



2nd Inter-technical Working Group Meeting for

Output 1-1 “Preparation of BAT/BEP Guidelines”

3rd Dec 2020 (Thursday)

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

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Introduction (Background and Objectives)

- BAT/BEP guidelines for WTE are required to develop by NEC-NSWMC in Section 12. of NSWMC Resolution 2019-669 to ensure safe and effective operations of WTE.
- Because NEC is not functional, JET drafts BAT/BEP guidelines on behalf of NEC,
- In the development process of WtE facility, it is necessary to consider the options of technological, institutional and financial aspects within the available technology or financial and institutional systems
- To do so, it is necessary to have the knowledge of good practices of WtE facility and to summarize the practices as BAT/BEP guideline,

Items to be considered

| | |
|----------------------------------|---|
| Technical aspects | Capacity, Waste characteristics (lower calorific value), Energy recovery (electric power, heat), pollution control, handling of residual (bottom ash or slag) |
| Institutional /Financial aspects | Investment cost, operation and maintenance cost, financial scheme, planning, design, construction, operation period, etc |

Contents of Today’s Presentation

1. Introduction (Background and Objectives)
2. Preparation procedure for the BAT/BEP guideline
3. Current Progress of BAT/BEP guideline including each component
4. Further step

Tentative Format for BAT/BEP / Researcher (Ms. Pausing)

| | | | | | | | |
|-------------------|--|---------------|--|----------------------------|-------------|---------------|--|
| Name | UKISHIMA INCINERATION PLANT | Location | Kawasaki City, Japan | | | | |
| Impl. Body | Kawasaki City | Footprint | Refuse Combustion plant : 6.00 ha Bulky Wastes Processing : 0.22 ha Special Combustion Capacity: 0.07 ha | | | | |
| Capacity | Refuse Combustion Capacity: 900 T/day (300 T/day x 3), Bulky waste processing : 50t/day, special waste combustion facility : 300kg/day | Heat Usage | Power : 12.5 MW | Picture | | | |
| Target Waste | Combustible MSW, Bulky Wastes Special Wastes | Waste Quality | 9,600 – 11,300 kJ/kg | | | | |
| History | Plan | Bid | Const. St/Fin | Op. Start/Fin | Demolish | | |
| | Original | - | - | - | - | | |
| | Actual | - | 1991 | 1995 | 1995 | - | |
| Capex | Total Project Cost: ¥46.1 B (429.2 Mill USD) | | Fund Source | LG subsidy from NG | | | |
| Opex | Not available Mil USD/year | | Fund Source | LG | | | |
| Fin. Scheme | Design Build | | Dev. approach | Solicited | | | |
| Coverage (SOW) | Collection | Transp. | Incineration | Power sale | Bottom ash | Fly ash | |
| | LG | LG | LG (DB) | LG | LG (Cement) | LG > Province | |
| Process Type | Incineration (Stoker) | | EPC / Tech | NKK (Remarks if any) | | | |
| Pollution Control | Exhaust Gas | Wastewater | Bottom ash | Fly ash | Other | | |
| | Nox and HCl removal device +Bagfilter | - | Provincial SLF | Provincial SLF after stab. | - | | |

Tentative Format for BAT/BEP

Please describe salient features of the Project (incineration Plant)
WHY you'd like to research/study this project as BAT/BEP?

| Salient Features | Explanation |
|----------------------------|--|
| 1. Pollution control | The measured monitoring data of exhausted gas (NOx, SOx, HCl, dust) are much less than standard. |
| 2. Environmental Education | Kawasaki Eco Kurashi Miraikan was developed with the plant to implement the environmental education of solid waste management including the facility explanation |

Preparation Procedure of BAT/BEP Guideline

- Select the BAT/BEP cases through internet or magazine related to solid waste management
- Collect the detail information including technical, institutional, financial and historical information based on the research format
- Implement Questionnaire survey to WTE operator/manager for data which are not available in the secondary sources.
- Collected data is analyzed quantitatively or qualitatively and highlight some good practices for future reference to consider WtE projects in the Philippines.

Current Progress

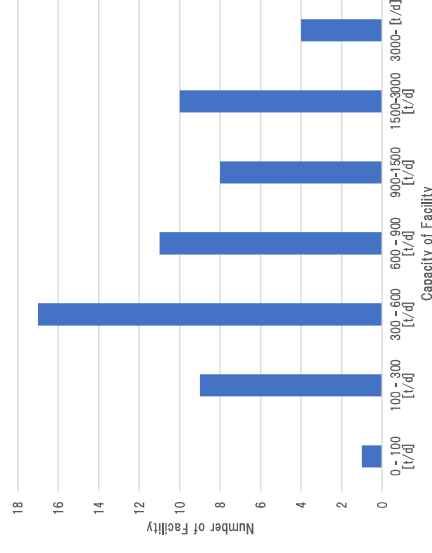
- 60 case studies have been collected with 30 Japanese, 10 the other Asian countries and 20 EU and USA countries.
- In the collected case studies, it is difficult to collect some types of the information such as CAPEX and OPEX including cost sharing scheme, project implementation period or detail technical information through web sites.
- There are some lack of data in web sites, even though it should be disclosed.



Though currently we implement data collection based on some websites and other sources, it might be considered of other methods for data collection except web sites.

Size and Capacity of Incinerator

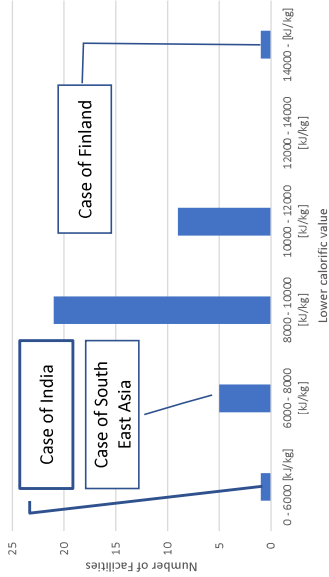
- Most of selected facilities are 100 [t/d] to 3000 [t/d]
- Generally, there are large capacity of incinerator in Europe or China due to large collection area or population.
- In Metropolitan Tokyo, the waste generation is totally 12,000 t/d but the largest capacity WtE facility is 1800 t/d due to waste disposal principles in their jurisdiction.
- Most case of incinerators are 300 to 900 t/d and in Bangkok (500 to 1000 t/d) and Cantho city (400 t/d) in cases of south east Asia.



Waste Characterization (Lower calorific value)

- In most of WtE facilities, the average lower calorific value is around 8,000 to 10,000 [kJ/kg]

- However, there are some facilities which can receive the waste of less than 6,000 [kJ/kg] or more than 14,000 [kJ/kg]



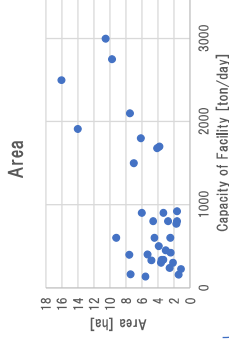
Basically, around 6,000 to 14,000 [kJ/kg] is acceptable for WtE facility.

Area and Size of Incinerators

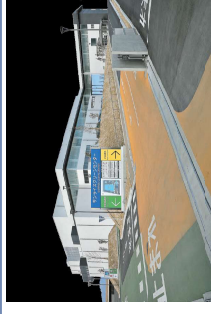
Area

- Land area depends on the capacity of facility and the both relations seems to have proportionality.

- The range of the relationship is wide due to the reason of land availability or type of WtE facility, etc.
- The compact design of WtE facility will be implemented but the cost of civil work will increase



At least, approximately 2 - 4 [ha]/1000 [ton/day] will be necessary.

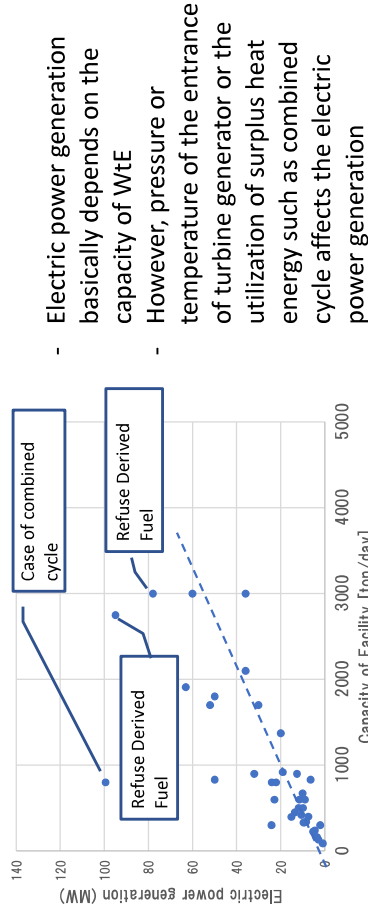


The case of Iwakuni city in Japan, (25 m stack height)

Stack Height

- The standard stack height of incinerators is around 60 m in Japan.
- Due to project conditions such as restriction or landscape issue, the stack height can be lowered. In that case, because the ground level pollutant concentration will increase, more strict emission gas quality control will be necessary, which causes the cost increase.

Energy Recovery (as Power Generation)



- Electric power generation basically depends on the capacity of WtE
- However, pressure or temperature of the entrance of turbine generator or the utilization of surplus heat energy such as combined cycle affects the electric power generation

- Basically, the rate of electric power generation per capacity is approximately 20MW/1000 [ton/day].
- However, it may depend on the energy recovery technique.

Energy Recovery (as Power Generation)

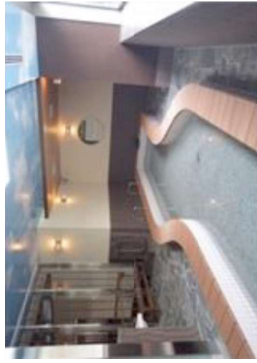
| Item | Technology | Explanation |
|--|--|--|
| - Optimum heat exchange | - Reduction of boiler exit temperature - Lower air ratio combustion or exhausted gas circulation | - Lower temperature economizer in the large amount of heat exchange in the process - Process control will maximize combustion efficiency to control optimum air ratio and exhausted gas circulation |
| - Effective utilization of steam | - No utilization of steam for reheating of exhausted gas after cooling | - Wet exhausted gas treatment system or prevention of white fume need reheating of exhausted gas |
| - Increase of the efficiency of steam turbine system | - Introduction of high temperature and pressure boiler - Integration with fossil fueled fired power plant (external superheating) | - Increasing steam pressure and temperature will allow greater energy to be recovered in the steam turbine. - Utilization of exhausted gas from fossil fuel power generation will cause the increase of energy efficiency |

Energy Recovery (as Thermal Utilization)



Utilization of surplus heat after utilization of electric power generation

- District heating
- Hot bath for community
- Botanical garden
- Hot water pool, etc



Environmental Pollution Abatement Process

Exhausted Gas Standard

| Japan (Shinkoto) | Japanese Law | Facility standard | Actual |
|-----------------------|--------------|-------------------|----------|
| NOx [ppm] | 250 | 60 | 36 - 41 |
| HCl [ppm] | 430 | 15 | <2 |
| SO2 [ppm] | Area basis | 20 | <1 |
| Particulates [mg/Nm3] | 80 | 0.02 | <0.001 |
| Mercury [μg/Nm3] | 50 | - | <5 |
| DXNs [ng/Nm3] | 0.1 | - | <0.00005 |

| France (Isseane) | EU & French Law | Facility standard |
|-----------------------|-----------------|-------------------|
| NOx [ppm] | 87.7 | 28.5 |
| HCl [ppm] | 5.5 | 2.2 |
| SO2 [ppm] | 15.7 | 7.5 |
| Particulates [mg/Nm3] | 9 | 1.3 |
| Mercury [ppm] | 45 | 13.1 |
| DXNs [ppm] | 0.09 | 0.03 |

Note: exchange into O2 (12%)

- In both cases of Japan and EU, WTE facilities stipulates the facility standard which is stricter than national law (or EU Directive)
- The actual emission value of exhausted gas is stricter than the facility standard

Residual handling (material recycle, utilization after treatment, disposal)



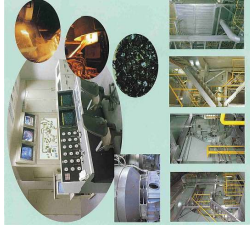
- Normally, the ratio of fly ash and bottom ash occupy respectively 20 wt% and 80 wt% of total ash

Bottom ash

- Collection of ferrous material by magnetic separator
- Utilization of bottom ash as cement aggregate
- Utilization of bottom ash as construction material after its melting, baking, aging, etc
- If not, disposal in municipal waste landfill site or hazardous waste landfill site.

