11-1: ITWG会議

11-1-3 ：第3回ITWG会議

3nd Inter-agency Technical Working Group (ITWG) Meeting

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

26 April 2021, 9:00 AM – 12:00 NN (*Via MS Teams*)

TENTTIVE PROGRAMME

TIME	ACTIVITY	SPEAKER
9:00 AM	Philippine National Anthem Invocation	SWMD-Project Management Office (PMO)
9:10 AM	Opening/Welcome Remarks	**Engr. Vizminda A. Osorio** *Assistant Director, EMB*
9:20 PM	Presentation on the Meeting Objectives, Tentative Agenda, & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD-SWMPPDS & Assistant Project Manager, SWMD-PMO*
Meeting will be presided by: **ITWG Chairman - Director William P. Cunado,** EMB-DENR **ITWG Co-Chairman- Ms. Ruby B. de Guzman,** REMB-BEMD, DOE • Welcome Message/Call to Order • Approval/Adoption of the Agenda		
9:40	**Project Output 1**: • Presentation of the draft BAT/BEP Guidelines including the comments/inputs provided by the SG1 members • Status on the endorsement and Procedure on the Approval of the WTE Technical Standards	**Mr. Satoshi Higashinakagawa** SWM3/WTE3, *JICA Experts Team (*JET) **Ms. Ma. Delia Cristina M. Valdez** *Chief, SWM Division, EMB* *Both Speakers shall be supported by EMB-SWMD-PMO & all Sub-group members for OP1
10:10	**Project Output 2**: • Brief updates on LGU's WTE project • Status of Approval/Signing of the Memorandum of Understanding (MOU)	**Representatives of partner LGUs**
10:30	**Project Output 3**: • Updates on the Training Plans on the sampling, analysis and QA/QC of Dioxins and Furans • Updates on the Preparation of Standard Operation Procedures	**Mr. Satoshi Miyaichi,** EMP/ESC, *JICA Experts Team (*JET) **Speaker to be assisted/supported by the EMB-ERLSD & EQMD & all Sub-group members for OP3*
10:50	**Project Output 4**: • Updates on the Collection of Good Practice/Good Technology of other	**Ms. Kyoko Kimura** Public Enhancement/Training Arrange/Coordinator, *JICA Experts Team (*JET) **Ms. Iku Sato**

	SWM Technologies in Japan and other countries • Updates on the TCP Newsletter	Waste treatment/3R, *JICA Experts Team (*JET) *Speaker to be supported by SWMD-PMO & all Sub-group members for OP4
11:00	• Updates on the Identified additional activities under the TCP	**Mr. Takahiro Kamishita** *Project Advisor, JICA Experts Team (JET)*
11:10	***Open Forum***	
11:25	Way forward/Next Steps	• **ITWG Chairman** (DENR-EMB) • **ITWG Co-Chairman** (DOE)
11:40	Wrap-up (Issues/Agreements/Timelines)	**Ms. Andrei Mallare** *Project Assistant, JICA Experts Team (JET)*
12:00	Closing Remarks	**Ms. Ruby B. de Guzman** *Chief, Biomass Energy Management Division, REMB, DOE*
Master of Ceremonies		**Ms. Raquel Rosario Reyes** *Senior EMS, EMB-SWMD-SWMPPDS*

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

3RD INTER-AGENCY TECHNICAL WORKING GROUP (ITWG) MEETING

26 APRIL 2021, 9:00 AM -12:00 PM, MONDAY
(MS TEAMS)

MEETING OBJECTIVES

1. To strengthen the relationships among stakeholders in the implementation of this project;
2. To serve as a venue to take a closer look on how it can help in achieving the goals of this project in a more inclusive course of actions.
3. To reach a common understanding among ITWG members on the challenges, and the strategies to resolve them; and
4. To set the right directions geared towards the smooth implementation of this project.

SPECIFIC PURPOSE OF THE MEETING

1. To provide the general updates on the implementation of the Technical Cooperation Project (TCP);
2. To present and discuss the details of the major activities and accomplishments specifically on the:
   - Updates of the four (4) project outputs of the TCP implementation; and
   - Updates on the WtE projects of the partner LGUs and the approval/signing of the Memorandum of Understanding (MOU) between DENR and Partner LGUs.
   - Updates on the endorsement and approval/signing of the MC for the Technical Standards for WtE Facility
3. To present the updates on the identified and approved additional activities under the TCP.

3RD INTER-AGENCY TECHNICAL WORKING GROUP (ITWG) MEETING

26 APRIL 2021, MONDAY, 9:00 AM-12:00 NN
(MS TEAMS)

TENTATIVE AGENDA

TIME	ACTIVITY	SPEAKER
9:00 AM	Philippine National Anthem Invocation	SWMD-Project Management Office (PMO)
9:10 AM	Opening/Welcome Remarks	**Engr. Vizminda A. Osorio** *Assistant Director, EMB*
9:20 PM	Presentation on the Meeting Objectives, Tentative Agenda, & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD-SWMPPDS & Assistant Project Manager, SWMD-PMO*
Meeting will be presided by: ITWG Chairman - **Director William P. Cunado**, EMB-DENR ITWG Co-Chairman- **Ms. Ruby B. de Guzman**, REMB-BEMD, DOE • Welcome Message/Call to Order • Approval/Adoption of the Agenda		

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3RD INTER-AGENCY TECHNICAL WORKING GROUP (ITWG) MEETING

TENTATIVE AGENDA

TIME	ACTIVITY	SPEAKER
9:40	**Project Output 1:** • Presentation of the draft BAT/BEP Guidelines including the comments/inputs provided by the SG1 members • Status on the endorsement and Procedure on the Approval of the WTE Technical Standards	**Mr. Satoshi Higashinakagawa** SWM3/WTE3, JICA Experts Team **Engr. Roxanne B. Barcenas** *Technical Assistant, SWMD-SWMPPDS, PMO* **Both Speakers to be assisted/supported by EMB-SWMD-PMO & all Sub-group members for OP1*
10:10	**Project Output 2:** • Brief updates on LGUs' WTE project • Status of Approval/Signing of the Memorandum of Understanding (MOU)	**Representatives of partner LGUs**
10:30	**Project Output 3:** • Updates on the Training Plans on the sampling, analysis and QA/QC of Dioxins and Furans • Updates on the Preparation of Standard Operation Procedures	**Mr. Satoshi Miyaichi** *EMP/ESC, JICA Experts Team* **Speaker to be assisted/supported by the EMB-ERLSD & EQMD & all Sub-group members for OP3*

