OUTPUT	JAN	FEB	MAR	APR	MAY
SGOPI	12	22		23	

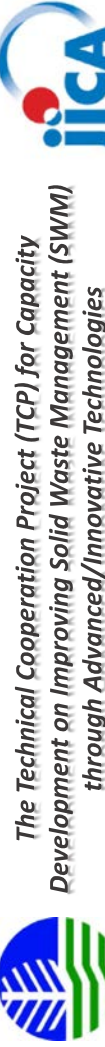
Maraming salamat po !

Activity 1-6

To prepare the Manual for Planning, Evaluation, Formulation, and Supervision of WTE project

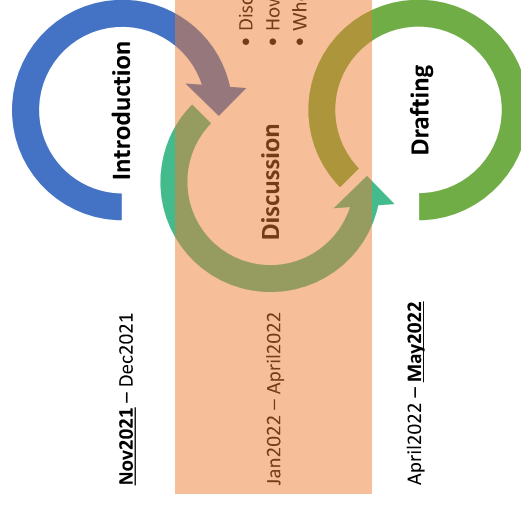
12th January 2022

Makoto KOSAKA, SWM-PPP Expert



Guideline for Planning and Designing of WTEs 2017

Title		Guideline for Planning and Designing of Waste Treatment Facilities (WTF) 2017	
Publisher	Japan Waste Management Association		
Price	JPY 27,000-		
Last Update	May 2017		
Size and Pages	A4 x 850 pages		
TOC	Volume I Planning Guidelines		
	Chapter 1 Formulation of waste treatment master plan		
	Chapter 2 Formulation of a regional plan for promoting the formation of a recycling-oriented society		
	Chapter 3 Formulation of WTF life prolong plan		
	Chapter 4 Formulation of various plans for the development of WTEs		
	Chapter 5 Legal Procedures for setting up a WTF		
	Chapter 6 Procedures for ordering WTF construction work		
	Chapter 7 Financial Resources for Construction of Waste Disposal Facility		
	Volume II Design Guideline		
	Chapter 1 Basic matters regarding waste incineration facilities		
	Chapter 2 Matters concerning the functions of waste incineration facilities (excluding gasification and melting facilities and gasification reforming facilities)		
	Chapter 3 Continuous operation type waste incineration facility		
	Chapter 4 Intermittent operation type waste incineration facility		
	Chapter 5 Gasification and Melting Facility / Gasification Reforming Facility		
	Chapter 6 Incineration Residue Melting Facility		
	Chapter 7 Non-combustible / Oversized / Container and Packaging Recycling Facility		
	Chapter 8 Waste Transport and Transfer Facility		
	Chapter 9 Refuse Derived Fuel Production Facility		
	Chapter 10 Waste Carbonization Facility		
	Chapter 11 Waste Methane Recovery Facility		



• Introduction to Japanese “Guideline for Planning and Designing of Waste Treatment Facilities (WTF) 2017”