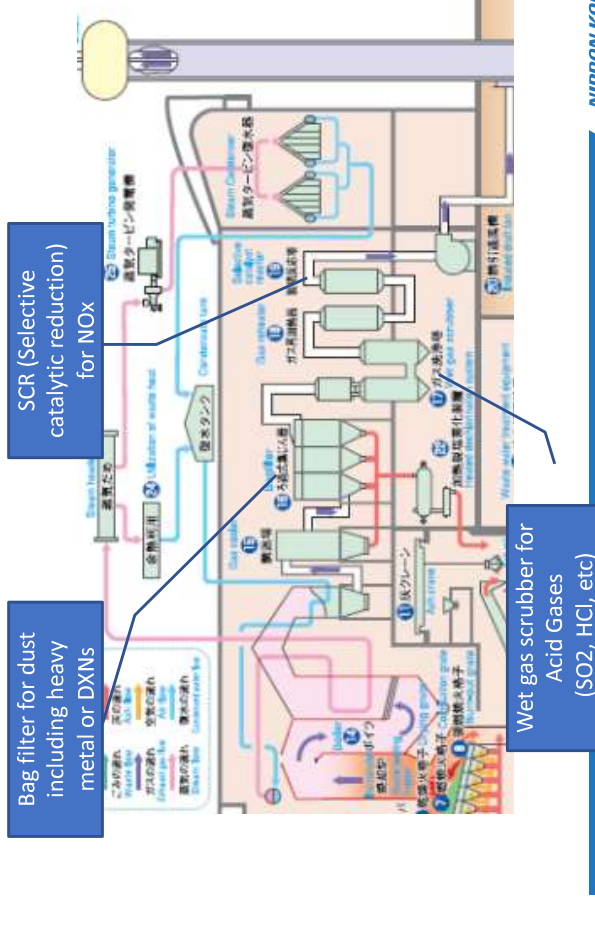
Fly ash

- Normally, disposal in municipal waste landfill site after stabilization normally or hazardous waste landfill site
- In case of Japan, some LGUs implement ash melting for utilization as roadbed material, etc



Environmental Pollution Prevention Process

An example of Air Pollution Prevention Techniques



Utilization of BAT / BEP Guideline

| Technical Aspect | |
|---|---|
| Item to be considered | Summarization (Tentative) |
| Capacity | WtE capacity shall be designed by the waste collection amount and/or MSWM system of LGU, (one LGU or clustering LGUs) |
| Area size | The smallest area size is around 1 ha |
| Lower calorific value | 6000 to 14000 [kJ/kg] is acceptable for WtE facility |
| Energy recovery (electric power) | The relationship between electric power generation and the capacity of WtE facility is approximately 20MW/1000 [ton/day]. |
| Energy recovery (heat recovery) | Utilization of surplus heat for various purpose (community heat provision, hot water) |
| Residual (incineration ash and fry ash) handling or utilization | <ul style="list-style-type: none"> - Separation of ferrous and non-ferrous metal - Utilization of road construction material or cement ingredient |
| Air pollution control method/standard | Many facility utilize own standard stricter than national standard (for public acceptance, etc) |

For future introduction of WTEs in the Philippines
 Refer this BAT/BEP for the preparation of the plan or technical specification of WtE facility

Utilization of BAT / BEP Guideline

| Institutional/Financial Aspect | |
|--|---|
| Item to be considered | Summarization (tentative) |
| Investment cost | Under analysis |
| Operation and maintenance cost | Under analysis |
| Financial mechanism | Under analysis |
| Planning/Design/Tender/Construction/Operation Period | Planning(2 – 3 years), Design (around 1 – 2 years), Construction (2 – 4 years), More than five years from planning to operation commencement Operation (20 to 30 years) |
| Solicited or unsolicited | Most of case studies of good practice are solicited projects |

For future introduction of WTEs in the Philippines
 Refer this BAT/BEP for the preparation of the plan or technical specification of WtE facility

Summarization of Progress

- 60 case studies have been collected but some data collection is difficult.
- Plant capacity or power generation data is collected relatively easily
- However, the collection of the financial data such as CAPEX or OPEX and detail technical information only from web site are difficult.

Futher Step

- Consideration of implementation of questionnaire survey by delivering survey sheet to implementation organization or relevant stakeholders (Data collection until end of this year)
- Continuously data analysis and guideline preparation will be implemented until end of March in next year.

Maraming salamat po !



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



2nd Inter-Agency Technical Working Group

(ITWG)

Progress of Activity 1-4

“Preparation of draft technical standards for WTEs”

Makoto KOSAKA
MSW-PPP Expert
3 Dec. 2020 (Thu)

Attachments;

- 2nd Draft of Technical Standards prepared as MC,
- Comments for Draft from Sub-group members,

1

1. Re-Confirm the Necessity of Tech Standards for WTEs

| | |
|------------------------|---|
| Background | <ul style="list-style-type: none"> ✓ CAA1999, Supreme Court Decision (controlled incineration is not banned.) ✓ NSWMC Resolution 669 in 2016, and DENR AO 2019-21 for WTE GL, |
| Necessity | <ul style="list-style-type: none"> ✓ There are not enough specific Structural/Operational requirements for WTEs, ✓ LGUs, who procures WTEs, doesn't have enough knowledge, thus, ✓ NG shall prepare minimum technical requirement for controlling quality of WTEs, |
| Comparison (Japan, EU) | <ul style="list-style-type: none"> ✓ JET listed the requirements in Japan/EU to discuss how to apply in Philippines, ✓ E.g., authorized body, procedure, scope/limitation of tech standards, ✓ Exhaust gas limit, Loss of Ignition (LoI), temperature of combustion chamber, etc. |
| Drafting | <ul style="list-style-type: none"> ✓ Tech Standards will be used as check list for both applicant and authorized body, ✓ Tech Standards will be integrated in EIS process (according to MC2020-23), ✓ Leader (PMO), Sub-Leader (DOST/ITDI) and JET are jointly drafting, ✓ Necessity to harmonize with Senate Bills recently discussed separately, |
| Review/Comment | <ul style="list-style-type: none"> ✓ 2nd Draft was presented in 6th SGMs held on 14OCT2020, ✓ Comments/revisions are gathered from SG Members of Output 1 by 28OCT, |
| Draft Final | <ul style="list-style-type: none"> ✓ JET to propose this 2nd Draft to ITWG for endorsement with subject conditions, ✓ Expected to present draft final to JCC on DEC after endorsement by ITWG, |

Contents

1. Re-confirm the necessity of WTE Tech Standards (T/S),
2. Progress of drafting T/S,
(Summary of discussion among Sub Group Members (SGMs))
 - (1) Authority of WTEs construction and operation,
 - (2) Intermittent/small capacity of WTEs,
 - (3) Numerical Standards / LOI, Temperature of combustion gas, etc.
 - (4) Coverage/Scope of this T/S as MC,
3. Consolidation of comments for 2nd Draft from SGMs,
(gathered by 05Nov),
4. Next Step, (for endorsement in ITWG, JCC)

Subgroup Structure

☐ SG Members for Output 1 (As of Feb2020)

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

2. Progress of drafting Tech Standards

- Tech Standards are brushed up thru 6 times SG meetings,
- 2nd Draft is presented to ITWG for endorsement (to propose JCC),

| SG MTGS | 1 st | 2 nd | 3 rd | 4 th | 5 th | 6 th | ITWG | JCC |
|----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------|----------|
| Date | 18Feb | 05Mar | 15May 04Jun | 20Aug 07Jul | 12Oct 20Aug | 05Nov 14Oct | - 18Nov | - Dec |
| Team Setup | X | | | | | | | |
| Consideration of structure | | X | | | | | | |
| Preparation | | | | | | | | |
| Presentation of the draft | | | | | | | | |
| Report at dis-Seminar | | | | | | | | |
| ITWG endorsement | | | | | | | | |
| JCC endorsement | | | | | | | | X |

2. Snapshots of drafting Tech Standards

- (Summary of discussion among SG Members thru 6 times SGMs)
- (1) Authority of WTEs construction and operation, <ref: MC2020-23>
 - Upon the construction, ECC shall be secured,
 - For the air/water/hazwaste, annual permits shall be secured,
- (2) Intermittent/small capacity of WTEs,
 - So far don't exclude but they're not realistic.
- (3) Numerical Standards / LOI, Temperature of combustion gas, etc.
 - LOI 5% with sampling/analytical standards,
 - 850 dC x 2 sec, temp. of combustion gas,
- (4) Coverage/Scope of this MC,
 - Focusing only on Waste-to-Energy Incinerator,
 - Exclude: Hazwaste intake, Production of RDF/RPF, Compost, Methane recovery, Sort/Crush/Shredding,

3. Comments from SG members (1/3)

Comments for the 2nd draft of Technical Standards (T/S)

| Category | Items | Commenter | Comments | 2020/11/5 ITWG |
|-----------------------------|--|---|--|-----------------|
| Title | Waste-to-Energy Facilities on Waste Incineration Appropriately Controlled Combustion with Power Generation | DOST-ITDI DENR-EMB-SWMD | As the conclusion of 6th SGM on 14Oct2020: Removal of the term "Incineration" and substituting "Appropriately controlled combustion" instead to avoid controversial matter. > Then it was revised in 2nd draft. | To be discussed |
| ditto | ditto | NEDA-IPG | Suggest to clearly delineate the types of WTE technologies (i.e., incineration). | ditto |
| ditto | ditto | DOE-REMB | WTE facility involves not only power applications but also for non-power and other emerging WTE technologies. | ditto |
| ditto | ditto | DOE-REMB | On 14Oct2020, it was concluded not to use the term incinerate/incineration in the draft due to the social acceptability of said term. However, the said term is used in Senate Bill No. 1789. | ditto |
| ditto | ditto | PPPC | Suggest to define "appropriately controlled combustion with power generation" | ditto |
| Purpose/Objective | Insertion of objective and scope | NEDA-IPG DENR-FASPS | (Under confirmation with intention to the commenters) To clarify the overarching objective and scope of the proposed guidelines | |
| Scope | Scope of T/S | DENR-EMB-SWMD DOE-REMB JET | Discussed the scope of WTE technologies then concluded to limit only WTE Incineration Technology (appropriately controlled combustion with power generation) to align with Annex 3 of R/D. | |
| Definition "residual waste" | Definition | DENR-EMB-SWMD DOE-REMB Quezon City JET | JET recognizes the necessity to define "residual waste" because this word is frequently used but in different level of residuals. E.g. in DAO2019-21, it is defined as "Residual Waste shall refer to any material generated after the implementation of 3Rs (Reduce, Reuse, Recycle <i>with final value</i> ." | To be discussed |
| "WTE Feedstock" Definition | Definition | PPPC | Meanings of "optimum economical extent" | To be discussed |
| ditto | ditto | DOE-REMB | Consistency with Senate Bill 1789 | ditto |
| ditto | ditto | NEDA-IPG | Acceptance criteria | ditto |

3. Comments from SG members (1/3)

Comments for the 2nd draft of Technical Standards (T/S)

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| "WTE Feedstock" Definition | Definition | PPPC | Meanings of "optimum economical extent" | To be discussed |
| ditto | ditto | DOE-REMB | Consistency with Senate Bill 1789 | ditto |
| ditto | ditto | NEDA-IPG | Acceptance criteria | ditto |

3. Comments from SG members (2/3)

| Category | Items | Commenter | Comments | ITWG |
|--|---|---------------------------------------|--|------|
| Record of intake waste | Additional requirement | DOE-REMB | (Now reviewing by JET) JET suppose this is written in DAO2019-21, check necessity to reproduce. | |
| Incrinerated ash bottom and fly ash) | Management (storage, treatment and disposal) of ash | DENR-EMB-HWMS NEDA-IPG JET | (Now incorporating to the draft) Suggestions to insert determination of hazwaste or not by TCLP then refer to RA6959 for hazwaste and RA5003 for non-hazwaste. Internal discussions of JET is ongoing. Suggest to specify the responsibility of ash management of WIE operator. JET's opinion is that it can be designed by LGU to WIE operator in the contract. | |
| ditto | ditto | DOE-REMB | | |
| Monitoring | Frequency of exhaust gas monitoring (Not CEMS) | DENR-EMB-SWMD DENR-EMB-AQMS JET | (Now clarifying with EMB-AQMS via PMO) | |
| Variance of exhaust gas standard | Allowance for start up/shut down | DOST-ITDI DENR-EMB-AQMS | There is no allowance of emission limits during start-up/shut-down according to AQMS. To be consulted with DOST-ITDI for finalization. | |
| Operators' qualification | Operators' qualification specific for WIE incinerator | DOST-ITDI | Clarified what type of qualifications are specifically needed to operate WIE. JET shared lists in Japan to DOST-ITDI to consider whether these are translated to Philippines situation or not. | |
| Fire Code of the Philippines | To refer Fire code of the Philippines | NEDA-IPG | Suggested to introduce Fire Code and it's irr in T/S. JET will incorporate into the draft. | |
| Occupational Safety and Health Standards | To refer OS&H Standards | DOE-REMB | Suggested to introduce OS&H Standards in T/S. JET will incorporate into the draft. | |

4. Next Step;

- Tech Standards are brushed thru 6 times SG meetings,
- 2nd Draft is presented to ITWG for endorsement (to propose JCC),

| SG MTGs | 1 st | 2 nd | 3 rd | 4 th | 5 th | 6 th | ITWG | JCC |
|----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------|----------|
| Date | 18Feb | 05Mar | 15May 04Jun | 20Aug 07Jul | 12Oct 20Aug | 05Nov 14Oct | - 18Nov | - Dec |
| Team Setup | X | X | Covid-19 | | | | | |
| Consideration of structure | | X | | | | | | |
| Preparation | | | | | | | | |
| Presentation of the draft | | | * | Discuss | 1st | 2nd | 2nd | |
| Report at dis-Seminar | | | * | | | | | |
| ITWG endorsement | | | | * | | | X | |
| JCC endorsement | | | | | | | | X |

3. Comments from SG members (3/3)

| Category | Items | Commenter | Comments | ITWG |
|--------------------------|---|-----------|---|-----------------|
| Capacity of WTE facility | For expansion of the capacity | PPPC | Clarified the necessity to obtain ECC again if expansion of the capacity (t/day). In Japan, capacity expansion is usually required to obtain another ECC because it needs re-design of combustion and gas treatment system. | |
| ditto | To require power generation capacity for the application of ECC | DOE-REMB | JET needs discussion with DOE and other parties. Since power capacity (MW) is calculated from waste quality (CV, kcal/kg) and tonnage (t/d or kg/hour), power gen efficiency (20-25%) with conversion factor. WIE can guarantee receiving capacity as t/day and power gen. efficiency while can't control waste quality (LCV) but it is provided by and shall be guaranteed by LGU. Therefore, in Japan we don't require WIE to guarantee MW in the procurement stage (MW can be evaluation criteria). | |
| Other | Standards for waste transfer, storage and pre-treatment | NEDA-IPG | These suggestions are because of Senate Bill 2789. Some of them can be addressed by this TCP. But main actor for them is NSMWIC and JET was not able to reach NSMWIC. Therefore, we suggest to use utilization/recovery/treatment process will be designed for the LGUs locally. E.g. for the biogas. It is required to storage and transfer biodegradable waste so it is diffused with incinerator. | To be discussed |
| ditto | Siting of WTE | NEDA-IPG | This will be guided by JET's activity under this TCP (Activity 1-6 Manual for xxx). | ditto |
| ditto | Dismantlement of WTE | NEDA-IPG | Ditto. | ditto |

If the time allows, JET would like to discuss a few important items in ITWG.