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

ACKNOWLEDGEMENT OF PARTICIPANTS

26 APRIL 2021, MONDAY

3RD INTER-AGENCY TECHNICAL WORKING GROUP (ITWG) MEETING

TENTATIVE AGENDA

TIME	ACTIVITY	SPEAKER
10:50	**Project Output 4:** • Updates on the Collection of Good Practice/Good Technology of other SWM Technologies in Japan and other countries • Updates on the TCP Newsletter	**Ms. Kyoko Kimura** *Public Enhancement/Training Arrange/Coordinator, JICA Experts Team* **Ms. Iku Sato** *Waste treatment/3R, JICA Experts Team (JET)* **Speaker to be assisted/supported by SWMD-PMO & all Sub-group members for OP4*
11:00	Updates on the Identified additional activities under the TCP	**Mr. Takahiro Kamishita** *Chief Advisor, JICA Experts Team*
11:10	***Open Forum***	
11:25	Way forward/Next Steps	• **ITWG Chairman (DENR-EMB)** • **ITWG Co-Chairman (DOE)**
11:40	Wrap-up (Issues/Agreements/Timelines)	**Ms. Andrei Mallare** *Project Assistant, JICA Experts Team*
12:00	Closing Remarks	**Ms. Momoko Otsuka** *Assistant Representative, JICA Philippines*
Master of Ceremonies		**Ms. Raquel Rosario Reyes** *Senior EMS, EMB-SWMD-SWMPPDS*

LIST OF PARTICIPANTS

NO.	NAME	AGENCY/OFFICE	CONFIRMED
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1	Ms. Mylene C. Capongcol	DOE-REMB	
	Ms. Ruby De Guzman	DOE-REMB	
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	Ms. Letty Abella	DOE-REMB	
	Ms. Gemmalyn Galang	DOE-REMB	✓
2	Mr. Nonilo Peña	DOST-PCIEERD	
	Ms. Emelita A. Dimapilis	DOST-PCIEERD	
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	Mr. Dante C. Vergara	DOST-ITDI	
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4	Mr. Carlo Mari Crisregienald C. Tan	DILG-BLGS/NAPOLCOM Center	
	Atty. Ma. Rhodora Flores	DILG-BLGS/NAPOLCOM Center	
	Ms. Marla Clarisol L. Agas	DILG-BLGS/NAPOLCOM Center	✓

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5	Mr. Aldwin U. Urbina	NEDA-IPG	
	Mr. Kevin Gilbert M. Manzano	NEDA-IPG	
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	Ms. Aislyn Janelle L. Yao	PPP Center	✓
DENR-EMB REGIONAL OFFICE			
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	Mr. John Roy B. Kyamko	EMB Region VII	✓
9	Ms. Angelli Marie Jacynth A. Egar	EMB Region VII	
10	Ms. Socorro A. Mallare	EMB Region XI	
	Ms. Virginia R. Lobaton	EMB Region XI	

LIST OF PARTICIPANTS

NO.	NAME	AGENCY/OFFICE	CONFIRMED
PARTNER LOCAL GOVERNMENT UNITS			
11	Mr. David John S. Vergara	LGU Quezon City	✓
	Mr. Vincent Ferdinand Paul G. Vinarao	LGU Quezon City	
	Mr. Richard S. Santuile	TFSWCCDSM - LGU Quezon City	
	Mr. Louie Sabater	TFSWCCDSM - LGU Quezon City	✓
	Ms. Patricia Orante	TFSWCCDSM - LGU Quezon City	✓
12	Engr. Editha D. Peros	LGU Cebu City	
	Engr. Glory Rose C. Manatad	LGU Cebu City	✓
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13	Engr. Elisa P. Madrazo	LGU Davao City	
	Engr. Lakandiwa Soliman R. Orcullo	LGU Davao City	

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14	Ms. Consolacion P. Crisostomo	EMB-PPPDD	
	Engr. Majoe Cristobal	EMB-PPPDD	✓
	Ms. Mary Esther D. Ofiaza	EMB-PPPDD	
	Engr. Marcelino N. Rivera, Jr.	EMB-EQMD	✓
	Engr. Jundy T. Del Socorro	EQMD-AQMS	✓
	Engr. Wyona Kay C. Rativo	EQMD-AQMS	✓
	Ms. Fatima Anneglo R. Molina	EMB-ERLSD	✓
	Mr. Roger C. Evangelista Jr.	EMB-ERLSD	
	Mr. Sammy L. Aytona	EMB-ERLSD	
	Atty. Janice R. Pammit	EMB-Legal Division	
	Ms. Fatima E. Millan	EMB-Legal Division	
DENR-FOREIGN ASSISTED AND SPECIAL PROJECT SERVICE			
15	Dir. Angelito V. Fontanilla	DENR-FASPS	✓
	Mr. Eddie Abugan Jr.-	DENR-FASPS	✓
	Ms. Marianica Philina L. Obmerga	DENR-FASPS	✓

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NO.	NAME	AGENCY/OFFICE	CONFIRMED
JICA PHILIPPINES			
16	Ms. Momoko Otsuka	JICA Philippines	✓
	Mr. Christian Vic Perez	JICA Philippines	✓
JICA EXPERTS TEAM (JET)			
17	Mr. Takahiro Kamishita	JICA Experts Team	✓
	Mr. Satoshi Higashinakagawa	JICA Experts Team	✓
	Mr. Makoto Kosaka	JICA Experts Team	✓
	Mr. Satoshi Miyaichi	JICA Experts Team	✓
	Ms. Kyoko Kimura	JICA Experts Team	✓
	Ms. Iku Sato	JICA Experts Team	✓
	Mr. Tomoyuki Hosono	JICA Experts Team	✓
	Engr. Nikole Andrei Louise Mallare	JICA Experts Team	✓
	Mr. Eric Cea	JICA Experts Team	✓

LIST OF PARTICIPANTS

NO.	NAME	AGENCY/OFFICE	CONFIRMED
SWMD-PMO TECHNICAL & SUPPORT STAFF			
18	Ms. Ma. Delia Valdez	EMB-SWMD-PMO	
	Ms. Elvira S. Pausing	EMB-SWMD-PMO	✓
	Ms. Raquel Rosario Reyes	EMB-SWMD-PMO	✓
	Ms. Nelie Dimer	EMB-SWMD-PMO	✓
	Engr. Jedidiah Mangubat	EMB-SWMD-PMO	✓
	Ms. Rodeth Antonio	EMB-SWMD-PMO	✓
	Engr. Roxanne Barcenas	EMB-SWMD-PMO	✓
	Ms. Kris Morada	EMB-SWMD-PMO	✓

3RD INTER-AGENCY TECHNICAL WORKING GROUP MEETING

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

26 APRIL 2021, MONDAY, 9:00 AM – 12:00 PM (MS TEAMS)

WRAP UP

3RD INTER-AGENCY TECHNICAL WORKING GROUP MEETING

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

26 APRIL 2021, MONDAY, 9:00 AM – 12:00 PM (MS TEAMS)

WAY FORWARD/NEXT STEPS

3RD INTER-AGENCY TECHNICAL WORKING GROUP MEETING

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

26 APRIL 2021, MONDAY, 9:00 AM – 12:00 PM (MS TEAMS)

ADJOURNMENT

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3rd Inter-agency Technical Working Group Meeting

Output 1-1

"Explanation of Presentation of the draft BAT/BEP Guidelines including the comments/inputs provided by the SG1 members"

26th April 2021 (Monday)

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

Contents of Today's Presentation

1. Preparation Process of BAT/BEP guideline
2. Brief Explanation of Draft BAT/BEP Guideline
3. Main Comments and answer for them
4. Further step