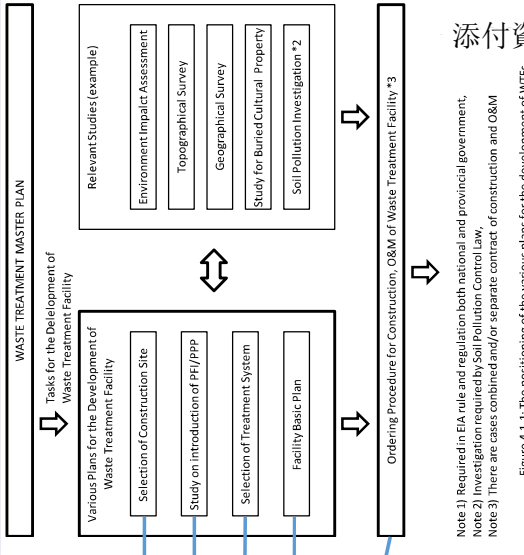
Today's Scope

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

• Drafting the Guidelines for Philippines

Chapter 4: Formulation of various plans for the development of WTEs

Sec	Table of Contents	Number of Pages
S1	Positioning the Various Plans regarding the Development of WTEs	5
S2	Selection of Candidate Construction Sites	9
S3	Survey for the Possibility of PFI/PPP Introduction	3
S4	Selection of Treatment Methods	2
S5	Development of Facility Basic Plan	44
S6	Core Items in Waste Treatment Facility Design	11
S7	Safety Measures	4
S8	Dismantling of Incineration Facility	4
	Total	79



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 combined and/or separate contract of construction and O&M

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

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S2. Selection of Candidate Construction Sites

S3. Survey for the possibility of PFI/PPP introduction

Sub-section	Contents
2.1 Background	Background of selection of candidate construction sites.
2.2 Laws for regulation of the potential construction site	Lists up environmental protection laws as well as laws on facility establishment, land use and construction which should be taken into consideration.
2.3 Candidate site selection procedure	Illustrates candidate site selection procedure.
2.4 Conditions and criteria related to candidate site selection	Shows examples of conditions and evaluation items related to candidate site selection.
2.5 Sample procedural flow for selection of candidate site	Illustrates procedural flow for selection of site.
2.6 Considerations in the selection of candidate sites	Describes the points for consideration in selection of sites.
2.7 Actions after the selection of candidate site	Describes the actions to be taken after selection of the site.

S4. Selection of Treatment Methods

1) Sort out applicable treatment technologies

2) Select methods for comparative evaluation

3) Set evaluation criteria

4) Collect data for evaluation

5) Evaluate treatment methods

Objectives of PFI/PPP Feasibility Study

- To juxtapose different business methods to see which can be selected for the local government to introduce private sectors to ensure efficient and economical operation, maintenance, and management of the waste treatment facility
- To compares and evaluates which business methods should be selected in consideration of regional circumstances, business stability, economic efficiency, and intention of the private operators

View points to evaluate business methods

- Whether participation of multiple private companies is expected (intention survey)
- Whether quantitative effects (economic effects) can be expected (quantitative evaluation)
- Whether qualitative effects can be expected (qualitative evaluation)
- Whether comprehensive effects are expected after introduction of such (comprehensive evaluation)

S5. Development of Facility Basic Plan

	Sub-section	Contents
5.1	Background	Describes background of developing facility basic plan.
5.2	Ordering conditions relating to facility development	Explains how to set out ordering conditions for facility development. 1) Planned waste amount 2) Capacity of the facility 3) Planned Waste Quality 4) Pollution prevention standards 5) Waste heat utilization
5.3	Planned waste quality	Describes the points to be considered when determining the planned waste quality. 1) Type of waste 2) Items for Waste Quality Analysis 3) Items of Waste Quality Analysis and their Purposes 4) General trend of waste quality 5) Example of Waste Quality Analysis 6) Setup the Quality of Target Waste in a Waste Incineration Facility 7) Setting of planned target waste quality in recycling centers (MRFs) for non-combustibles, bulky and packaging waste
5.4	Structure of Facility Basic Plan	Describes the details to be included in Facility Basic Plan.
5.5	Stable supply of electricity	Introduces the outline of power liberalization, FIT system and widening of power generation business.
5.6	Measures against disaster waste treatment	Discusses how to deal with disaster waste that should be taken into account in the development of waste treatment facilities.

Sub-section	Contents
6.1	Notifications to government offices Shows a reference example of application procedures to various government agencies by a local government that will be the project proponent.
6.2	General structure of waste treatment facility Describes general structure and design considerations of waste treatment facility.
6.3	Earthquake-resistant and disaster prevention structure of waste treatment facility Discusses the necessity of disaster countermeasures, earthquake-resistant design of major facilities, prevention of secondary disasters, and examples of disaster prevention measures.
6.4	Measures in snow-covered cold regions and areas affected by salt Illustrates measures in snow-covered cold regions and areas affected by salt.