Thank you for your attention!!

Makoto KOSAKA

JICA Expert for SWM-PPP (Solid Waste Management – Public Private Partnership),
**Technical Cooperation Project for Capacity Development on
 Improving SWM through Advanced/Innovative Technologies**

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Comments for the 2nd draft of Technical Standards (T/S) 2020/11/5

| Category | Items | Commenter | Comments | ITWG |
|-----------------------------|--|---|--|-----------------|
| | Waste-to-Energy Facilities on Waste Incineration | | As the conclusion of 6th SGM on 14Oct2020; Removal of the term "incineration" and substituting "Appropriately controlled combustion" instead to avoid controversial matter. | |
| Title | <u>Appropriately Controlled Combustion</u> with Power Generation | DOST-ITDI DENR-EMB-SWMD | > Then it was revised in 2nd draft. | To be discussed |
| ditto | ditto | NEDA-IPG | Suggest to clearly delineate the types of WTE technologies (e.g., incineration) | ditto |
| ditto | ditto | DOE-REMB | WTE facility involves not only power applications but also for non-power and other emerging WTE technologies. | ditto |
| ditto | ditto | DOE-REMB | On 14Oct2020, it was concluded not to use the term incinerate/incineration in the draft due to the social acceptability of said term. <u>However, the said term is used in Senate Bill No.1789.</u> | ditto |
| ditto | ditto | PPPC | Suggest to define "appropriately controlled combustion with power generation" | ditto |
| Purpose/Objective | Insertion of objective and scope | NEDA-IPG DENR-FASPS | (Under confirmation with intention to the commenters) To clarify the overarching objective and scope of the proposed guidelines | |
| Scope | Scope of T/S | DENR-EMB-SWMD DOE-REMB JET | Discussed the scope of WtE technologies then concluded to limit only WTE Incineration Technology (appropriately controlled combustion with power generation) to align with Annex 3 of R/D. | |
| Definition "residual waste" | Definition | DENR-EMB-SWMD DOE-REMB Quezon City JET | JET recognizes the necessity to define "residual waste" because this word is frequently used but in different level of residuals. E.g. in DAO2019-21, it is defined as " <u>Residual Waste</u> shall refer to any material generated after the implementation of 3Rs (Reduce, Reuse, Recycle) <u>with fuel value</u> ." | To be discussed |
| "WtE Feedstock" | Definition | PPPC | Meanings of "optimum economical extent" | To be discussed |
| ditto | ditto | DOE-REMB | Consistency with Senate Bill 1789 | ditto |
| ditto | ditto | NEDA-IPG | Acceptance criteria | ditto |

2020/11/5

Comments for the 2nd draft of Technical Standards (T/S)

| Category | Items | Commenter | Comments | ITWG |
|--|---|---------------------------------------|--|------|
| Record of intake waste | Additional requiremnet | DOE-REMB | (Now reviewing by JET) JET suppose this is written in DAO2019-21, check necessity to reproduce. | |
| Incinerated ash (bottom and fly ash) | Management (storage, treatment and disposal) of ash | DENR-EMB-HWMS NEDA-IPG JET | (Now incorporating to the draft) Suggestions to insert determination of hazwaste or not by TCLP then refer to RA6969 for hazwaste and RA9003 for non-hazwaste. Internal discussions of JET is ongoing. | |
| ditto | ditto | DOE-REMB | Suggest to specify the responsibility of ash management of WtE operator. JET's opinion is that it can be designed by LGU to WtE operator in the contract. | |
| Monitoring | Frequency of exhaust gas monitoring (Not CEMS) | DENR-EMB-SWMD DENR-EMB-AQMS JET | (Now clarifying with EMB-AQMS via PMO) | |
| Variance of exhaust gas standard | Allowance for start up/shut down | DOST-ITDI DENR-EMB-AQMS | There is no allowance of emission limits during start-up/shut-down according to AQMS. To be consulted with DOST-ITDI for finalization. | |
| Operators' qualification | Operators' qualification specific for WTE incinerator | DOST-ITDI | Clarified what type of qualifications are specifically needed to operate WtE. JET shared lists in Japan to DOST-ITDI to consider whether these are translated to Philippines situation or not. | |
| Fire Code of the Philippines | To refer Fire code of the Philippines | NEDA-IPG | Suggested to introduce Fire Code and it's irr in T/S. JET will incorporate into the draft. | |
| Occupational Safety and Health Standards | To refer OS&H Standards | DOE-REMB | Suggested to introduce OS&H Standards in T/S. JET will incorporate into the draft. | |

| Category | Items | Commenter | Comments | ITWG |
|--------------------------|---|-----------|---|-----------------|
| Capacity of WTE facility | For expansion of the capacity | PPPC | Clarified the necessity to obtain ECC again if expansion of the capacity (t/day). In Japan, capacity expansion is usually required to obtain another ECC because it needs re-design of combustion and gas treatment system. | |
| ditto | To require power generation capacity for the application of ECC | DOE-REMB | JET needs discussion with DOE and other parties. Since power capacity (MW) is calculated from waste quality (LCV, kcal/kg) and tonnage (t/d or kg/hour), power gen efficiency (20-25%) with conversion factor. WtE can guarantee receiving capacity as t/day and power gen. efficiency while can't control waste quality (LCV) bcs it is provided by and shall be guaranteed by LGUs. Therefore, in Japan we don't require WtE to guarantee MW in the procurement stage (MW can be evaluation criteria). | |
| Other | Standards for waste transfer, storage and pre-treatment | NEDA-IPG | These suggestions are because of Senate Bill 1789. Some of them can be addressed by this TCP. But main actor for them is NSWMC and JET was not able to reach NSWMC. Conditions of waste transfer and storage shall be specified by LGUs depending on what type of utilization/recovery/treatment process will be designed for the LGU's locality. E.g. for the biogas, it is required to storage and transfer biodegradable waste so it is differed with incinerator. | To be discussed |
| ditto | Siting of WTE | NEDA-IPG | This will be guided by JET's activity under this TCP (Activity 1-6 Manual for xxx). | ditto |
| ditto | Dismantlement of WTE | NEDA-IPG | Ditto. | ditto |



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EMB MEMORANDUM CIRCULAR

No. 2020 - ____

SUBJECT : GUIDELINES FOR THE TECHNICAL STANDARDS OF WASTE-TO-ENERGY FACILITY ON APPROPRIATELY CONTROLLED COMBUSTION WITH POWER GENERATION

In line with the mandate of the Department of Environment and Natural Resources (DENR) through the Environmental Management Bureau (EMB) to recommend policies to eliminate barriers to waste reduction programs and to effectively implement the Republic Act (RA) No. 9003 otherwise known as the “Ecological Solid Waste Management Act of 2000” and its Implementing Rules and Regulations, as well as, to complement the DENR Administrative Order 2019-21 otherwise known as the “Guidelines Governing Waste-to-Energy (WtE) Facilities for the Integrated Management of Municipal Solid Wastes”, the Guidelines for the Technical Standards of “Waste-to-Energy Facilities on Appropriately Controlled Combustion with Power Generation” is hereby provided as follows:

Section 1. SCOPE

This Circular shall apply to all Waste-to-Energy facilities on appropriately controlled combustion with power generation to be operated nationwide. It shall provide comprehensive set of standards in the form of technical checklist for the structure, operation and maintenance of Waste-to-Energy facilities on appropriately controlled combustion with power generation and the guidelines for the management of bottom ash and fly ash from them.

Section 2. Definition of Terms

For the purpose of this Memorandum Circular, the following words and phrases shall have the following meanings:

- a. **Bottom Ash** shall refer to agglomerate ash formed that are too large to be carried in the flue gases and fall through open grates to an ash hopper at the bottom of the furnace.
- b. **Bureau** shall refer to the Environmental Management Bureau.
- c. **Continuous Emission Monitoring System (CEMS)** shall refer to the total equipment used to sample, analyze and provide a permanent record of emissions or process parameters.
- d. **Department** shall refer to the Department of Environment and Natural Resources.
- e. **Dioxins and Furans**
- f. **Effluent Standard**
- g. **Emission**

- h. **Fly Ash** shall refer to the ash formed that are too small and light and are carried in the flue gases.
- i. **WtE Feedstock** shall refer to any residual waste after the implementation of 3Rs (Reduce, Reuse, Recycle) by LGUs at optimum economical extent to be supplied to the facility for the purpose of recovering its thermal energy.
- j. **Hazardous wastes** shall refer by-products, side-products, process residues, spent reaction media, contaminated plant or equipment or other substances from manufacturing operations and as consumer discards of manufactured products which present unreasonable risk and/or injury to health and safety and to the environment.
- k. **Materials Recovery Facility (MRF)** shall include solid waste transfer station or sorting station, drop off center, a composting facility and recycling facility (DAO2001-34).
- l. **Municipal Solid Waste (MSW) or Municipal Waste** shall refer to wastes produced from activities within LGUs which include a combination of domestic waste from residential, commercial, institutional and industrial waste and street litters (DAO2001-34).
- m. **Recyclable Materials** shall refer to any waste material retrieved from the waste stream and free from contamination that can still be converted into suitable beneficial use or for other purposes.
- n. **Residual Waste** shall refer to any residual waste after the implementation of 3Rs (Reduce, Reuse, Recycle) by LGUs at maximum extent in economical and institutional regardless its disposal mode such as utilized in WtE facility or disposed in Sanitary Landfill.
- o. **Residuals Containment Area (RCA)** shall refer to the temporary storage for “WtE Feedstock”
- p. **Sanitary Landfill**
- q. **Toxic Equivalents (TEQ)**
- r. **Toxic Equivalency Factors (TEFs)** (Not in use)
- s. **Waste-to-Energy (WtE)** shall refer to the process of converting waste with various technologies, usually the conversion of ~~non-recyclable waste materials~~ “WtE feedstock” into useable heat, electricity, or fuel through a variety of processes.
- t. **WtE facility** shall refer to the structure/appurtenant facility where the Waste-to-Energy facilities on appropriately controlled combustion with power generation operations are housed.

Section 3. Permitting Requirements

All WtE Projects, regardless of the power generating capacity, are covered by the EIS System, and are required to secure ECC as provided for under the issued Memorandum Circular 2020-23 otherwise known as “Clarification on the Requirements of WtE Projects relative to ECC Application pursuant to DAO 2019-21, and other permits cited in DAO2019-21 Section 5.a.

Section 4. Technical Standards and Guidelines

All persons, natural or juridical, who are engaged in structural, operational and maintenance standards for Waste-to-Energy facilities on appropriately controlled combustion with power generation must adhere to this standards and guidelines and coordinate with the DENR EMB Central and Regional Office who has jurisdiction over their area of operation

and/or principal office of their business, and to ensure compliance to the following standards and guidelines, to wit:

4.1. General

4.1.1. Compliance with other applicable laws and regulations

All WtE facilities shall comply with existing structural requirements set forth in National Building Code and other applicable regulations to be safe in terms of structural strength against self-weight, loading capacity and other loads, seismic force and temperature stress.

4.1.2. Prevention of Corrosion.

All WtE facilities shall take necessary measures to prevent corrosion caused by exhaust gas, wastewater, etc. generated from waste and a result of waste treatment.

4.1.3. Fire prevention and control

All WtE facilities shall comply with the Fire Code of the Philippines and take necessary measures to prevent fires and provide fire extinguishers and other fire extinguishing equipment.

4.1.4. Operation stability

For the continuous running WtE facilities, it is required to be capable for continuous and stable operation at least 90 days or more per line. For the intermittent running WtE facilities, it is required to be capable for continuous and stable operation as planned at least 90 days or more per line.

4.1.5. Effective use of residual thermal power

All WtE facilities shall be capable to effective use of residual heat such as power generation, external heat supply, etc.

4.2. Complete Combustion Control

4.2.1. Processing Capacity.

All WtE facilities shall have the processing capacity (tons per day) which indicated in the EIS application document, and All WtE operators shall not accept waste more than the indicated capacity in the approved ECC.

4.2.2. Waste Feeding.

All WtE facilities shall have a device capable of quantitatively and continuously introducing waste into the combustion chamber while being insulated from outside air. All WtE operators shall input waste into the combustion chamber continuously in a quantitative manner in a state of isolation from the outside air. When inputting waste into the combustion chamber by the pit crane method, ensure that waste is mixed uniformly at all times.

4.2.3. Structural Requirement for Combustion Chamber

All WtE facilities shall have a combustion chamber meeting the following requirements:

- i. Said system shall be such that it is possible to incinerate waste in a state where the temperature of the combustion gas is 850 degrees Celsius or more.
- ii. Be capable of retaining the combustion gas for 2 seconds or more while maintaining the temperature of 850 degrees Celsius or more.
- iii. Said system shall be isolated from outside air.
- iv. To have the temperature of the combustion gas promptly raised to or above the temperature said in (i), and to be equipped with an auxiliary combustion device necessary to maintain the temperature.
- v. The equipment has been installed to supply the necessary amount of the air for combustion (Limited to those having the function of adjusting the amount of supplied air.).