Preparation Process of BAT/BEP Guideline

SG meeting	Date	Main Presentation/Discussion
1st OP1 SG	18 Feb. 2020	- Discussion of the target countries and type of WtE facility - Presentation of survey format for each member
2nd OP1 SG	5th Mar. 2020	- It was agreed that case studies mainly focus on combustion. - JET requested members to investigate what they are interested.
3rd OP1SG	4th Jun. 2020	- Confirmation of selection criteria and survey format - Presentation of 4 collected case studies base on the survey format (Japan, Singapore, Netherland and France)
4th OP1 SG	7th Jul. 2020	- Explanation of summary of 15 cases - Explanation of major salient features such as scale of WtE facility, utilization of thermal energy, air pollution control standard, etc
5th OP1 SG	20th Aug. 2020	- Brief explanation of collected 36 cases

Preparation Process of BAT/BEP Guideline

Meeting	Date	Main Presentation/Discussion
6th OP1 SG	14th Oct. 2020	- Presentation of summary of 46 BAT/BEP cases that have been collected - The target countries have been determined as 60 countries including EU, USA, Asia and Japan
2nd ITWG	3, Dec. 2020	- Explanation of Survey Procedure of Case Studies of BAT/BEP Guideline - Introduction of A Case Study - Presentation of summary of 60 BAT/BEP cases (Japan:30, Asia except Japan: 10, EU and USA:20) that have been collected
4th OP4 SG	25, Mar. 2021	- Submission of the draft BAT/BEP guideline on 17th of March - Explanation of the summary of draft BAT/BEP guideline to obtain the comments until the beginning of April
7th OP1 SG	23, Apr. 2021	- Presentation of the answer for the comments - Explanation of some additional information for the comments

Contents of BAT/BEP Guideline

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1. Introduction
1.1 Background and Objectives
1.2 Scope of Studies
1.3 Type of Combustion Technology

2. Case Studies
2.1 Survey Procedure of Case Studies
2.2 Technical Aspects of Case Studies
2.1.1 Capacity of WtE facility
2.1.2 Required Area of WtE facility
2.1.3 Target Waste
2.1.4 Energy Recovery Process
2.1.5 Environmental Pollution Control
2.2.6 Ash Treatment and Disposal

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2.3 Institutional / Financial Aspects
2.3.1 Project Implementation
2.3.2 Financial Aspects
2.3.3 Citizen Participation

3. Summary
3.1 Summary of Case Studies
3.2 Findings

Appendices
Appendix 1 Case Studies of BAT/BEP in various countries
Appendix 2 Case Study Sheets

Summary of BAT / BEP Guideline

Technical Aspect

Item	Summarization
Capacity of WtE	WtE capacity shall be designed by the waste collection amount and/or MSWM system of LGU, (one LGU or clustering LGUs)
Required Area	The smallest area size is around 1 ha in this case studies
Target Waste	The range of lower calorific value is 6,000 to 14,000 [kJ/kg] in this case study
Energy recovery	Application of recovered heat in WtE are; electric power, district Heating, provision of hot water, etc In case of power, the relationship between electric power generation and the capacity of WtE facility is approximately 20MW/1000 [ton/day].
Ash Treatment and Disposal	Majority of LGUs dispose bottom/fly ash at sanitary landfill for MSW after stabilization or hazardous waste landfill site Some of LGUs utilize them for construction material/cement aggregates by shouldering their expense
Environmental Pollution Control	Many facility utilize own standard stricter than national standard (for public acceptance, etc)

Summary of BAT / BEP Guideline

Institutional/Financial Aspect

Item	Summarization
Business Scheme	In case of Japan, most of case studies are Public Own & Operate and DBO. In case of EU, around a half of case studies is DBO and another half is BOT In case of Asian countries, most of project are being BOT or BOO.
Development approach	Most of cases in EU, USA , Japan and Singapore applies solicited approach, which LGUs prepare F/S and technical requirement. LGUs in developing countries tend to apply unsolicited approach.
Implementation Schedule	Planning (2-3 years), Design (around 1-2 years), Construction (2-4 years), Operation period is around 20 to 30 years
CAPEX	The range of capital expenditure is from 100,000 to 700,000 US$ per ton/day - The unit cost of capital expenditure (US$ per ton/day) can be reduced as the capacity of WtE increase
OPEX	The range of OPEX is around from 50 to 100 US$/ton.
Social Acceptance (citizen participation)	During the planning process, through the EIA or SEA, public consultation meetings have been held. There are some cases of displaying environmental monitoring data through panel display.

Example of A Case Study (Suginami Incineration Plant)

Name	Suginami Incineration Plant	Location	Suginami ward, Tokyo, Japan
Impl. Body	Clean Authority of TOKYO	Footprint	3.6 ha
Capacity	600t/d (300 x 2lines)	Heat Usage	Power 24.2MW
Target Waste	Combustible municipal solid waste	Waste Quality	8,854 kJ/kg

History

	Dev. Plan	Demolish	Bid	Const. St/Fin		Op. Start/Fin		Demolish
Original	-	-	-	-	-	-	-	-
Actual	-	-	-	2012	2017	2017	-	-

Capex			
Opex	1.01 B-JPY/yr (2019)	Source	LG + TF + Energy
Fin. Scheme	Public Build (DB) and Own	Dev. approach	Solicited

Coverage (SOW)	Collection	Transp.	Incineration	Power sale	Bottom ash	Fly ash
	LG (ward)	LG (ward)	LG	LG	LG	LG

Process Type	Stoker type		EPC / Tech	Hiz (JPN)	

Pollution Control	Exhaust Gas	Wastewater	Bottom ash	Fly ash	Other
	Stricter Standard (Scrubber + SCR + Bag Filter)	Discharge to Sewage	Eco-cement or SLF	SLF after chemical treatment	

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Example of A Case Study (Suginami Incineration Plant)

Description of salient features as the case study of BAT/BEP

Salient Features	Explanation
1. Utilization of surplus heat after electricity generation	The surplus heat after electricity generation is utilized by providing adjacent public facilities such as hot water pool, botanical garden, cultural center.
2. Implementation of site tour	Site tours are periodically implemented to be understand by residents about the WtE facility
3. IEC through of museum of waste management history or hot water pool	In the WTE facility, there is museum of Tokyo Gomi Senso (Experience to tackle with opposition by the residents of Suginami ward for WtE facility construction), which describe the background, opposition of the WTE facility by the residents

Example of A Case Study (Nong Khaem WTE plant)

Name	Nong Khaem WTE plant			Location	Nong Khaem, Thailand			
Impl. Body	C&G Environmental Protection Holdings Limited (C&G)			Footprint	? ha			
Capacity	500 t/day			Heat Usage	Power 9.8MW			
Target Waste	Municipal solid waste			Waste Quality	? KJ/kg			
History		Plan	Bid	Const. St/Fin		Op. Start/Fin		Demolish
	Original	-	-	-	-	-	-	-
	Actual	-	-	-	2014	2014	2034	-
Capex	THB900 million			Fund Source	BMA			
Opex	1000 Bahts/ton			Fund Source	Tipping fee from BMA + energy sale ?			
Fin. Scheme	BOT			Dev. approach	?			
Coverage (SOW)	Collection	Transp.	Processing	Energy sale	Bottom ash	Fly ash		
	C&G	C&G	C&G	C&G ?	BMA ?	BMA ?		
Process Type	Stoker type			EPC / Tech	New Sky /Hiz ?	(Remarks if any)		
Pollution Control	Exhaust Gas		Wastewater	Bottom ash	Fly ash	Other		
	?		?	?	?	?		