S8. Dismantling of incineration facility

8.1 Dismantling of Incineration Facility

- Addressing dioxins and asbestos
- Dismantling cost issues

8.2 Dismantling Manual

- Regulations, guidelines and manuals
- Method of dismantling

8.3 Estimation of Dismantling Costs and Financial Resources

- Estimation of dismantling costs
- Subsidy system

S7. Safety Measures

7.1 Accidents at waste treatment facilities

- Occurrence of accidents
- Example of accidents

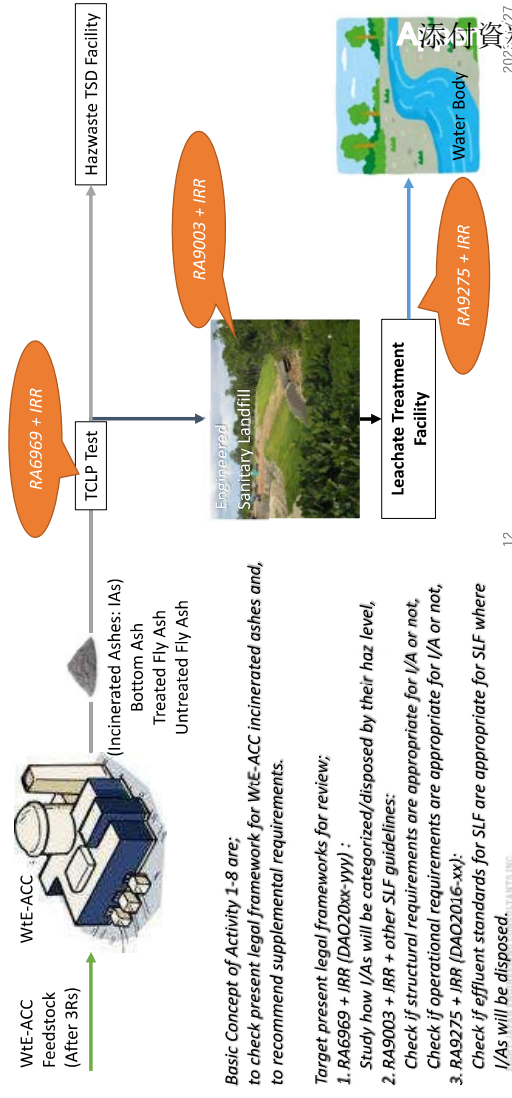
7.2 Facility safety measures

- “fail-safe” and “fool-proof” of equipment

7.3 Formulation of accident response manual

- Accident response manual
- Crisis management and safety assessment

Basic Framework of Activity 1-8



PROJECT ACTIVITY : 10th SUB-GROUP MEETING FOR PROJECT OUTPUT 1 (ENHANCEMENT OF NATIONAL GOVERNMENTS’ CAPACITY FOR SUPPORTING AND COORDINATING OF LGUs’ WTE PROJECT)
DATE/TIME : 12 January 2022, 9:00AM - 11:50AM (Philippine Time)
VENUE : Video Conference through Microsoft Teams
MATERIALS : <https://bit.ly/10thOPISGMfg>