4.2.4. Operational Requirements for Combustion Chamber.

WtE Operators shall:

- i. Maintain the temperature of the combustion gas in the combustion chamber at 850 degrees Celsius or more.
- ii. Incinerate so that loss of ignition of the incinerated bottom ash to be 5% or less. However, this shall not apply to the case where the incinerated bottom ash is used so as not to cause hindrance to the preservation of the living environment.
- iii. Quickly raise the furnace temperature by operation an auxiliary combustion device, etc. when starting operation.
- iv. Keep the temperature of the said furnace high by operating an auxiliary combustion device, etc., and burn all waste when the operation of the said facilities is to be stopped.

4.2.5. Continuous Measurement and Record of Temperature of Combustion Gas.

All WtE facilities shall have equipment continuously measuring and recording the temperature of the combustion gas in the combustion chamber. All WtE operators shall continuously measure and record the temperature of the combustion gas in the combustion chamber.

4.3. Exhaust Gas Control

4.3.1. Cooling System of Combusted Gas.

All WtE facilities shall have a cooling facility capable of cooling the temperature of the combustion gas flowing into the dust collector to approximately 200 degrees Celsius or less. However, this shall not apply to the case where the temperature of the combustion gas can be quickly cooled to approximately 200 degrees Celsius or less in the dust collector.

All WtE operators shall cool the temperature of the combustion gas flowing into the dust collector to approximately 200 degrees Celsius or less. However, this shall not apply to the case where the temperature of the combustion gas can be cooled to approximately 200 degrees Celsius or less in the dust collector.

4.3.2. Continuous Measurement and Record of Temperature of Combusted Gas flowing into the dust collector.

All WtE facilities shall have a device continuously measuring and recording the temperature of the combustion gas flowing into the dust collector. All WtE operators shall continuously measure and record the temperature of the combustion gas flowing into the dust collector.

4.3.3. Exhaust gas treatment system.

All WtE facilities shall have exhaust gas treatment systems (Limited to those with an advanced function to remove dust) capable of preventing the hindrance in the preservation of the living environment caused by the exhaust gas discharged from the chimneys of the facility shall be provided. WtE operators shall, in its operation, comply with exhaust gas emission standard specified in Section 19 of RA8749 to prevent the hindrance in the preservation of the living environment caused by exhaust gas, and remove soot and dust accumulated in cooling equipment and exhaust gas treatment equipment.

4.3.4. Continuous Measurement of CO in exhaust gas.

All WtE facilities shall have equipment for continuously measuring and recording the concentration of carbon monoxide (CO) in the exhaust gas discharged from the chimney of the facility.

- i. All WtE operators shall incinerate waste so that the concentration of carbon monoxide (CO) in exhaust gas discharged from chimneys is 100 ppm or less (as 1 hour average at 12% O₂ basis).
- ii. Provided, however, that this shall not apply to an WtE facilities which it is inappropriate to use the concentration of carbon monoxide (CO) as an index for the maintenance of combustion in order to suppress the generation of dioxins in exhaust gas discharged from chimneys, and which measures and records the concentration of dioxins in said exhaust gas at least once every three months.
- iii. All WtE operators shall continuously measure and record the concentration of carbon monoxide (CO) in the exhaust gas discharged from a chimney. This continuous measurement shall be kept from the time which WtE facility starts its operation until CO concentration could be enough low after stop operation.

4.3.5. Emission limit value of Dioxins and Furans.

All WtE facilities shall incinerate waste so that the concentration of dioxins in exhaust gas discharged from chimneys is less than the concentration specified in 6.3 c) of DENR Administrative Order No. 2019-21.

4.3.6. Monitoring frequency of exhaust gas

All WtE facilities shall measure and record the concentration of dioxins in the exhaust gas emitted from chimneys at least once a year, and the concentration of exhaust gas (Limited to the substances related to sulfur oxides (SO_x), dust, hydrogen chloride (HCl) and nitrogen oxides (NO_x.) at least once in 6 months.

4.4. Wastewater Control

4.4.1. Wastewater sealing.

All WtE facilities shall have a structure that holds wastewater generated in the facility to ensure that leakage and permeation to underground water is avoided.

4.4.2. Wastewater from WtE Facilities.

In the case where exhaust gas discharged from chimneys is washed or cooled with water, to ensure that the scattering and outflow of the said water do not hinder the preservation of the living environment.

In the case that wastewater is discharged from facilities, the facilities shall have the wastewater treatment facilities necessary to comply with the effluent standards set force in DAO2016-08 to ensure that the water quality does not hinder the preservation of the living environment.

4.5. Ash Management

4.5.1. Ash Management

All WtE operators shall treat and/or dispose generated fly and bottom ash in compliance with RA6969 and DAO2013-22 “Revised Procedures and Standards for Management of Hazardous Waste”.

4.5.2. Ash discharge

All WtE facilities shall have an ash discharging facility and its storage facility capable of discharging and storing fly ash separately from bottom ash. The structure of ash discharging facility shall be such that fly ash or bottom ash do not scatter or flow out.

All WtE operators shall discharge and store fly ash from bottom ash separately.

4.5.3. Cement solidification or chemical treatment of ash

In the case of stabilization of fly ash or bottom ash by cement solidification or chemical treatment, a kneading device capable of uniformly mixing fly ash or bottom ash, cement or chemicals and water shall be provided.

In such case, fly ash or bottom ash, cement or chemicals and water shall be uniformly mixed.

4.6. Other Environmental Pollution Control

4.6.1. Prevention of Noise and Vibration.

All WtE facilities shall not generate extreme noise and vibration, nor damage the surrounding living environment. All WtE operators shall take necessary measures so that surrounding living environment will not be damaged by significant noise and vibration. Approaches in structural and site layout must be complied particularly on the waste handling operations that must be totally enclosed to contain noise.

4.6.2. Prevention of Scattering and Offensive Odor.

All WtE facilities shall have a structure or equipment necessary for, by which all WtE operators shall take necessary measure for, the prevention of waste scattering and emission of offensive odor. Provision of appropriate technologies and practices to minimize odor and litter concerns.

4.6.3. Housekeeping inside of the facility.

All WtE facilities shall endeavor to prevent the occurrence of mosquitoes, flies, etc. and maintain the cleanliness of the premises. Provision of pest control programs to control specific vector populations and practices that reduce the likeliness of attracting vectors.

4.7. Other Requirements

4.7.1. Periodical inspection

In addition to the preceding items, all WtE facilities shall be taking the necessary measures to maintain the functions of the facility, and periodically conducting functional inspections and inspections of ash, exhaust gas and water quality.

4.7.2. Record management

Records of check, inspections and other measures concerning the maintenance of facilities (Including emergency measures) shall be prepared and retained for five (5) years in soft and hard copies.

Section 5. Separability Clause

If any provision of this Memorandum Circular, or the application of any such provision to any person or circumstance, shall be held to be unconstitutional, invalid, illegal or unenforceable, the remainder of the provisions hereof that are not affected, or the application of such provision to Persons or circumstances other than those as to whom or which it is invalid, illegal or unenforceable, shall not in any way be affected or impaired thereby.

Section 6. Repealing Clause

All other Circulars inconsistent with any provisions hereof are hereby repealed and amended accordingly.

Section 7. Effectivity

This Circular shall take effect fifteen (15) days after the publication in a newspaper of general circulation and upon acknowledgment of receipt of a copy thereof by the Office of the National Administrative Register (ONAR).

Issued this ___th day of _____ 2020, Quezon City, Philippines.

ENGR. WILLIAM P. CUÑADO
OIC - Director

DISCUSSION DRAFT

(For in case) Discussions for Activity 1-4



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EMB MEMORANDUM CIRCULAR
 No. 2020 - _____

SUBJECT : GUIDELINES FOR THE TECHNICAL STANDARDS OF WASTE-TO-ENERGY FACILITY ON APPROPRIATELY CONTROLLED COMBUSTION WASTE INCINERATION WITH POWER GENERATION

Keep the word of "Incineration"?

Raised by: DOST-ITDI, DENR-SWMD, NEDA-IPG, PPC, DOE-REMB

| Cat. | Items | Commenter | Comments |
|-------|---|---|--|
| | Waste-to-Energy Facilities on Waste Incineration | DOST-ITDI DENR-EMB-SWMD | As the conclusion of 6th SGM on 14Oct2020; Removal of the term "incineration" and substituting "Appropriately controlled combustion" instead to <u>avoid controversial matter</u> . > Then it was removed in 2nd draft. |
| Title | Waste Incineration <u>Appropriately Controlled Combustion with Power Generation</u> | NEDA-IPG DOE-REMB DOE-REMB PPC | Suggest to clearly delineate the types of WTE technologies (e.g., incineration) WTE facility involves not only power applications but also for <u>non-power</u> and other emerging WTE technologies. On 14Oct2020, it was concluded not to use the term incinerate/incineration in the draft due to the social acceptability of said term. However, <u>the said term is used in Senate Bill No.1789</u> . Suggest to define "appropriately controlled combustion with power generation" |

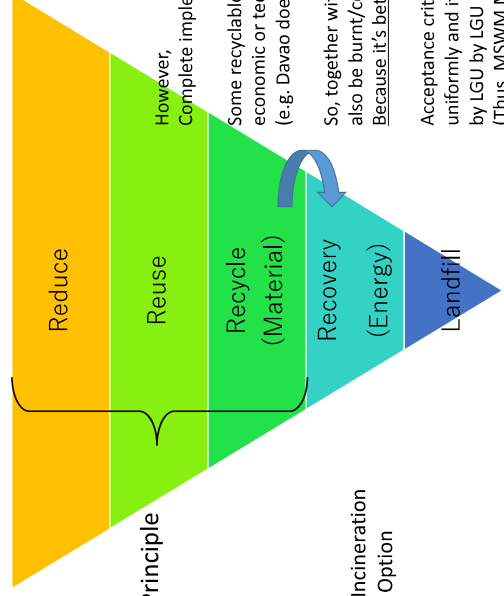
Legal categorization of wastes in Philippines

Categorization by activities/sources

| | Agricultural Waste (Agro-waste) | Health Care Waste (HCW) | Chemical/Industrial Waste | Household/Domestic Waste | Commercial Waste | Institutional Waste | Street Litters | Const. & Demolish Waste |
|-------------------|---------------------------------|---|--|---|---|---|---|---------------------------|
| Legal basis | RA9003 SBI789 | DOH HCW Management Manual | RA9003 SBI789 | RA9003 SBI789 | RA9003 SBI789 | RA9003 SBI789 | RA9003 SBI789 | RA9003 SBI789 |
| Municipal Waste | | General Waste | Solid Waste ????? (according to RA9003 and SBI789) | | | | | |
| Hazardous Waste | Not generated? | Hazardous Health Care Waste/ Biomedical Waste | Much; Separately collected? | Less; Separately collected? Mixed with MSW? | Less; Separately collected? Mixed with MSW? | Less; Separately collected? Mixed with MSW? | Less; Separately collected? Mixed with MSW? | ??? Separately collected? |
| Source | Fields | Clinics/Hospitals | Factories/Laboratory | House | Offices/Shops | Schools/Gov. offices | Street | Const. sites |
| Present disposal | Used in fields | Landfill or Thermal Treat | Landfill | Landfill | Landfill | Landfill | Landfill | Landfill |
| With WTE disposal | Used in fields | Incineration | Incineration | Incineration | Incineration | Incineration | Incineration | Landfill |

Categorization by possession of haz. property

Waste management hierarchy



Definition of WTE Feedstock

Raised by: DOE-REMB, DENR-SWMD, NEDA-IPG, PPC, Quezon City,

Consistency with Senate Bill 1789

Raised by: DOE-REMB, NEDA-IPG

- Proposed mandates to NSWMC are same with TCP activities;

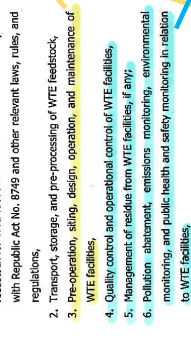
| Source | Definitions of "WTE feedstock" | JET comments |
|--------------------------------------|---|--|
| DAO2019-21 | <p>Feedstock refers to the <u>segregated biodegradable or residual waste materials</u> supplied to the WTE facility to generate heat or electricity</p> <p>Residual Waste shall refer to any material generated after the implementation of 3Rs (Reduce, Reuse, Recycle) with fuel value.</p> | <p>As stated in previous slide, in many cases WTE has no choice to receive other than "<u>segregated biodegradable or residual waste materials</u>" so it shall be a bit more flexible.</p> <p>The intention is to limit only 3R residuals with fuel value can be fed to WTE as "Feedstock". But this definition doesn't consider about 3R residuals w/o fuel value, such should also be "residual waste".</p> |
| Senate Bill 1789 | <p>WTE feedstock refers to the <u>waste materials with calorific-value</u> that are taken in for WTE processing in a WTE facility</p> | <p>In contrast with above, this definition lead recyclables to be fuel even if there is still opportunity for material recycle.</p> |
| JET proposed definition in draft T/S | <p>WTE Feedstock shall refer to any residual waste after the implementation of 3Rs (Reduce, Reuse, Recycle) by LGUs at optimum economical extent to be supplied to the facility for the purpose of recovering its thermal energy.</p> | <p>The concept of this is that LGUs have to design and implement maximum effort for the 3Rs at that moment. WTE can accept such remain which has value to be energy as the feedstock.</p> |

Section 6. NSWMC shall (cont. from page 7):