Example of A Case Study (Nong Khaem WTE plant)

Description of salient features as the case study of BAT/BEP

Salient Features	Explanation
1. First WtE plant in Metropolitan Bangkok.	This is first WtE plant in Metropolitan Bangkok which operates until now. However, it is not sufficiently disseminated about operation and maintenance information such as environmental monitoring or receiving waste amount or characteristics, etc

Main Comments and Answer on Draft BAT/BEP Guideline

Item	Comments	Answer
Target waste	Describe the suitable target waste for WtE facility	Explain optimal range of target waste (three components, etc)
Suitable LGUs for WtE facility	Possibilities of cluster LGU for WtE facility	Depend on the situation of LGU like small LGU, difficulty of consensus building, site selection of WtE, etc
Wastewater treatment	Describe the collection and disposal system	Describe the collection and disposal system
Ash treatment	Possibility of revenue source of ash Describe the leachate treatment of ash landfill site	Describe the examples in BAT/BEP guideline Describe leachate treatment of ash landfill site
Business scheme	Elaborate the role and responsibility of business scheme for WtE	Describe the role and responsibility in BAT/BEP guideline
CAPEX and OPEX	Describe the breakdown of CAPEX and OPEX	Introduce the example breakdown of CAPEX and OPEX in BAT/BEP guideline
Environmental Monitoring	Describe the monitoring frequency	Describe the cases of Japan and EU

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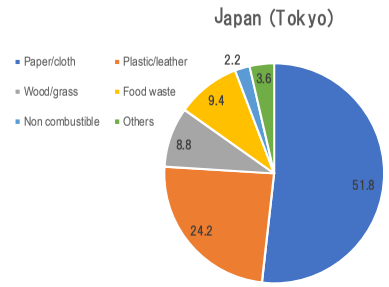
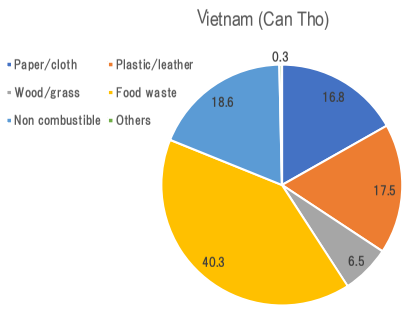
Target waste (Typical or Acceptable Range, etc)



Source: Metropolitan Tokyo



Source: Can Tho City

Rate (%)

Physical composition (dry base)	Paper/ cloth	Plastic/ Leather	Wood/ grass	Food waste	No-combustible	Others
Japan (average)	51.8	24.2	8.8	9.4	2.2	3.6
Japan (max)	63.5	32.0	19.3	19.6	5.9	13.6
Japan (min)	42.6	17.4	2.4	5.3	0.7	0.0

Source: Metropolitan Tokyo

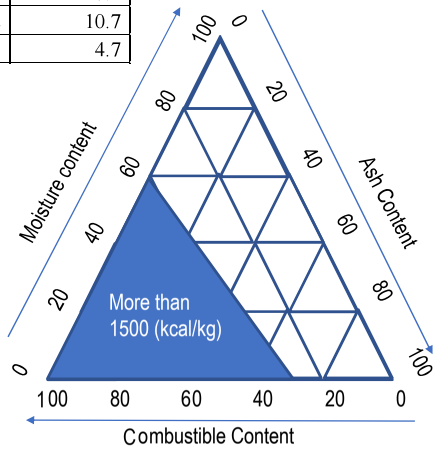
Target waste (Typical or Acceptable Range, etc)

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

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

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

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



Source: National Institute for Environmental Study

Role and responsibilities of public and private

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

: Role of the private sector

Note: In the PFI system, the private sector own the facility, while in DBO/DBM and Public works, the public will be the installer.

Financial Aspect (Operation and Maintenance Expenditure)

Example of Japan

(million US$)

Item	Shinkoto WtE plant		Toshima WtE plant		Ota WtE plant	
Pesonnel cost	7.0	22%	1.9	13%	0.7	5%
Utility cost	2.3	7%	0.8	5%	0.9	6%
Maintenance	13.8	44%	5.2	37%	2.0	13%
Ash handling	4.7	15%	1.3	9%	3.2	21%
Others	3.6	12%	5.0	35%	8.3	55%
Total O&M cost	31.4	100%	14.2	100%	15.0	100%
Total wase amount (thousand ton/year)	411.6	-	92.1	-	173.1	-
O&M cost (PHP/ton)	76.4	-	154.1	-	86.8	-

Source: Metropolitan Tokyo, Year2018

Environmental Monitoring

Examples of EU and Japan

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

Summarization of Progress

- Draft BAT/BEP guideline is presented in the end of March.
- Comments from SG member were received.
- Answer on comments are prepared to revise BAT/BEP guideline

Further Step

- According to the comments, this draft BAT/BEP guideline will be revised and improved until the end of May
- Presentation of the updated BAT/BEP guideline in the next subgroup meeting of output 1 for endorsement to JCC

Maraming salamat po !

3rd Inter-agency Technical Working Group Meeting

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

26 April 2021, Monday, 9:00 AM – 12:00 PM (*via Teams*)

UPDATES

Endorsement of the Memorandum Circular (MC) for Technical Standards of WtE Facility

PROJECT OUTPUT 1

- Status on the endorsement and procedure on the Approval of the WtE Technical Standards
  1. SWMD-PMO drafted the Complete Staff Work (CSW) for the endorsement of the Technical Standard for WtE Facility
     - 07 April 2021: Endorsement of the CSW to the Department of Energy for Approval/signature as JCC Co-Chairman
     - 22 April 2021: Received from DOE the approved/signed CSW
     - 22 April 2021: Endorsed to DENR-FASPS for approval/signature of Undersecretary Leones as the JCC Chairman
  2. Endorsement of the T/S to the EMB Director
  3. Endorsement to the EPTWG for further deliberation

添付資料11

TASK FORCE
ON
SOLID WASTE MANAGEMENT

Quezon City
Waste to Energy
Project Status

QC WTE PROJECT

Project Description

- The project involves the design, financing, construction, operation, and maintenance of a biodegradable source separated waste treatment and residual combustible waste treatment facility