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Call to Order/ Meeting Objectives/Acknowledgement of Attendees (Ms. Elvira Pausing, EMB-SWMD-PMO)	- Ms. Elvira Pausing of EMB-SWMD-PMO commenced the 9th subgroup meeting for Project Output 1 when quorum was reached with 7 of the 14 agencies present. - Ms. Pausing recapped the highlights of the 9th OP1 SG Meeting held last November 4, 2021 where the BATBEP Guidelines were presented. - Ms. Pausing presented the agenda and asked the subgroup members if anything else needed to be discussed.		
2a.) Technical presentation on Activity 1-6: Manual for Planning, Evaluation, Formulation and Supervision of WTE Project (Mr. Makoto Kosaka, JET)	- Mr. Makoto Kosaka revisited the presentation on Activity 1-6: To prepare the Manual for Planning, Evaluation, Formulation, and Supervision of WTE project, that was previously introduced in the last OP1 Subgroup Meeting. - The timeline for the activity was presented, highlighting that Jan2022-April2022 will be devoted to the discussion of the Japanese Guideline shared, on how this can be adopted in the Philippine context as well as whose authority it will fall under. The activity is targeted to be finished by May 2022.	Proposed timeline for Activity 1-6: [Nov2021-Dec2021] - Introduction to Japanese “Guideline for Planning and Designing of Waste Treatment Facilities” [Jan2022-Apr2022] - Discussion on how the guidelines will be adopted in the Philippine context through OP1 subgroup meetings [Apr2022-May2022] - Drafting of Manual for Philippines	[OP1 SG Members] Review and send comments on Sections 1 and 2 of Chapter 4 of the Japanese “Guideline for Planning and Designing of Waste Treatment Facilities” by January 31, 2022.

	● Chapter 4 Sections 1 and 2 were specifically highlighted for discussion, that covers the selection of the construction site of the WTE facility.	● Mr. Kosaka taps the help of the subgroup members in reviewing the shared document and in exploring how this can be adopted to the Philippine context. ○ SG members may request for support documents (e.g. case studies) to supplement their review of the guideline.	
2b.) Technical presentation on Activity 1-6: Under Activity 1-6: Evaluation criteria for EMB on 10-year SWM plans (Mr. Satoshi Higashinakagawa, JET)	● Mr. Higashinakagawa presented the background and implementation plan for the Evaluation Criteria for EMB on the 10-year SWM plan submitted by LGUs. ● Mr. Higashinakagawa shared JET’s current understanding of the review and approval procedure of the 10-SWM plan. JET has scheduled a meeting with DENR-EMB to confirm the procedures and documents used in the review, and to understand the current issues with the procedure. ● He discussed that the Activity primarily intends to support the review and updating of the assessment materials used by DENR in reviewing the 10-year SWM plan. The document presented was the “Annotated Outline” which is one of the assessment documents utilized. ● It was also noted that it may be necessary to add more sections to the review material to include:	● JET will have a meeting with a reviewer of 10 year-SWM plan from EMB-SWMD ● JET will prepare the draft revised evaluation criteria of 10 years SWM plan ● Discussion of the draft revised evaluation criteria of 10 years SWM plan in 11th SG meeting of Output 1 ● [February-April 2022] ● Revise the criteria based on the above discussion ● [April2022]	[JET] To prepare revised evaluation criteria for 10-year SWM plan for discussion in the 11th OP1 SG Meeting.

	○ Description of WtE facility in “SWM System” ○ Waste Flow including receiving waste in WtE facility and residue from WtE facility ○ Description of WtE components in Environmental and Social Consideration ● The next steps of the implementation plan were presented, noting that the activity is targeted to be finished by April 23, 2022.	● Finalize the evaluation criteria of 10 years SWM plan in 12th SG meeting of Output 1 in the end of April ● Mr. Kamishita requested the participants to verify the presented review procedure. ○ There were no comments received from the participants.	
2c.) Technical presentation on Activity 1-5 and 1-8: Interview Survey for TSD Facilities (Mr. Takahiro Kamishita, JET)	● Mr. Kamishita introduced Activity 1-8, which has been recently added to the TCP as a reinforcement activity, which shall cover the review of the current legal framework for the management of WtE-ACC incinerated ashes and to recommend supplementary requirements. ● Interviews are being set up with EMB Regional Offices and TSD facility operators in order to understand the current practices, issues with the current procedure, and later on to guide JET in providing recommendations on how these current practices can be improved. ● Meeting schedules with the EMB RO’s and TSD facility operators were shared, mentioning that the EMB R8 meeting was facilitated last Jan 11, while others aside from CAR have already been calendared. ● Mr. Kamishita also shared the status of the communication with the TSD facility operators:	● Mr. Ruby De Guzman of DOE inquired if hazardous wastes may be accepted in WTE facilities. ○ Mr. Kamishita replied that only MSW is to be accepted in facilities. He further adds that according to DAO 2013-22, TCLP testing must be performed to determine if it is hazardous or otherwise. ○ Engr. Santini Quiocon of HWMS confirmed that TCLP must be performed on the fly and bottom ash to determine how these should be disposed of. ● Mr. Irvin Cadavona inquired why Cleanaway Philippines Inc. has declined the request for an interview. ○ Mr. Kamishita replied that CPI declined the interview	[JET, PMO] To contact TSD facility operators to set up interview and data collection.