- (b) Act as the lead agency in ensuring streamlined standards, criteria, and guidelines for WTE facilities to avoid inconsistent and conflicting issuances;
- (c) Regularly determine, review, and publish the following:
 - (i) Standards, criteria, and guidelines for:
 1. Characterization and composition of solid waste utilized as WTE feedstock for WTE facilities to ensure emissions are compliant with Republic Act No. 8749 and other relevant laws, rules, and regulations,
 2. Transport, storage, and pre-processing of WTE feedstock,
 3. Pre-operation, siting, design, operation, and maintenance of WTE facilities,
 4. Quality control and operational control of WTE facilities,
 5. Management of residue from WTE facilities, if any,
 6. Pollution abatement, emissions monitoring, environmental monitoring, and public health and safety monitoring in relation to WTE facilities,
 7. Decommissioning, closure, and abandonment of WTE facilities, and
 8. Other guidelines pursuant to relevant laws, rules, and regulations, and
 - (ii) Minimum standards, criteria, and guidelines in determining a fair, equitable, and reasonable processing fee for WTE facilities taking into consideration, among others, the cost of construction, operation, and

No.3 & 7 will be guided in **Activity 1-6**
"Prepare manual for planning, evaluation, formulation & supervision for WTE projects",

No. 4, 5 & 6 are presently prepared in **Activity 1-4**
"Prepare draft technical standards for WTE facility focused on waste incineration with power generation",





2nd ITWG Meeting

“Tentative observations and suggestions”

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

3rd December 2020

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

1

1. Tipping fees for waste

Observation

- Present SWM cost shouldered by LGUs is NOT enough/reasonable to support desirable SWM
- Thus, some SWM components can not be improved to be appropriate level
- LGUs can not accept further increase of T/F (tipping fees) associated with WTE

Suggestion

- Cost for appropriate SWM shall be estimated based on actual needs and prices and be reflected in 10-year SWM plan as well as budgetary plan of LGUs
- T/F shall be reasonably decided based on the estimated cost above

1. Tentative Observation and Suggestion

NIPPON KOEI
2

2. Misunderstanding on SWM-PPP including WTE

Observation

- “Through PPP scheme, the waste can be converted to money” is not true.
- Two types of PPP projects
 1. revenue generated and revenue sharable PPP project (such as toll road, power generation, water distribution projects)
 2. service fee payment-based PPP
- SWM project is 2nd type, where service fee (T/F) shall be paid by LGU to private entity

Suggestion

- In SWM-PPP projects, LGUs shall pay T/F in the project period to private investor to recover their initial investment.
- Total government expenditure through project period is mostly same in both government-own and PPP in BOT or DBO. (it is called as “Public Sector Comparator” In Japan)

3. Responsibility of LGUs

Observation

- The meaning of “primarily responsibility of LGU” in RA9003 are really understood by LGUs?
- Waste Treatment and Cleanness Law (1970) of Japan
 - “even if LG contract out the construction, O&M of SWM to private entities, LGU still have all responsibilities of it.”

Suggestion

- Any suspension of SWM is failure of LGU
 - private company failed to comply with environmental standard
 - bankrupt and cease operation
- All risks shall be removed in procurement of WTE project
 - Proper evaluation both technical and financial aspects
 - Avoidance/recovery plan before the start of SWM facility operation, so as to ensure non-stop operation of SWM
- LGUs shall continuously monitor performance of the WTE, while EMB regional office is in charge of monitoring too.

5. Solicited Approach based on SWM plan

Observation

- Difficulties for LGUs to evaluate unsolicited proposal without idea of “proper” development approach of WTE.

Suggestion

- LGUs to realize what SWM they need
- LGUs can specify and require what SWM they need by solicited approach
- Solicited approach for WTE to be considered, same like other public service infrastructure
- Waste Quality and Quantity:
 - LGUs must know its MSW stream and how much of waste, what kind waste they can supply to the WTE
- Scope of project:
 - LGUs to clarify components that LGU manages and private sector will be in charge of

4. Needs of technical expertise in LGUs

Observation

- No experts on WTE technology in LGUs
 - LGUs need expertise to evaluate proposed projects that sometimes misleading and unrealistic
- LGUs that don't have technical capability; they tend to outsource all SWM activities, usually to a single private company.
 - Too much reliance on one company has much risks such as:
 - private company may cease the operation by their discretion if project is no longer profitable,
 - To find out successor of operation in particular patented/complex facility is not possible in short time,
 - private company requests LGUs to increase processing cost (T/F) and LGU is compelled to agree it

Suggestion

- LGU shall be prepared to have technical capability
- To hire experienced WTE expert in other countries
- NSWMC/DENR to train/educate/support for WTE projects

6. Definition of waste category, 7. segregation in RA9003 8. Waste category in WACS

Observation

- IRR of RA9003,
 - In Rule VIII: “Waste segregation and collection shall be conducted at the barangay level specifically for **biodegradable/compostable** and **reusable/recyclable** wastes. The collection and disposal of **non-recyclable/non-recoverable** materials and special wastes shall be the responsibility of the city or municipality.”
 - In Rule IX: The requirement for the segregation; “Responsibility for sorting and segregation of **biodegradable** and **non-biodegradable** wastes shall be at the household level”
- Some terms in these provision are not clear
 - Difference between “**non-recyclable/non-recoverable**” and “**residual**”?
 - “**Residual**” waste generated in LGUs commonly contains not only “**non-recyclable/non-recoverable**” materials but also “**biodegradable**”, **reusable/recyclable**” material in case of neither appropriate segregation/recovery system nor sufficient demand in the local market of recyclables and compost

6. Definition of waste category, 7. segregation in RA9003 8. Waste category in WACS

Suggestion

- Definition of “residual waste”
 - “waste which can not be reduced, reused and recycled, in economically and/or technically, in the LGU’s waste treatment system including material recovery and utilization industries and other circumstances”
- LGUs to define **materials** classified into the residual waste in their SWM plan.
- LGUs understand the meanings and necessity of WACS for “residual waste” to consider how to control/manage/minimize their “residual waste”.
- Waste category in WACS shall be in **material** basis and not the **usage** basis so that treatment/recycling options by material can be studied.

10. Address to Environmental NGOs

Observation

- The environmental NGOs, they sometimes put all incineration technologies in one basket. When they hear burning, they are automatically against it.

Suggestion

- Program must be developed to educate the LGUs how to consult with the NGOs.

9. Accumulated data of solid waste quantity and quality

Observation

- LGUs do not have waste quantity and quality data
 - with sufficient period
 - with weekly, seasonal and annual fluctuations

Suggestion

- LGUs to have “at least” statistic quantity data of MSW disposal because SWM processing facility shall need the information of “target waste” quantity, in planning any facility such as WTE or MRF
- Waste category in WACS in continuous manner is also required to prepare appropriate project capacity.
- In addition, simple WACS result is not enough/usable.
- Study report which includes implemented period (season, time), detail sampling and analytical procedure, etc. should be available for technical analysis

11. Change of administration/Long-term WTE development plan

Observation

- Political risk (e.g. New elected government official might cause a change of decision) is the one of biggest risks for the private investor. It shall be taken by LGU side (and guaranteed by NG, etc.) for long-term contract.
- In case of QC, MPIC’s proposal was evaluated and agreed with previous administration, but not yet agreed with present Mayor. This affects city’s sanitation continuity plan as well as budget for MSWM.
- Similar change on the decision for WTE is observed for Cebu City due to change of city administration.

Suggestion

- LGUs to have a consistent long-term MSWM Plan including WTE development backed by LGUs’ budgetary plan
- Long term plan to be disclosed so that citizens, politicians and investors can be aware of it

Any Comments from members?



2nd ITWG for

Output 3: Enhancement of the National government's capacity of environmental monitoring for WTE project

3rd December 2020

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

1

1. Objectives and Activities of Output 3

- Objective: The enhancement of the National government's capacity of environmental monitoring for WTE project
- Specific activities
 - 3.1 Review the current capacity/activities** for sampling/analysis/QA/QC of Dioxins and Furans (D&F) in ambient air, emission gas and other media (Soil/Surface water/Sediments) in Central and Regional Offices of EMB
 - 3.2 Analyze gap** between the present capacity of the EMB Central Office and required capacity for proper sampling/analysis/QA/QC of D&F in ambient air, emission gas and other media (Soil/Surface water/Sediments) and formulate the training plan
 - 3.3 Prepare Standard Operation Procedures (SOP)** for sampling/analysis/QA/QC of D&F in ambient air and emission gas
 - 3.4 Conduct training of sampling/analysis/QA/QC** of D&F in ambient air and emission gas in EMB Central Office
 - 3.5 Prepare Sampling Plan (Design)** for the collection of D&F in ambient air
 - 3.6 Implement sampling/analysis/QA/QC** of D&F in ambient air and emission gas by EMB Central Office at existing SWM facilities based on SOP in output 3.3.

Contents of the Presentation (Output 3)

1. Objectives and Activities of Output 3
2. Outline of the Progress of Each Activities
 - a. Review the current capacity/activities and analyze gap
 - b. Formulate training plan based on the gap analysis
 - c. Training for formulating SOPs
3. Topics Related to Dioxin/Furan Measurement

2. Overview of the Progress of Each Activities

a. Review the current capacity/activities and analyze gap (3.1 & 3.2)

| Item | Key Findings |
|---------------------|--|
| Monitoring Planning | [Small gaps] Monitoring manuals for emission gas, ambient air and water has already been prepared, and manuals for sediment and soil are under preparation. |
| Sampling | [Some gaps] Isokinetic sampling is a key technique of emission gas; it can be conducted by Regional offices and AQMS. Some specific technique for D&F sampling (i.e. contamination control and preparing capturing/ adsorbent materials) need to be enhanced. |
| Pretreatment | [Some gaps] ERLSD has got various techniques through the POPs analysis, but some specific technique (especially for contamination control) for D&F pretreatment need to be enhanced. |
| Analysis | [Some significant gaps] Operation verification of GC/HRMS is still undergo. Operation of software (DIOK: D&F analysis program) need to be enhanced. Experience of regular/ routine maintenance of GC/HRMS is still not enough particularly for the case of the local service provider. |

Continue to next slide

2. Overview of the Progress of Each Activities

| Item | Key Findings |
|--------------------------|--|
| QA/QC | [Some gaps] POPs analysis has been conducted appropriately, but since the D&F sampling/ monitoring is not frequent, QA/QC method for D&F analysis is still to be strengthened |
| Common items (SOP, etc.) | [Some gaps] Since the D&F sampling/ monitoring is not frequent, existing SOP for D&F analysis needs refinement. The existing SOP was prepared not only based on EPA method, but also based on the knowledge obtained from the training in NMI Australia. |
| Continuity of monitoring | [Some gaps] In case the GC/HRMS malfunctions, lead time will be much longer because there is only one GC/HRMS. Ability of each staff is very high, but the number of staffs might not be sufficient if more frequent D&F monitoring will be conducted. |

Continue to next slide

2. Overview of the Progress of Each Activities

b. Formulate training plan based on the gap analysis (3.2)

| Item | Training Plan (Proposal from JET) |
|--|--|
| Prepare SOPs | JET reviewed the existing SOP (based on EPA Method 1613, provided by ERLSD) and sent some advices which included some recommendations for developing SOPs. Based on the advices, ERLSD will prepare SOPs for stack gas and ambient air analysis, then JET will review them. As for sampling, manuals are already prepared by AQMS, and sampling works are implemented without problems. Thus, existing manuals can be referred/ utilized for sampling SOPs. JET will recommend specific information which should be added for D&F sampling (i.e. preparation and preservation of capturing/adsorbent materials), and ERLSD will prepare supplemental documents for the existing manuals. |
| Conduct training of sampling, analysis and QA/QC of Dioxins and Furans | Stack gas sampling training: ERLSD will join stack gas sampling training organized by AQMS and acquire skills for isokinetic sampling (the most important technique). For specific technique for Dioxin/ Furan sampling, ERLSD is able to learn from supplier of stack sampler. JET will provide some knowledge for contamination control based on Japanese experiences. |

Continue to next slide

2. Overview of the Progress of Each Activities

| Item | Training Plan (Proposal from JET) |
|--|--|
| Conduct training of sampling, analysis and QA/QC of Dioxins and Furans | Ambient air sampling training: ERLSD will ask AQMS to learn about on-site calibration and routine maintenance. JET will provide some knowledge for contamination control based on Japanese experiences. Operation verification of GC/HRMS [MOST URGENT]: Some verification activities as required by EPA Methods 1613, TO-9A and Method 23 needs to be prioritized. JET will review the results once ERLSD sends these to JET. Analysis training: Basically, the training will be conducted by spike and recovery test. Blank test will be included in the training. |
| Prepare Sampling Plan (Design) for ambient air samples | JET will recommend ambient air sampling plan of baseline/ follow-up survey for WTE facilities, considering laws and policies for EIA in Philippine and experiences of Japan. |

Continue to next slide

2. Overview of the Progress of Each Activities

| Item | Training Plan (Proposal from JET) |
|--|--|
| Implement sampling, analysis and QA/QC of Dioxins and Furans | For ambient air: Sampling will be conducted rooftop of DENR-EMB laboratory, by considering utility like electricity and accessibility for staff. For stack gas: If possible, sampling will be conducted at cement kiln facility at the same time of its annual monitoring. To realize the sampling, AQMS/ regional office's cooperation is necessary. |



2nd ITWG

Output 4: Enhancement of The National Government's Capacity to identify issues and provide suggestions/recommendations for other SWM technologies other than WTE

3rd December 2020

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

1

Agenda

1. **Outline of Output 4**
2. Review the activity 4-1 and the activity 4-2
3. Review the activity 4-3
4. How to proceed with future activities of output4

Agenda

1. Outline of Output 4
2. Review the activity 4-1 and the activity 4-2
3. Review the activity 4-3
4. How to proceed with future activities of output4

1. Outline of Output 4

Output 4

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

Specific activities

- 4.1 Grasp the current situation by National SWM strategy and 10 year SWM plan in the target LGUs.
- 4.2 Identify the current issues for other SWM technologies in the target LGUs.
- 4.3 Collect the information of "Good practice/Good technology" of other SWM technologies in Japan/third world countries.
- 4.4 Summarize and provide suggestion/recommendation to improve utilization of other SWM technologies to target LGUs.
- 4.5 Seminar for disseminating suggestion/recommendation is held.