Project Cost : PhP 22 Billion

Procurement Mode : Unsolicited

PPP Structure : Joint Venture

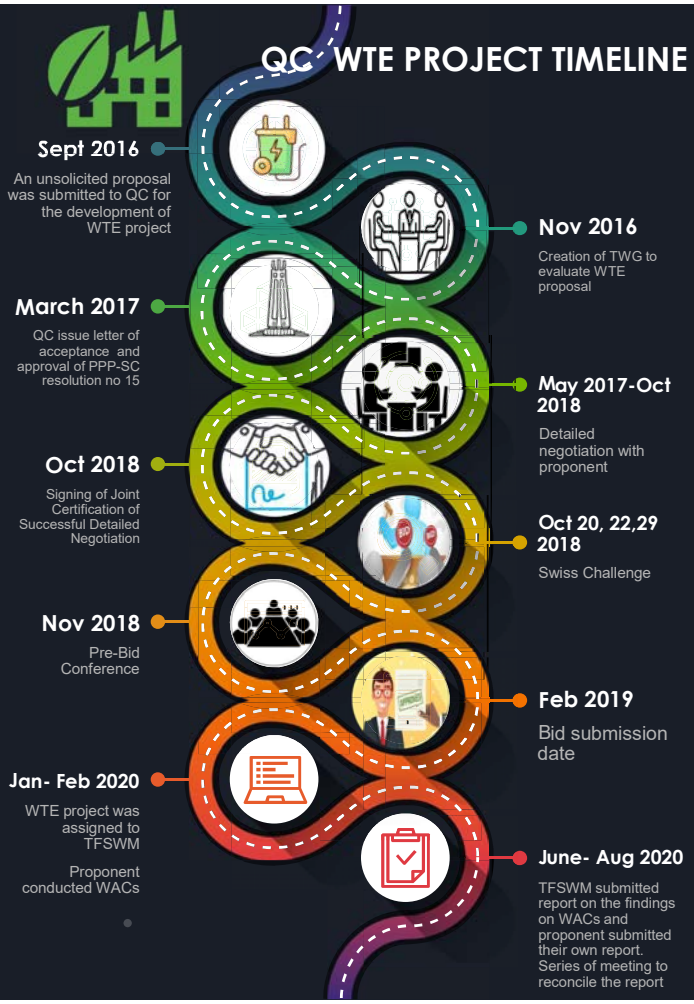
Cooperation Period : 35 years

Energy output : 36 MWe

Capacity : 3,000 MTD

Source : PPP Center
https://ppp.gov.ph/ppp_projects/quezon-city-integrated-solid-waste-management-facility-project/r

QC WTE PROJECT TIMELINE



Maraming Salamat po

3rd Inter-agency Technical Working Group Meeting

Output 3

"Explanation of Progress of implementation status for Dioxin and Furan Monitoring Training"

26th April 2021 (Monday)

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

Progress of implementation status for OP3 training

◆ The latest training plan is shown in the Progress Report 2, based on the discussion with ERLSD and JET.

Item	Progress
Operation Verification of GC/HRMS [Most Urgent]	- Due to several reasons, it has not yet been possible to accurately measure the standard solutions. - Training will be held on-line by using TeamViwer. - JET is waiting for the communication from ERLSD about the possible date for next meeting or training.
Sampling for Stack Gas and Ambient Air	- JET is planning to advise on contamination control for preparation of sampling materials. - To make this plan concrete, JET has sent a request to AQMS in last May to provide some documents described in Stack Testing Manuals.
Preparing SOPs	- JET recommended to create a comparison table between SOP and referenced standard EPA method. - JET will help to create the comparison table for EPA method 23 and waiting for the draft SOP for EPA Method 23.

3rd ITWG Meeting
for

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

26th April 2021

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

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.

4th SG meeting was held on 25th March

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.

Sub-group Meeting for OP4 on 25th March

"Good practice/Good technology" of other SWM technologies

3. Intermediate treatment /3R

3-11. Promotion of recycle
Waste bank (Bank Sampah)
Indonesia

Target waste: Recyclable wastes

Implementation entity: Government of the City etc.,

Outline
- Residents(Customers) bring recyclable waste to the waste bank and the profit generated when the recyclable waste is sold to a recycler is returned to the customers.
- In 2012, the Ministry of the Environment of Indonesia published implementation guidelines, which stipulate the roles of facilities, measuring of the weight and recording methods, etc.

Good Practice Point
- When collecting recyclable waste, the market value equivalent of recyclable waste is recorded in the "deposit passbook". Customers will be able to hand over recyclable waste to the waste bank, save money in their account, and withdraw cash after a certain period of time.
- By transferring the responsibility of waste treatment, the cost shouldered by the local government is reduced.


Malang Waste bank


Recyclable waste classified into 72 types


Waste bank counter

5. Information Education and Communication (IEC)

5-2. Promotion of segregation
Leaflet explaining waste segregation
Mandaue City , Philippines

Target waste: All type wastes

Implementation entity: Mandaue City

Outline
- Mandaue City in the province of Cebu shows the type of waste and collection date in leaflet.

Waste Classification in Mandaue City


Waste classification leaflet in Mandaue City

Good Practice Point
- Residents can check the waste classification and the collection day with the leaflet, and it can prevent improper waste disposal.

Similar cases

Target waste: All type wastes

Implementation entity: Kawasaki City, Japan

Outline
- List separation and discharge methods for each waste type is detailed in the local government website and public relations brochure.


Sorting and Disposal of Recyclable Materials and Garbage in Kawasaki

Starting of Activity 4-4

Activity 4-4
Summarize and provide suggestion/recommendation to improve utilization of other SWM technologies to target LGUs.

- Activity 4-4 will be started with the evaluation of the technical examples. However, additional examples may be added to the technical example document as needed.
- In Activity 4-4, the goal is for the C/P to be able to evaluate every technology, taking into account the characteristics of the LGU.
- LGUs are expected to evaluate the technical examples in each waste management stage (theme) from the following perspectives:
  - ✓ Technical viability
  - ✓ Economical feasibility
  - ✓ Cultural acceptability
  - ✓ Environmental soundness

Schedules of the Sub-group meeting for OP4

Beginning of June 2021
- ✓ Meeting with each target LGU and JET (1st time)
- ✓ Review and discussion of the Evaluation of Technology prepared by target LGUs

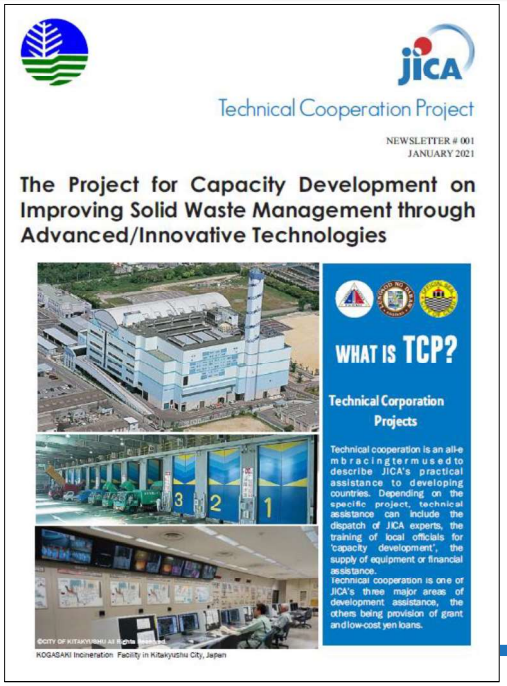
Beginning of August 2021
- ✓ Meeting with each target LGU and JET (2nd time)
- ✓ Review and discussion to finalize Evaluation of Technology prepared by target LGUs

Beginning of October 2021
- ✓ All SG members
- ✓ Target LGUs to give a presentation on the results of the Evaluation of Technology

Beginning of December 2021
- ✓ All SG members
- ✓ Summarize and provide suggestions/recommendations for target LGUs and other LGUs

For Activity 4-5, target LGUs will give a presentation on the seminar.