	○ Meeting schedule has been settled with MCWMC ○ CEMSI is requiring for an endorsement letter from DENR before request is entertained ○ CPI has declined the request ○ JSI has yet to respond to the request	because their facility does not accept ash waste. ○ Mr. Cadavona volunteered to help with following up with the said facility operators. JET extends gratitude to the support of Mr. Cadavona, but given that the facility does not accept ash waste, JET noted that meeting with CPI will no longer be necessary.	
3a.) Updates on the WtE Bill (Ms. Ruby De Guzman, DOE-REMB)	● Ms. De Guzman relays that the WTE Bills, namely the SB 1789 and HB 7829 are still pending for the next hearing, but assures the project team that constant communication with the Senate and House Committee on Energy is being facilitated.		[DOE] To share updates on the WTE Bill
3b.) Updates on the DOE Department Circular for WTE Facilities (Ms. Ruby De Guzman, DOE-REMB)	● The updated draft was posted last December and comments were received on the said document. ● The CSW has been finished and is now being routed in DOE. The DC is targeted to be signed by the end of January. ● A budget was allocated for DOE, promoted by Sen Gatchallian, that was earmarked for the assessment of WTE technology in the Philippines. The IcR has been evaluated and accepted, and the assessment is to be launched, targeting 33 highly urbanized cities in the Philippines.	● DOE shall be inviting concerned agencies once the Inception Report will be opened for SGDs.	[DOE] To share the updates on the DC once signed and approved.

5.) Wrap-up, Required Actions, and Agreements	Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. [OP1 SG Members] Review and send comments on Sections 1 and 2 of Chapter 4 of the Japanese “Guideline for Planning and Designing of Waste Treatment Facilities” by January 31, 2022. [JET] To prepare revised evaluation criteria for 10-year SWM plan for discussion in the 11th OP1 SG Meeting. [JET, PMO] To contact TSD facility operators to set up interview and data collection. [DOE] To share updates on the WTE Bill [DOE] To share the updates on the DC once signed and approved.	No clarifications and/or alterations raised by the subgroup members.	
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6.) Schedules of the next meetings (Engr. Roxanne Barcenas, EMB-SWMD-PMO)	Ms. Barcenas shared the proposed meetings for the first half of CY 2022. *The calendar is shown in the next page	- Ms. Ruby De Guzman raised a concern with the schedule of the JCC Meeting, mentioning that since the elections are to be held on May 9, and the incumbent officials’ terms shall officially end on June 30. - Ms. De Guzman proposed to move the JCC Meeting to May instead, to also plan how the TCP shall adapt to the next administration - PMO and JET acknowledge the proposal and agree to revise the schedule accordingly.	[JET, PMO] Reschedule the JCC Meeting from June to May in consideration of the national elections.
6.) Other Matters	Mr. Kamishita reminded the participants of the online training hosted by JET last Nov-Dec, to answer the feedback form in order to be eligible to receive a Certificate of Appreciation for the training.		

PROPOSED SCHEDULE OF MEETINGS for 1st half of CY 2022 (as of Jan.6, 2021)

PROJECT OUTPUT	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
PMO	06	09	09	06	11	08	06	03	07	05	02	02
JCC						22					29	
ITWG			23		18			24		19		
SGOP1	12	22		23								
SGOP2			30			15						
OP2 (LGUs)	QC	15DC	15CC	13QC	17DC	15CC						
OP2 (PPPC)												
SGOP3			11									
SGOP4		10										
SEMINAR		25				29						