1. Outline of Output 4

Schedule of activities

| Activities | 1 st Year Mar/'19 - Mar/'20 | 2 nd Year Apr/'20 - Mar/'21 | 3 rd Year Apr/'21 - Mar/'22 |
|------------------|---|--|--|
| 4.1 | | | |
| 4.2 | | | |
| 4.3 | | | |
| 4.4 | | | |
| 4.5 | | | |
| Sub-Group MTG | 13-Feb ★ | 24-Jun 3-Sep ★★★ | |
| Main activity | <ul style="list-style-type: none"> Grasp the current situation and identify the current issues by National SWM strategy and 10 year SWM plan in the target LGUs. | <ul style="list-style-type: none"> Collect the information of "Good practice/Good technology" of other SWM technologies in third countries. Summarize and provide suggestion/recommendation to improve utilization to target LGUs. | <ul style="list-style-type: none"> Seminar for disseminating suggestion/recommendation is held. |

1. Outline of Output 4
2. Review the activity 4-1 and the activity 4-2
3. Review the activity 4-3
4. How to proceed with future activities of output4

Activity 4-1 and 4-2

- Review of 10 years plan of LGUs regarding other technologies than WTE
- Observations on the present situation of SWM of target LGUs

Challenges for SWM in target LGUs

1. Budget of Waste Management

- With increasing residents and their waste generation, how to secure the budget for SWM?
- Challenges to collect the fee; e.g. How to agree with people for appropriate and reasonable rate of garbage fee
- Planned budget for SWM Plan can be allocated by/from central government? How can the LGUs request increase of budget allocation?

Next Step

- Research methods on obtaining budget and funding by/in other countries
- Analyze the suitable method to obtain funding for each LGU

2. Waste Generation Quantity and Quality

- Analysis and evaluation of the waste data (generation trend, physical composition, chemical composition etc.) by LGUs are still a challenge

Next Step

- Refer to the WACS methods and data management of/in other countries

2. Review the activity 4-1 and 4-2

Challenges for SWM in target LGUs

3. Collection and Transportation of Waste

- **Incomplete segregation and separate collection**
- Next Step**
- Research good examples of segregation and separate collection of other countries
 - Analyze the suitable segregation methods, including type of wastes in segregation, for each LGU

4. Intermediate treatment facility /3R

- **Segregation does not make sense without recycling including recycling facilities.**
 - **There is no budget and land for recycling facility.**
- Next Step**
- Research the method of recycling for each kind of waste in LGU
 - Research the scheme of implementation; e.g. subsidy from national government, PPP and selling a by-product
 - Analyze the suitable recycling facility and implementation scheme for each LGU

2. Review the activity 4-1 and 4-2

Challenges for SWM in target LGUs

5. Landfill

- **Necessity of the infrastructure rehabilitations for waste overflow and rough road**
- Next Step**
- Identify the need for rehabilitation or new landfill

6. Education of Waste Management

- **Insufficient understanding of responsibilities of residents for SWM**
- Next Step**
- List the items for SWM that should be understood by residents; e.g. reduce the waste, segregation, collection of garbage fee
 - Research the IEC method for the items listed above
 - Analyze the suitable method for each LGU

Agenda

1. Outline of Output 4
2. Review the activity 4-1 and the activity 4-2
3. **Review the activity 4-3**
4. How to proceed with future activities of output4

3. Review the activity 4-3

Allocation of the Activity 3

| Item | Research for "Good practice/Good technology" | The Organization in Charge |
|---------------------------------------|--|----------------------------|
| Budget | <ul style="list-style-type: none"> • methods on obtaining budget and funding by/in other countries | JET |
| Waste Generation Quantity and Quality | <ul style="list-style-type: none"> • WACS methods and data management in other countries | DOST |
| Collection and Transportation | <ul style="list-style-type: none"> • Good examples of segregation and separate collection of other countries | Cebu City |
| Intermediate treatment facility /3R | <ul style="list-style-type: none"> • Method of recycling for each kind of waste in LGU • The scheme of implementation; e.g. subsidy from national government, PPP and selling a by-product | DOST |
| Landfill | <ul style="list-style-type: none"> • Identify the need for rehabilitation or new landfill | Davao City |
| Education (IEC) | <ul style="list-style-type: none"> • List the items for SWM that should be understood by residents • The IEC method for the items listed above | Quezon City |

3. Review the activity 4-3

Good Practice of Collection and transportation

| 1. Segregation | Station collection |
|---|--------------------|
| <ul style="list-style-type: none"> Decide the point of collecting garbage in advance and collect specific waste on a fixed day. Since unsorted garbage is not collected, the accuracy of separation of residents increases. Recyclable products are divided into cans, bottles, PET bottles, Styrofoam, and cardboard. For recyclable product, separation boxes need to be installed. | |



3. Review the activity 4-3

Good Technology of Intermediate treatment facility /3R



URENCO 11 RPF Facility



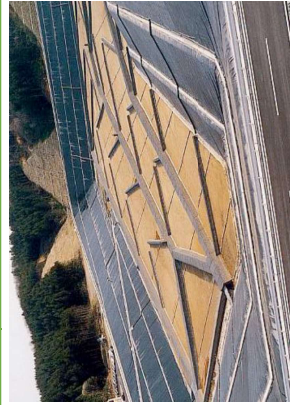
RPF pellets

| Title | URENCO Refuse Paper and Plastic Fuel (RPF) Hanoi, Vietnam |
|---------|---|
| Outline | <ul style="list-style-type: none"> Refuse paper and plastic fuel (RPF) is a subclass of RDFs and serve as a compacted burning source with high calorific value Calorific value can be adjusted by changing the mixing ratio of waste paper and waste plastic. RPF's ash percentage is less than 6%(Coal's ash percentage is 12-15%) RPF production led by URENCO company in Hanoi together with Ichikawa Kankyo Engineering (IKE) cooperation in Japan. Aims to produce over 12000 T of RPF pellets Suitable technology for industrial waste like those from paper factory because the waste is already segregated. Refuse paper and plastics from household wastes must be segregated and collected separately |

3. Review the activity 4-3

Good Technology of Landfill

| Title | Surface Liner Facility |
|---------|---|
| Outline | <ul style="list-style-type: none"> Vertical piping system placed in the landfill to collect gas for treatment or productive use as an energy source; <p>Positive Point:</p> <ul style="list-style-type: none"> Allows for the escape and avoid build-up of methane and other gases in the landfill. <p>Negative Point:</p> <ul style="list-style-type: none"> Regular inspection of pipes (leachate collection and gas vents) to ensure efficiency of system. Prone to obstruction and damage. |



| Title | Surface Liner Facility |
|---------|---|
| Outline | <ul style="list-style-type: none"> A system of clay layers and/or geosynthetic membranes used to contain leachate. <p>Positive Point:</p> <ul style="list-style-type: none"> Reduce or prevent contaminant flow to groundwater. <p>Negative Point:</p> <ul style="list-style-type: none"> May be prone to damage or breakage due to passage of equipment or other factors. |

3. Review the activity 4-3

Good Practice and Technology Case study (Booklet and Web site)

Booklet Sample

| 1. Scheme | |
|------------------------|-----------------------|
| Title of Good Practice | Country, (Prefecture) |
| Target waste | XXXX |
| Start information | XXXX |
| Commencement date | 199X/X |
| Initial cost | XXXX |
| Operation cost | XXXX |
| Capacity | XXXX City |
| Area | XXXX m2 |
| Outline | XXXX |
| Good Practice Point | XXXX |



Updated Project Schedule and Activities (Proposal)

3rd December 2020

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

1

Addition in the TCP activities

Output 1 (as additional activity)

Review and modification of Sanitary Landfill regulations considering possible disposal of incineration ash (Activity 1-8)

1. Background
 - Nature of residues from WTE facility is different from usual municipal wastes
 - These residues may be disposed of at the sanitary landfills
 - Required function and environmental standards for the landfill must be reviewed and amended as appropriate to accept residues from WTE
2. Actual works
 - Review of present operation of sanitary landfill
 - Review and suggestion on modification of requirement in terms of:
 - facility [function],
 - management/operation,
 - Environmental aspects such as effluent standards of leachate
3. Expected person in charge:
 - SWMD, HWMS with supports by JET

1. Reinforcements and addition in the TCP activities

1. Activity 1-8 (addition)
 2. Activity 2-6
 3. Activity 3-4
2. Updated schedule of the
 1. Extension of TCP period
 2. Activities in 2021

Nature of WTE residue, Protests to the operation of sanitary landfill

- Heavy metal contents and their accumulation → to be considered in standards of effluent
- Facility function, operation, management → to be adjusted for receiving and disposing WTE residues
- Because of concern on leakage of heavy metals in water bodies, many conflicts between general people and LGUs (landfill operators) were observed in Japan

Activity 2-6 of Output 2

Support to SWM PPP projects to clarify responsibilities of LGUs under PPP scheme

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

1. Background
 - SWM PPP projects other than WTE are also promoted by the Governments
 - PPC take important role to support LGUs to develop PPP project
 - PPC faced difficulties to evaluate the SWM technologies in some cases
 - SWMD to know what kind of SWM PPP project and how these projects are developed.
2. Actual works
 - Review SWM PPP projects to check responsibilities of LGUs under PPP scheme
 - Evaluate SWM PPP projects in terms of technology, finance and social/environment
 - * PPP projects discussed in LGUs other than the target LGUs can be selected
 - * SWM technologies can be WTE technologies other than waste combustion
3. Expected person in charge
 - SWMD, PPC with support by JET

Activity 3-4 of Output 3

Reinforce software operation of Dioxin/Furans analysis equipment

Activity3-4: Conduct training of sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas in central EMB.

1. Background
 - DENR has procured the equipment of Dioxin/Furans.
 - The software to operate the equipment is developed and pre-installed which is a specific, tricky and requires experience.
 - ERLSD has faced the difficulties in its software operation
2. Actual works
 - Incorporate the contents of software operation in the training
3. Expected person in charge
 - ERLSD with support by JET

Activity 2-6 of Output 2

Support to SWM PPP projects to clarify responsibilities of LGUs under PPP scheme

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

1. Background
 - SWM PPP projects other than WTE are also promoted by the Governments
 - PPC take important role to support LGUs to develop PPP project
 - PPC faced difficulties to evaluate the SWM technologies in some cases
 - SWMD to know what kind of SWM PPP project and how these projects are developed.
2. Actual works
 - Review SWM PPP projects to check responsibilities of LGUs under PPP scheme
 - Evaluate SWM PPP projects in terms of technology, finance and social/environment
 - * PPP projects discussed in LGUs other than the target LGUs can be selected
 - * SWM technologies can be WTE technologies other than waste combustion
3. Expected person in charge
 - SWMD, PPC with support by JET

Activity 3-4 of Output 3

Reinforce software operation of Dioxin/Furans analysis equipment

Activity3-4: Conduct training of sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas in central EMB.

1. Background
 - DENR has procured the equipment of Dioxin/Furans.
 - The software to operate the equipment is developed and pre-installed which is a specific, tricky and requires experience.
 - ERLSD has faced the difficulties in its software operation
2. Actual works
 - Incorporate the contents of software operation in the training
3. Expected person in charge
 - ERLSD with support by JET

Updated schedule of the Project

Extension of the project period (proposal)

- Factors of extension
 - Delay in commencement of the project (formulation of JCC/ITWG, appointment of ITWG members)
 - Influence of pandemic of COVID-19
 1. WTE projects suspended in LGUs
 2. Difficult close communication for activities between CPs and JET
 3. Delayed activities such as seminar(s), preparation for trainings
 - Reinforcement and addition in activities are desired

Updated schedule of the Project

Extension of the project period (proposal)

- Extension is necessary to ensure outcomes of the TCP
- JICA HQ understands (prior consultation):
 1. Necessity of extension of the TCP period
 2. Reinforce/addition will contribute the TCP outcome
- Modification of the project period and activities requires approval by JCC.

TCP activities in 2021

- Continuation of on-going project activities
 - * updated project schedule is distributed
- Meeting
 1. JCC: 1time in May
 2. ITWG meeting: 4times in Feb, May, Aug, Nov)
 3. ITWG Subgroup meeting for Project Outputs:
once a month, depending on the progress of activities
- Event
 1. Training in Japan: November
(Note: 2times → 1time in project period)
 2. Technology dissemination Seminar: 1st QTR

Thank you for your attention!