The 1st Newsletter


Technical Cooperation Project

NEWSLETTER # 001
JANUARY 2021

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

WHAT IS TCP?

Technical Corporation Projects

Technical cooperation is an all-embracing term used to describe JICA's practical assistance to developing countries. Depending on the specific project, technical assistance can include the dispatch of JICA experts, the training of local officials for 'capacity development', the supply of equipment or financial assistance.
Technical cooperation is one of JICA's three major areas of development assistance, the others being provision of grant and low-cost yen loans.

KOGASAKI Incineration Facility in Kitakyushu City, Japan

Table of Contents

- ◆ Project Outline
- ◆ Role of Government institutions
- ◆ On goring effort into the target LGUs <Quezon City>
- ◆ Environmental Monitoring with Output 3
- ◆ Achieved Events and Meeting in the Project

The details of the 2nd Newsletter will be discussed at the next meeting with PMO/FASPS.

添付資料11

Updates on the Identified additional activities

The Third ITWG Meeting

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

Updates

Conditions for modification of the R/D

- The procedure to modify the R/D has not been completed.
- The signing on a minutes between JICA and DENR is required for the procedure.

Activity 1-8:

- Wait the modification of R/D

Activity 2-6:

- JET and PPPC had two times of meeting to discuss/confirm how to coordinate the activities of SWM-PPP
- PPPC/JET are working to develop the work plan on the activity
- The activity would be started from May, as a part of Activity 2-6 even if the minutes between DENR and JICA could not be concluded.

Reinforcements and addition in the TCP activities

1. Activity 1-8: addition
   Review and modification of Sanitary Landfill regulations considering possible disposal of incineration ash

2. Activity 2-6
   Define the proper responsibility (including financial responsibility) of LGU in promoting WTE project under PPP scheme.
   -Support to SWM PPP projects to clarify responsibilities of LGUs under PPP scheme

3. Activity 3-4
   Conduct training of sampling, analyzing and QA/QC of Dioxins and Furans in ambient air and source emission gas in central EMB.
   -Reinforce software operation of Dioxin/Furans analysis equipment

Thank you for your attention!

添付資料11

PROJECT ACTIVITY : **3rd Inter-agency Technical Working Group (ITWG) Meeting**
DATE/TIME : **26 April 2021, 9:30AM-12NN (Philippine Time)**
VENUE : **Video Conference through Microsoft Teams**
MATERIALS : http://bit.ly/Filesfor3rdITWGMtg

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Opening/ Welcoming Remarks (EMB OIC Assistant Director Vizminda A. Osorio on behalf of EMB OIC Director William P. Cunado)	• On behalf of Director William P. Cuñado, EMB OIC Assistant Director Vizminda 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 emphasized how SWM is not just in the hands of DENR, but would take the immersive participation of related agencies, as being exercised in this Inter-agency Technical Working Group.		
2.) Discussion of Objectives of the Meeting & Acknowledgement of the ITWG Members and Sub-group Members (Ms. Elvira S. Pausing, EMB-SWMD-PMO)	• Ms. Elvira Pausing reviewed the proceedings of the last ITWG Meetings on January 24, 2020 and on December 3, 2020, where the Technical Standards were reviewed and later on approved and endorsed to the JCC. • The meeting objectives were presented along with the meeting agenda. • 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 Reyes of EMB-SWMD-SWPPDS, the assigned emcee for		

	the ITWG meeting, turned over the floor to AD Osorio to formally preside over the meeting. • With quorum reached, and no further comments from the body, AD Osorio asked for a move to adopt the agenda as presented, which was moved for adoption and seconded by the representatives of NEDA and DILG respectively.	• Agenda was moved without further modifications.	
3.) Project Output 1: **Presentation of the draft BAT/BEP Guidelines including the comments/inputs provided by the SG1 members** (Mr. Satoshi Higashinakagawa, JICA Experts Team)	• Mr. Satoshi Higashinakagawa presented the working draft of the BAT/BEP Guidelines, the process by which it was prepared, and the comments of the Subgroup 1 members on the draft. • Sample case studies were presented to illustrate the salient points gathered in the data collection process. • Mr. Higashinakagawa also mentioned that the first draft of the BAT/BEP Guidelines was then routed to the Subgroup 1 members and presented during the Subgroup 4 Meeting, where DOE, PPPC, EMB, and Davao City extended comments for consideration. The comments were discussed by Mr. Higashinakagawa, explaining briefly how each comment will be addressed and adopted.	• Answers to the comments are currently being prepared, for close coordination with the commenters. • Target finish of the 2nd Draft BAT/BEP Guidelines will be at the end of May 2021, for target discussion and approval in the next OP1 SG Meeting in June and for target approval in the next ITWG Meeting.	• [JET] Prepare responses to the comments of the OP1 subgroup meeting members. • [JET] Provide the 2nd Draft of BAT/BEP Guidelines by end of May.
3.) Project Output 1: **Status on the endorsement and procedure on the Approval of the WTE Technical Standards** (Ms. Roxanne Barcenas on behalf of Ms. Ma. Delia Cristina M. Valdez)	• Ms. Roxanne Barcenas presented the updates on the endorsement of the Technical Standards on behalf of Ms. Delia Valdez. • Ms. Barcenas presented the timeline, noting that the approved/signed CSW has	• Next steps include the endorsement to the EMB Director and later on to the EMB Policy Technical Working Group (EPTWG) for further deliberation. • Mr. Christian Perez of JICA Philippines asked Ms. Barcenas for an estimate on	

	been received from DOE, and was promptly forwarded to FASPS to facilitate the approval and signing of DENR Undersecretary Jonas R. Leones.	how long the next steps are forecasted to take. ○ Ms. Barcenas mentioned that they cannot estimate at the moment, but will give updates as the process progresses. • Mr. Perez clarified if further approval from the Executive Committee of DENR will be needed to officialize the Technical Standards after the EPTWG deliberations. ○ Ms. Pausing relays that EPTWG will decide on whether the TS will be adopted as an MC or a DA, the process will depend on the decided adoption outcome. ○ AD Osorio suggests for PMO to calendar the deliberation with the EPTWG. ○ Ms. Pausing agrees, but stresses that the CSW should first be endorsed by USec. Leones before the deliberation can be scheduled.	• [PMO] PMO to provide updates to the ITWG on the progress of the paperwork. • [PMO] PMO to calendar the deliberation with the EPTWG once CSW is signed by USec. Leones.
4.) Project Output 2: **Brief updates on LGU's WTE project**	• Engr. Louie Sabater of QC-TFSWM presented the updates on the QC WTE Project, discussing the project description,		

(Engr. Louie Sabater, Quezon City Task Force on Solid Waste Management (TFSWM)) **Status of Approval/ signing of the MOU** (Mr. David John Vergara, Quezon City LGU)	cost, and the timeline of the pertinent activities relating to the project. • Mr. Sabater further relays that this task has just been recently turned over to QC-TFSWM, and turnover of files are still being facilitated. • Mr. David Vergara reported that the Assistant City Administrator is still currently assessing the MOU and has recently asked for clarification on Section 4.a, but the inquiry has been addressed by the team of Mr. Vergara.		
4.) Project Output 2: **Brief updates on LGU's WTE project** **Status of Approval/ signing of the MOU** (Engr. Glory Manatad, Cebu City LGU)	• According to Ms. Glory Manatad of Cebu City LGU, as discussed with the JVSC, the WtE project is still currently in the negotiation stage. From the last meeting, the proponent still had some issues with the location for the project but has not gotten back to them yet for further discussion. • The Sangguniang Panlungsod (City Council) has conditionally approved the MOU. For the final review and approval, they are requesting for a signed copy of the minutes of the meeting held last October 22, 2020 on the discussion between PMO, FASPS, JET and concerned LGUs pertaining to the updating of the MOU. • Once approved by the City Council, the MOU will be endorsed to the Mayor for final review and signing.		• [PMO] Provide signed copy of October 22, 2020 MOU Meeting Minutes to Ms. Manatad for submission to Cebu City Sangguniang Panlungsod.

添付資料11

4.) Project Output 2: **Brief updates on LGU's WTE project** **Status of Approval/ signing of the MOU** (Davao City LGU)		• PMO noted that Davao City was not able to send representatives to attend in today's meeting, and PMO will facilitate communication with them to solicit updates on the status of the MOU signing and WTE project implementation.	• [PMO] Follow up with Davao City on updates on their WTE project and MOU signing.
5.) Project Output 3: **Updates on the Training Plans on the sampling, analysis and QA/ QC of Dioxins and Furans**	• Mr. Satoshi Miyaichi showed the latest training plan based on the discussion with ERLSD and JET following the last ITWG meeting. • Mr. Miyaichi determined that the Operation Verification of GC/HRMS is the most urgent activity. Remote training through TeamViewer is also pending.	• Ms. Fatima Molina of ERLSD relays that the recent power outages have affected their operations but the lab has just resumed their normal operations. Verification works coordinated with JET have been progressing well for the operation of the GC/HRMS.	• [ERLSD] Ms. Molina will coordinate with Mr. Roger Evangelista and Mr. Sammy Aytona to facilitate the remote training through TeamViewer.
	• For the Sampling for Stack Gas and Ambient Air, JET has sent clarificatory inquiries to AQMS but has yet to receive a reply.	• Mr. Jundy Del Socorro of AQMS acknowledges the request pertaining to the Stack Testing Manual, and agrees to provide a copy to JET. Currently, they only have the hard copy, and will still have to look for the softcopy.	• [AQMS] AQMS to provide requested documents pertaining to Stack Testing Manual to JET.
Updates on the Preparation of Standard Operating Procedures (SOP) (Mr. Satoshi Miyaichi, JICA Experts Team)	• From the discussions between JET and ERLSD, the comparison table for Method 23 will be drafted by JET, to be reviewed and revised by ERLSD. SOP for Method 23 is still being requested to allow JET to work on the comparison table.	• ERLSD is currently preparing for the documentation materials for their ISO application and still waiting for approval to give access to JET to this controlled document. • Ms. Molina inquires on the significance of the comparison table being required, given that proper method validation and verification are already being facilitated in the process of ISO application.	• [ERLSD] Ms. Molina will ask EMB management for approval to disclose controlled documents to JET.

		○ Mr. Miyaichi will discuss this in detail in a close coordination meeting with ERLSD once SOP is provided.	
6.) Project Output 4: **Updates on the Collection of Good Practice/ Good technology of other SWM Technologies in Japan and other countries** **Updates on the TCP Newsletter** (Ms. Kyoko Kimura, JICA Experts Team)	• Ms. Kyoko Kimura relayed the updates as discussed in the recent OP4 Subgroup Meeting. She emphasized the Evaluation of Technology that was given to the LGUs, and detailed that individual meetings with the LGUs will be facilitated to discuss their working draft. • The 1st TCP Newsletter was also presented, relaying that a more recent version of the newsletter was submitted to EEID through SWMD-PMO.	• Mr. Perez asked who the target recipients of the newsletter are. ○ Ms. Kimura relayed that once EEID approves of the more recent draft, the newsletter will be uploaded in the EMB website open for public access. • Mr. Kamishita asked Ms. Pausing on the updates of the EEID review of the revised newsletter. ○ Ms. Pausing clarified that the first draft of the TCP Newsletter has been posted on the EMB website. However, JET pointed out that the material was still a draft, and an updated material is prepared for reposting.	

		○ Ms. Pausing received the updated material from JET and has endorsed it to the OIC-Chief, SWMD and eventually forwarded to EMB-EEID for reposting. ○ AD Osorio suggested for PMO to also present updates on the newsletter in the next ITWG Meeting.	• [PMO] PMO to follow up with EEID in the posting of the updated TCP Newsletter.
7.) Updates on the identified additional activities under the TCP (Mr. Takahiro Kamishita, JICA Experts Team)	• Mr. Kamishita explained the additional reinforcement activities of the TCP: Activity 1-8 (addition), Activity 2-6 (reinforcement), and Activity 3-4 (reinforcement) • The amendment of the R&D by the minutes between DENR and JICA must be finished in order to officialize the adoption of the additional activities and the extension of the project duration. The process is still currently ongoing. • The revised R&D is needed before Activity 1-8 is commenced, but the reinforcement activities 2-6 and 3-4 can already be started. • In line with Activity 2-6, coordination meetings between JET and PPPC have already been facilitated twice and the activity is expected to formally commence this May.		• [PMO] Facilitate the revision of the R/D, reflecting the reinforcement activities and extended project period.

8.) Open Forum
(EMB OIC AD Vizminda A. Osorio)
	• AD Osorio facilitated the open forum.
	• Mr. Perez inquired on the MOU Updates of the LGUs, particularly for Davao City.
	  ○ Ms. Pausing confirmed that the most recent updates received from Davao City LGU was the one presented in the JCC Meeting. Ms. Pausing mentions that PMO will follow up on updates given that no participants from Davao City are present in this meeting.
	  ○ Ms. Manatad clarified that a signed minutes is needed by the City Council. The next meeting will be facilitated next Wednesday, May 5, and requests the signed minutes from SWMD-PMO before then.
		• Ms. Morada relays that the minutes are still for Ms. Delia Valdez' signature	• [PMO] Follow up with Davao City on updates on their WTE project and MOU signing.
			• [PMO] PMO through Ms. Morada to follow up with Ms. Valdez on her signature for the minutes of discussion on the MOU meeting.