Tentative Project Design Matrix

Project Name: The Project for Capacity Development on Improving Solid Waste Management through Advanced/Innovative technologies

Duration: 2019.3–2022.12(3 years)

Ver.2 (tentative)

| Narrative Summary | Objectively Verifiable Indicators | Means of Verification | Important Assumption |
|--|--|--|---|
| <p><u>Overall Goal</u> Improvement of Philippine SWM system through the adoption of WTE and other SWM technologies</p> | <p>1. The outputs of the Project are utilized by more than one LGU. 2. Recommendation by the Project is reflected in the National SWM strategy (2023-28). 3. Result of dioxins analysis is reported in the annual report of EMB.</p> | <p>Interview with stakeholders National SWM strategy (2023-28)</p> | |
| <p><u>Project Purpose</u> National government and target LGUs' capacity for improving solid waste management utilizing WTE and other SWM technologies is enhanced.</p> | <p>1. Recommendations are made for the National SWM strategy (2023-28) based on the Project's output. 2. Formulation of WTE project is promoted in target LGUs. 3. The dioxins analysis is periodically implemented.</p> | <ul style="list-style-type: none"> ● Report of the Project ● Report of the Seminar ● Interview with C/Ps | <ul style="list-style-type: none"> ● The National and Local governments' policy and laws/ordinance for promoting WTE in waste management will not change drastically |
| <p><u>Outputs</u> 1. National government's capacity for supporting and coordinating of LGUs' WTE project is enhanced.</p> | <p>1-1. BAT/BEP guideline and Technical Standard for WTE facility (including Standard for O&M of WTE facility) is endorsed by the Project to DENR-EMB for adoption. 1-2. Manual for planning, evaluation, formulation and Supervision of WTE project is endorsed by the Project to DENR-EMB for adoption. 2-1. Updated 10 year SWM plan which reflected the waste volume reduction target and plan is approved by NSWMC in each Target LGU. 2-2. Compiled experiences of target LGUs' WTE project in PPP scheme are reported to NSMWC.</p> | <ul style="list-style-type: none"> ● Report of the Project ● BAT/BEP guideline ● Manual for evaluation, formulation and supervision for WTE project | <ul style="list-style-type: none"> ● The counterpart personnel will not change or transfer drastically during the implementation of the Project |
| <p>2. Target LGUs' capacity for Planning, Evaluation, Formulation and Supervision of WTE project is enhanced.</p> | <p>3-1. Standard Operation Procedure (SOP) for monitoring, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas is endorsed by the Project to DENR-EMB for adoption. 4-1. Report of identified issues and recommendation/suggestion is prepared.</p> | <ul style="list-style-type: none"> ● Interview with C/Ps ● Report of the Project ● Updated 10 year SWM plan of each LGU ● Report of the Project ● SOP ● Report for trainings | <ul style="list-style-type: none"> ● Target Group of the Project will secure the enough budget for implementing of the Project |
| <p>3. National government's capacity of environmental monitoring for WTE project is enhanced.</p> | | | |
| <p>4. National Government's and target LGUs' capacity to identify issues and provide suggestion/recommendation for other SWM technologies than WTE is enhanced</p> | | | |

| Activities <Common> | Inputs | |
|--|---|---|
| <ul style="list-style-type: none"> • Capacity for proper solid waste management through WTE and other SWM technologies of Target group is assessed at the beginning and end of the Project. • C/P trainings in Japan and/or third country is implemented. • Seminar/workshop to share the Project's output is held. <p>Output 1. National government's capacity for supporting and coordinating of LGU's WTE project is enhanced.</p> <p>1-1. Prepare BAT/BEP guideline based on the information of good practices and technologies of WTE in neighboring countries.</p> <p>1-2 Study policies and mechanism to promote WTE in neighboring countries including cost sharing scheme.</p> <p>1-3 Seminar to disseminate the WTE technology is held.</p> <p>1-4 Prepare technical standards for WTE facility including for installation and O&M of WTE facility referring the information from neighboring countries.</p> <p>1-5 Prepare manual for management of incineration ash and fly ash referring the information in neighboring countries.</p> <p>1-6 Prepare manual for planning, evaluation, formulation and supervision for WTE project based on the information from Output 2 and neighboring countries, including evaluation criteria of EMB for 10 year SWM plans.</p> <p>1-7 Illustrate model procedures to introduce WTE facility in accordance with WTE guidelines including environmental and social aspects.</p> <p>1-8. Review and update the existing regulations of sanitary landfill for municipal solid waste where incineration ash will be disposed of.</p> <p>Output 2. Target LGUs' capacity for Planning, Evaluation, Formulation and Supervision of WTE project is enhanced.</p> <p>2-1. Review current situation for introducing WTE in each target LGUs.</p> <p>2-2. Clarify the current waste flow/amount, set the target of reducing volume carried to final disposal site and estimate amount of solid waste through WTE facility and other method in the 10 year SWM plan of target LGUs.</p> <p>2-3. Evaluate the land use plan for WTE projects.</p> <p>2-4. Analyze and verify the candidate WTE project selected from the existing FS, unsolicited/solicited proposal and others.</p> <p>2-5. Define the points and issues to be addressed for formulating WTE project.</p> | <p>Japanese Side</p> <ul style="list-style-type: none"> a. Assignment of Experts Long-term/Short-term Expert b. Equipment (if necessary) c. C/P Trainings | <p>Philippines Side</p> <ul style="list-style-type: none"> a. Assignment of Counterpart Personnel b. Provision of office space and other necessary facilities c. Allocation of enough budget including operational cost for the Project |

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| <p>2-6 Define the proper responsibility (including financial responsibility) of LGU in promoting WTE project under PPP scheme.</p> <p>2-7. Formulate the technical specifications of WTE facility for each target LGU.</p> <p>2-8. Define the points and issues to be addressed for supervising WTE project.</p> <p>Output 3. National government's capacity of environmental monitoring for WTE and other SWM technologies is enhanced.</p> <p>3-1. Review the current capacity/activities for monitoring/analysis/QA/QC of Dioxins and Furans in ambient air, and other media (Soil/Surface water/Sediments) in central and regional EMB.</p> <p>3-2 Analyze gap between the present capacity of the central EMB and required capacity for proper monitoring/analysis/QA/QC of Dioxins and Furans in ambient air, source emission gas and other media (Soil/Surface water/Sediments) and formulate the training plan.</p> <p>3-3. Prepare Standard Operation Procedure (SOP) for sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas.</p> <p>3-4 Conduct training of sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas in central EMB.</p> <p>3-5 Prepare Sampling Plan (Design) for the collection of Dioxins and Furans in ambient air samples.</p> <p>3-6 Implement sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas by central EMB at existing SWM facilities based on SOP in 3-3.</p> <p>Output 4. National Government's and target LGUs' capacity to identify issues and provide suggestion/recommendation for other SWM technologies than WTE is enhanced</p> <p>4-1. Grasp the current situation by National SWM strategy and 10 year SWM plan in the target LGUs.</p> <p>4-2. Identify the current issues for other SWM technologies in the target LGUs.</p> <p>4-3. Collect the information of "Good practice/Good technology" of other SWM technologies in Japan/third countries.</p> <p>4-4. Summarize and provide suggestion/recommendation to improve utilization of other SWM technologies to target LGUs.</p> <p>4-5. Seminar for disseminating suggestion/recommendation is held.</p> | | | <p>Pre-Conditions All stakeholders including head(mayor) of local target group fully and actively cooperate and participate to the Project</p> |
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***Note:**

1. All target LGUs are complying the process which the WTE guidelines indicate though, the progress of WTE projects are different in each target LGU. Assess the actual situation and progress in each target LGU along with the activities for Output 2 at the beginning of the project.
2. Activity 1-1 and 1-3 in Output 1 and activity 2-1 and 2-2 in Output 2 shall cover various kinds of WTE technology. Target WTE technology in other activities (1-2, 1-4 to 1-6 and 2-3 to 2-8) shall be an appropriately controlled combustion with power generation because this is the technology discussed in target LGUs for adoption in order to treat their huge volume of solid waste.
3. "Other SWM technologies" refer to technologies on "Recycling /Composting /Waste segregation/Improving MRF operation"

UPDATED ACTIVITIES SCHEDULE

2-Dec-20

| Output1 | Activity | Status | Completion |
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| National government's capacity on supporting and coordinating LGUs' WTE projects is enhanced. | 1-1: Prepare Best Available Technique (BAT) / Best Environmental Practice (BEP) guideline | Ongoing | March. 2021 |
| | 1-2: Study policy & mechanism to promote WTE projects | Ongoing | March. 2021 |
| | 1-3: Hold seminar to disseminate WTE technology | Not started yet | January 2021, June. 2022 |
| | 1-4: Prepare draft technical standards for WTE facility focused on waste incineration with power generation | Ongoing | October. 2020 |
| | 1-5: Prepare manual for management of bottom & fly ash discharged from WTE facility | Ongoing | March. 2021 |
| | 1-6: Prepare manual for planning, evaluation, formulation & supervision for WTE projects, and prepare evaluation criteria for EMB on 10-year SWM plans | Not started yet | August. 2022 |
| | 1-7: Illustrate model procedure to introduce WTE facility | Not started yet | August. 2022 |
| | 1-8: Review and update the existing regulations of sanitary landfill for municipal solid waste where incineration ash will be disposed of. | Additional (Not started yet) | October. 2021 |
| Output2 | Activity | Status | Deadline |
| Target LGUs' capacity on planning, evaluation, formulation & supervision of WTE projects is enhanced. | 2-1: Review current situation on introducing WTE facilities in the target LGUs | Done | July. 2019 |
| | 2-2: Clarify current waste flow & amount, set target on waste reduction in the existing SWM 10-year plans | Done | April. 2020 |
| | 2-3: Evaluate LGUs' land use plan for WTE projects | Done | August. 2020 |
| | 2-4: Analyze & verify candidate WTE projects selected from the existing F/S, unsolicited/solicited proposals | Done | April. 2020 |
| | 2-5: Define points & issues to be addressed for formulating WTE projects in the target LGUs | Ongoing | June. 2022 |
| | 2-6: Define proper responsibility of the target LGUs in promoting WTE projects under PPP scheme | Not started yet | August. 2021 |
| | 2-7: Formulate technical specification of WTE facilities in each target LGU | Not started yet | July. 2022 |
| | 2-8: Define points & issues to be addressed for supervising WTE projects in the target LGUs | Not started yet | June. 2021 |
| Output3 | Activity | Status | Deadline |
| National government's capacity on environmental monitoring for WTE projects is enhanced. | 3-1: Review current capacity & activities on monitoring, analysis & QA/QC of Dioxins and Furans (DXNs) in the central & regional EMBs | Done | September. 2019 |
| | 3-2: Analyze gap between present and required capacity of the central EMB Lab., and formulate training plan | Done | May. 2020 |
| | 3-3: Prepare Standard Operation Procedures (SOP) for sampling, analysis & QA/QC of DXNs in ambient air & emission gas | Ongoing | March. 2022 |
| | 3-4: Conduct training on sampling, analysis & QA/QC in ambient air & emission gas for the central EMB | Not started yet | October. 2021 |
| | 3-5: Prepare sampling plan (design) for DXNs in ambient air | Not started yet | October. 2021 |
| | 3-6: Implement sampling, analysis & QA/QC of DXNs in ambient air & emission gas | Not started yet | October. 2022 |
| Output4 | Activity | Status | Deadline |
| National Government's & target LGUs' capacity to identify issues & provide suggestion/recommendation for SWM technologies other than WTE is enhanced. | 4-1: Grasp current situation by studying National SWM strategy & the 10-year SWM plans in the target LGUs | Done | May. 2019 |
| | 4-2: Identify current issues for other SWM technologies in the target LGUs | Done | February. 2020 |
| | 4-3: Collect information on "Good practice & Appropriate technology" of other SWM technologies in Japan & the third countries | Ongoing | February. 2021 |
| | 4-4: Summarize & provide suggestion & recommendation to improve utilization of other SWM technologies in the target LGUs | Not started yet | November. 2021 |
| | 4-5: Hold seminar to disseminate suggestion & recommendation | Not started yet | June. 2022 |

PROJECT ACTIVITY: 2nd Inter-agency Technical Working Group (ITWG) Meeting
DATE/TIME : 3 December 2020, 1:00PM-5:00PM (Philippine Time)
VENUE : Video Conference through Microsoft Teams
MATERIALS : <https://bit.ly/Filesfor2ndITWGMtg>

| Agenda Topics | Issues/Discussions/Actions | Comments/Agreements/ Timelines | Required Actions/Responsible Agency/Person |
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| <p>1.) Opening/ Welcoming Remarks (EMB OIC Director William P. Cuñado)</p> | <ul style="list-style-type: none"> ● On behalf of Director William P. Cuñado, EMB-OIC Assistant Director Vizmindia A. Osorio, stood as chairman of the meeting, and commenced the ITWG Meeting with quorum reached and all presenters present. ● In her opening/welcome speech, she recognized the importance of solid waste management in solving pressing problems in the country, and how DENR can solve this problem through its various programs, and this project. She emphasized the need for inter-agency cooperation in the success of this project. | | |
| <p>2.) Discussion of Objectives of the Meeting & Acknowledgement of the ITWG Members and Sub-group Members (Ms. Elvira S. Pausing)</p> | <ul style="list-style-type: none"> ● Ms. Pausing started her presentation by saying that ITWG meetings for 2020 have been reduced from a supposed quarterly frequency, to just twice this year due to delays brought by the COVID-19 pandemic. ● She presented and discussed the objectives and purpose of the meeting, and the agenda for today's ITWG meeting with a brief introduction of what each presentation will be discussed. | | |

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| <p>3.) Project Overview and Basic Elements of the Technical Cooperation Project (TCP) (Mr. Takahiro Kamishita)</p> | <ul style="list-style-type: none"> ● Lastly, meeting participants were acknowledged one by one to introduce each one to the rest of the panel. ● Upon presentation of the objectives/purposes and acknowledgement of participants, Ms. Raquel Rosario Reyes, the assigned emcee for the ITWG meeting, turned-over the floor to the Chairman and Co-Chairman of the ITWG meeting to purposely preside the meeting. ● Ms. Ruby de Guzman from DOE-REMB temporarily assumed the Chairmanship due to the non-availability of both designated officials from EMB and DOE. | | |
| | <ul style="list-style-type: none"> ● Mr. Kamishita discussed the project outline-covering the project timeline, project design, and the JCC and ITWG structure that supports the implementation of the TCP. ● He also touched on in his discussion pressing SWM issues that JET is looking into: WTE Bills and the urgent problem of plastic debris. JET believes that the Philippines' problem with plastic can be aided with the establishment of WtE facilities that will be made possible with this TCP. ● Mr. Kamishita ended his presentation with discussing SB 1789 and how he hopes the TCP will be harmonized with this bill, with the help of the support of the member agencies, as it reinforces the objective of the project. | | |

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| <p>4.) Updates on the Implementation of the TCP for Capacity Development on Improving Solid Waste Management (SWM) through Advanced/Innovative Technologies (Ms. Roxanne Barcnas on behalf of Ms. Maria Delia Cristina Valdez)</p> | <ul style="list-style-type: none"> ● Ms. Roxanne Barcnas presented the general updates of the project on behalf of Ms. Delia Valdez who was unable to join today's meeting. ● The targets for each activity under each of the four outputs were juxtaposed with the accomplishments and the status of ongoing activities. ● The presentation ended with the summary of meetings held for 2020, noting that a lot of scheduled meetings have been cancelled and deferred to a later date due to the COVID-19 pandemic. | <ul style="list-style-type: none"> ● Ms. Ruby De Guzman asked about the MOU signing of the 3 target LGU's. <ul style="list-style-type: none"> ○ Ms. Nica Obmerga of FASPS replied that discussions between FASPS, PMO, JICA and JET have been facilitated, where the MOU has been revised guided by the comments of the participants in the MOU meeting. She mentioned that a more thorough update will be discussed later on in the meeting. ● Mr. Christian Perez of JICA Philippines raised a comment on the presentation pertaining to an outstanding request for information from JICA (page 19: Approved by JICA- paperwork is yet to be finalized). <ul style="list-style-type: none"> ○ This item pertains to the request of JET to enrich some activities and add additional activities for the TCP. Mr. Kamishita proposed a modification to this item, clarifying that paperwork has yet to begin because these additions will still have to be approved by ITWG and JCC first. | <p>*discussed in Agenda item 8</p> <ul style="list-style-type: none"> ● [For PMO] Modification of presentation to reflect that there is no pending paperwork in JICA since the request to add more activities for the project has to be approved first in the ITWG and JCC meetings. |
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| <p>5.a) Presentation on the Detailed Updates of the Major Activities and Accomplishments per Project Output:</p> <ul style="list-style-type: none"> - Output 1: Preparation of BAT/BEP Guidelines (Mr. Satoshi Higashinakagawa) | <ul style="list-style-type: none"> ● Mr. Higashinakagawa discussed the methodology of how the BAT/BEP information has been collected, and the plan to release a survey, endorsed by DENR, to complement the gathered information. ● He presented a sample analysis of the BAT/BEP data that has already been collected. He emphasized that the completeness and accuracy of the information that will be gathered through this BAT/BEP activity will be critical in finding the specifications of the WtE facility that is most apt for the Philippine setting. Moreover, it is important that the LGUs are heavily involved in the developing process of their WTE project. | <ul style="list-style-type: none"> ○ Mr. Kamishita mentioned that a preliminary meeting has been conducted with JICA Headquarters and that the said additional activities under the project have been understood and agreed in principle. | |
| <p>5.b) Presentation on the Detailed Updates of the Major Activities and Accomplishments per Project Output:</p> <ul style="list-style-type: none"> - Output 1: Preparation of Technical Standards for WtE Facility on Waste Incineration & Power Generation (Mr. Makoto Kosaka) | <ul style="list-style-type: none"> ● Mr. Kosaka prepared a recorded presentation to facilitate the discussion of the updates on Activity 1-4. ● The presentation began with the review of the background of the activity- for the purpose of providing EMB with a set of technical standards that will be used in | <p>[from open forum] Ms. Joan Flores of EMB asked if under the proposed activity under OP1, the review and modification of the SLF regulation, if it refers to the categorized disposal facility for MSW, or the Category C disposal facility for treated incineration ash.</p> | |

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| | <p>managing WtE facilities in the Philippines.</p> <ul style="list-style-type: none"> ● Mr. Kosaka presented a brief summary of the technical standards incorporated in the MC, and a table detailing the comments of the OPI subgroup members on the working draft. ● Due to time constraints, he only identified some items that he wished to be discussed in this meeting <p><u>Title</u></p> <ul style="list-style-type: none"> - Changing to “Appropriately Controlled Combustion” instead of “Incineration” | <ul style="list-style-type: none"> - Mr. Kamishita replied that JET is currently looking into reviewing the SLF guidelines, and discussed the details of this additional activity in his proposal presentation in Agenda item 7 <p>[from open forum]</p> <ul style="list-style-type: none"> ● Mr. Gilbert Kintanar of NEDA wants to clarify why there is a hesitation in using “incineration” if the same term is already being used in SB 1789. ● Mr. Kamishita reviewed that the term incineration was requested to be replaced by Engr. Esguerra of DOST to address the concern of social acceptability. Engr. Esguerra added that though the term “incineration” is already being used in SB 1789, it is still only a bill now and not yet effective. ● From the 6th SG Meeting for OPI, the outstanding proposal was to find an alternative term to incineration, and JET opted to use “appropriately controlled combustion” which was the term used in the Records of Discussions of the TCP. ● Mr. Kamishita proposed to keep the term “incineration” and asked if the ITWG members if they are amenable to that <ul style="list-style-type: none"> ○ Mr. Kintanar clarified that any term is acceptable, for as long as it is defined | |
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| | | <p>accordingly in the terms in the MC.</p> <ul style="list-style-type: none"> • Ms. Momoko Otsuka asked where the MC should be endorsed- JCC or ITWG for approval, and if there is still room for revision once approved by ITWG. <ul style="list-style-type: none"> ○ Ms. Pausing replied by saying that this MC has to be approved by ITWG members in today's meeting, that will determine if the MC will be endorsed to JCC. ○ Ms. Ruby De Guzman discussed that the Memorandum Circular has to be reviewed more thoroughly by the ITWG members first prior to endorsement to JCC. ○ Ms. Pausing replied by saying that the MC has already been presented, discussed, and opened for comments to the OPI subgroup members. ○ Ms. De Guzman deferred giving her endorsement to the Technical Standards, and proposed to solicit more comments first from ITWG members. | <ul style="list-style-type: none"> • Pending endorsement of Draft Technical Standards for presentation to JCC. ITWG members are expected to give comments on the draft provided, to allow JET to incorporate their comments in the revision. <ul style="list-style-type: none"> • In the interest of time, a separate meeting between PMO and JET to clarify the strategy to finalize MC. |
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| <p>5.c) Presentation on the Detailed Updates of the Major Activities and Accomplishments per Project Output:</p> <ul style="list-style-type: none"> - Points and issues to be addressed for formulating WTE project in target LGUs based on the analysis on the target LGUs' WtE projects (Mr. Takahiro Kamishita) - Project Output 2: Updates on WTE project (LGU representatives from Quezon City, Cebu City, and Davao City) | <ul style="list-style-type: none"> ● Mr. Kamishita presented the updates for project output 2, summarizing the issues that the team has observed during the data collection, and the team's suggestions on how to address the observed issues: <ul style="list-style-type: none"> ○ Tipping fees for waste ○ Misunderstanding on SWM-PPP including WTE ○ Responsibility of LGU's ○ Needs of technical expertise in LGUs ○ Solicited approach based on SWM plan ○ Definition of waste category ○ Segregation in RA 9003 ○ Waste category in WACS ○ Accumulated data of solid waste quantity and quality ○ Address environmental NGO's opposition of incineration ○ Change of administration/ Long-term WTE development plan ● LGU Representatives were called on to present the updates on WTE project: <u>Quezon City</u> <ul style="list-style-type: none"> ○ Project is still under review by the Investment Affairs Office, and no further updates were noted. <u>Cebu City</u> | |
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| | <ul style="list-style-type: none"> ○ JVSC has resumed negotiations with New Sky after a halt due to the pandemic. ○ The previously identified location for the site (Brgy. Inayawan) is being disputed and a new site is being located. ○ CLUP is still being finalized. ○ JVSC has not yet forwarded the Joint Venture Agreement to CCENRO. ○ <u>Davao City</u> ○ According to Engr. Madrazo, there were some updates incorporated in their F/S which was why it took longer to finish than expected, but it has already been finalized and submitted to SWMD for comments ○ Ms. Pausing mentioned that the SWMD comments on the F/S has already been submitted to the Office of the Director. ○ If the result of the F/S is approved, paperwork will be endorsed to the Department of Finance and NEDA. | | |
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| <p>5.d) Presentation on the Detailed Updates of the Major Activities and Accomplishments per Project Output:</p> <ul style="list-style-type: none"> - Output 3: Training Plans on the sampling, analysis and QA/QC of Dioxins and Furans - Preparation of Standard Operating Procedures (Mr. Satoshi Miyaichi) | <ul style="list-style-type: none"> ● Mr. Miyaichi presented the updates for project output 3, beginning with the discussion of the objectives of project output 3 and the activities that are under them. ● The presentation then covered the gaps that were identified in ERLSD on its current SOP's for monitoring, sampling, treatment, QA/QC and analysis of dioxins and furans. ● Mr. Miyaichi presented the status of the progress of each of the activities in output 3, mentioning the bottlenecks encountered, and proposing preliminary recommendations based on the currently available data. | | |
| <p>5.e) Presentation on the Detailed Updates of the Major Activities and Accomplishments per Project Output:</p> <ul style="list-style-type: none"> - Output 4: Collection of Good Practice/Good Technology of other SWM Technologies in Japan and other countries - Identification of current issues for other SWM Technologies of the target LGUs (Ms. Kyoko Kimura) | <ul style="list-style-type: none"> ● Ms. Kimura presented the updates for project output 4, discussing the objectives of the activities under OP4, and the progress of each of the activities. ● The methodology used to achieve the activities was also discussed, understanding current SWM practices in the Philippines and benchmarking on good practices exercised in other countries. ● A few examples on BAT/BEP summary were presented to show how research is summarized and assessed. | | |
| <p>6.) Open Forum (Director William P. Cuñado, Director Mylene C. Capongcol)</p> | <p>Facilitated by Ms. Ruby de Guzman, Ms. Elvira S. Pausing and Ms. Raquel Rosario Reyes due to the unavailability of both EMB & DOE officials.</p> | <p>Ms. Marla Agas of DILG asked if the environmental monitoring form in accordance with DAO 27 s.2003 be</p> | |

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| <p>7.) Presentation on the Updated Project Schedules for CY 2021</p> <p>Presentation on the Identified additional activities under the TCP (Mr. Takahiro Kamishita)</p> | <ul style="list-style-type: none"> ● Mr. Kamishita presented the proposed addition and enrichment of activities <ul style="list-style-type: none"> ○ Activity 1-8 (new) Review and modification of SLF regulations considering possible disposal of incineration ash ○ Activity 2-6 (reinforcement) Define the proper responsibility (including financial responsibility) of LGU in promoting WTE project under PPP scheme ○ Activity 3-4 (reinforcement) Reinforce software operation of dioxin/furans analysis equipment ● Mr. Kamishita also raised a proposal to extend the project period due to the delay | <p>modified to adopt these new standards in the MC.</p> <ul style="list-style-type: none"> - Mr. Kamishita replied that environmental standards considered in the MC were only adopted from existing regulations in the Philippines, and should still agree with the regulations currently exercised. - Ms. Raquel Reyes of EMB added that this matter will be on EMB where forms have to be developed to complement the technical standards developed here. | |
| | | <ul style="list-style-type: none"> ● There were no contentions to the proposal; ITWG members accept and endorse the proposal presented. | |

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| <p>8.) Presentation and Updates on the Revised Memorandum of Understanding (MOU) between DENR and Target LGUs (Dir. Angelito Fontanilla)</p> | <p>of the commencement of the project, the effect of the pandemic, and with the proposed additional activities.</p> <ul style="list-style-type: none"> ○ With JCC’s approval of this proposal, a revised PDM will be drafted incorporating the necessary changes ● The updated project schedule for 2021 was also presented, including the training in Japan should conditions become more favorable. | | |
| | <ul style="list-style-type: none"> ● Due to time constraints and per request by Ms. Momoko Otsuka, the presentation on the updates of the revised MOU was deferred. Nevertheless, Ms. Pausing mentioned that the revised MOU has already been forwarded to the LGUs for their further comments and/or possible approval/signature. Updates from the LGUs are as follows: <ul style="list-style-type: none"> ○ Cebu City has submitted the draft MOU to their legal office and shall submit comments to DENR by next week should there be any, otherwise it will be moved for approval/signing ○ Davao City is still reviewing the document. ○ Quezon City still has some comments on the running draft, and they should be able to submit it to DENR by next week. | | <ul style="list-style-type: none"> ● Pending comments from Quezon City and Davao City, to be submitted to PMO and FASPS on or before Dec 11, 2020, for finalization and signing. |

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| <p>9.) Way forward, Schedule of the next meetings (Director William P. Cuñado, Director Mylene C. Capongcol)</p> | <ul style="list-style-type: none"> ● Ms. Otsuka asked when the JCC meeting will be conducted. <ul style="list-style-type: none"> ○ Ms. Pausing mentioned that the realistic date for it is last week of January 2021. ○ Ms. Otsuka requested for DENR to provide several schedules when DENR officials can be available. | | <ul style="list-style-type: none"> ● JCC meeting scheduled on January; PMO to submit a list of possible dates for the meeting to ease scheduling. |
| <p>10.) Wrap-up, Required Actions, and Agreements (Ms. Andrei Mallare)</p> | <ul style="list-style-type: none"> ● Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. | <ul style="list-style-type: none"> ● No clarifications and/or alterations raised by the subgroup members. | |
| <p>11.) Closing Remarks (Ms. Momoko Otsuka)</p> | <ul style="list-style-type: none"> ● Ms. Momoko Otsuka gave a brief closing remarks to formally end the program, thanking everyone for attending the meeting and for their continuous support and participation in the project despite all the setbacks that we are currently facing. She ends by enjoining everyone to keep continue with making this project a success, to promote a better solid waste management future for the Philippines. | | |

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