9.) Wrap-up, Required Actions, and Agreements (Ms. Andrei Mallare, JICA Experts Team)	• Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. • [JET] Prepare responses to the comments of the OP1 subgroup meeting members. • [JET] Provide the 2nd Draft of BAT/BEP Guidelines by end of May. • [PMO] PMO to provide updates to the ITWG on the progress of the paperwork. • [PMO] PMO to calendar the deliberation with the EPTWG once CSW is signed by USec. Leones. • [PMO] Provide signed copy of October 22, 2020 MOU Meeting Minutes to Ms. Manatad for submission to Cebu City Sangguniang Panlungsod. • [ERLSD] Ms. Molina will coordinate with Mr. Roger Evangelista and Mr. Sammy Aytona to facilitate the remote training through TeamViewer. • [AQMS] AQMS to provide Stack Sampling Manual to JET. • [ERLSD] Ms. Molina will ask EMB management for approval to disclose controlled documents to JET. • [PMO] PMO to follow up with EEID in the posting of the updated TCP Newsletter • [PMO] Facilitate the revision of the R/D, reflecting the reinforcement activities and extended project period.	• Ms. Pausing clarified that prior to the endorsement of the BAT/BEP Guidelines to JCC, it must be endorsed first to the ITWG for deliberation and approval. • Ms. Molina requested for the record to reflect that the verification works for the GC/HRMS equipment is *progressing well currently, following* the operational interruptions brought about by the recent power outages. • No further clarifications and/or alterations were raised by the other attendees.	

	• [PMO] Follow up with Davao City on updates on their WTE project and MOU signing. • [PMO] PMO through Ms. Morada to follow up with Ms. Valdez on her signature for the minutes of discussion on the MOU meeting.		
10.) Closing Remarks (Ms. Momoko Otsuka, JICA Philippines)	• Ms. Momoko expressed her gratitude to the ITWG members for their continuous support to the TCP, and emphasizes that the collective effort of the agencies will be key to the success of the TCP.		

Prepared by:

Ms. Nikole Andrei Louise Mallare
Research Assistant
JICA Experts Team

Reviewed by:

Ms. Elvira S. Pausing
Supervising EMS & Assistant Project Manager, SWMD-PMO
DENR-EMB

Mr. Takahiro Kamishita
Chief Advisor
JICA Experts Team

Recommended by:

Ms. Ruby De B. Guzman
Chief, Biomass Energy Management Division
DOE-REMB

Approved by:

Engr. Vizminda A. Osorio
OIC-Assistant Director
DENR-EMB

添付資料11

11-1: ITWG会議

11-1-4 ：第4回ITWG会議

4th Inter-agency Technical Working Group (ITWG) Meeting

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

02 August 2021, Monday, 1:00 PM – 4:00 PM

(*Via MS Teams*)

PROGRAMME

TIME	ACTIVITY	SPEAKER
1:00 PM	Invocation	EMB-SWMD-PMO
	Opening/Welcome Remarks	**Engr. William P. Cuñado** *OIC-Director, EMB*
1:10 PM	Meeting Objectives, Tentative Agenda, & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
Meeting will be presided by: **ITWG Chairman - Director William P. Cunado,** EMB-DENR **ITWG Co-Chairman- Ms. Ruby B. de Guzman,** REMB-BEMD, DOE • Welcome Message/Call to Order • Adoption of the Agenda		
1:30 PM	**Project Output 1**: • Presentation of the draft Case Study Analysis for the Guideline of Best Available Technique / Best Environmental Practice (BAT/BEP) • Status on the endorsement and Approval of the WTE Technical Standards	**Mr. Takahiro Kamishita** Chief Advisor, JET **Ms. Ma. Delia Cristina M. Valdez** *OIC-Chief, SWM Division, EMB* **Both Speakers shall be supported by EMB-SWMD-PMO & all Sub-group members for OP1*
2:00 PM	**Project Output 2**: • Updates on the Project Activities • Status of Approval/Signing of the Memorandum of Understanding (MOU)	**Mr. Makoto Kosaka** SWM/PPP, JET **Representatives of partner LGUs**
2:30 PM	**Project Output 3**: • Updates on the Project Activities	**Mr. Satoshi Miyaichi,** EMP/ESC, JET **Speaker to be assisted/supported by the EMB-ERLSD & EQMD & all Sub-group members for OP3*
2:45 PM	**Project Output 4**: • Updates on the Project Activities: Assessment of the SWM technologies by LGUs	**Ms. Kyoko Kimura** Public Enhancement/Training Arrange/Coordinator, JET **Speaker to be supported by SWMD-PMO & all Sub-group members for OP4*

3:00 PM	***Open Forum***	
3:10 PM	Way forward/Next Steps	• **ITWG Chairman** (DENR-EMB) • **ITWG Co-Chairman** (DOE-BEMD)
3:20 PM	Wrap-up (Issues/Agreements/Timelines)	**Ms. Andrei Mallare** *Project Assistant, JET*
3:30 PM	Closing Remarks	**Ms. Ruby B. de Guzman** *Chief, Biomass Energy Management Division, REMB, DOE*
Master of Ceremonies		**Engr. Roxanne Barcenas** *Technical Assistant, EMB-SWMD-PMO*

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

4th Inter-Agency Technical Working Group (ITWG)

Activity 1-1

"The Final Draft BAT/BEP Guidelines "

2nd August 2021 (Monday)

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

Contents

1. Rationale
2. Formulation Process of BAT/BEP Guidelines
3. Comments and Responses
4. Next Step, (endorsement by ITWG for JCC)

Rationale

- The DAO 2019-21, otherwise known as the Guidelines Governing WtE Facilities for the Integrated Management of MSW:
  To give the minimum requirements for the development and operation of WtE facilities
- Section 12, the NSWMC Resolution 669-2016:
  the NEC to prepare the Best Available Technologies (BAT) /Best Environmental Practices (BEP) guidelines for Waste to Energy (WtE) technologies
- The objective: to provide information from existing case studies that can be references for WtE facilities of LGUs.

2. Formulation Process of BAT/BEP Guidelines

Schedule planned before COVID-19 (at 2nd SGM held in March 2020)

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

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2. Formulation Process of BAT/BEP Guidelines

SG meeting	Date	Main Presentation/Discussion
1st OP1 SG	18 Feb. 2020	- Discussion of the target countries and type of WtE facility - Sharing of the draft survey format
2nd OP1 SG	5th Mar. 2020	- Agreed that case studies mainly focus on combustion. - JET requested members to investigate what they are interested.
3rd OP1SG	4th Jun. 2020	- Agreed on the selection criteria and survey format - Presentation of 4 collected case studies base on the survey format (Japan, Singapore, Netherland and France)
4th OP1 SG	7th Jul. 2020	- Summary of the collected 15 cases - Major salient features such as scale of WtE facility, utilization of thermal energy, air pollution control standard.
5th OP1 SG	20th Aug. 2020	- Summery of the collected 36 cases

2. Formulation Process of BAT/BEP Guidelines

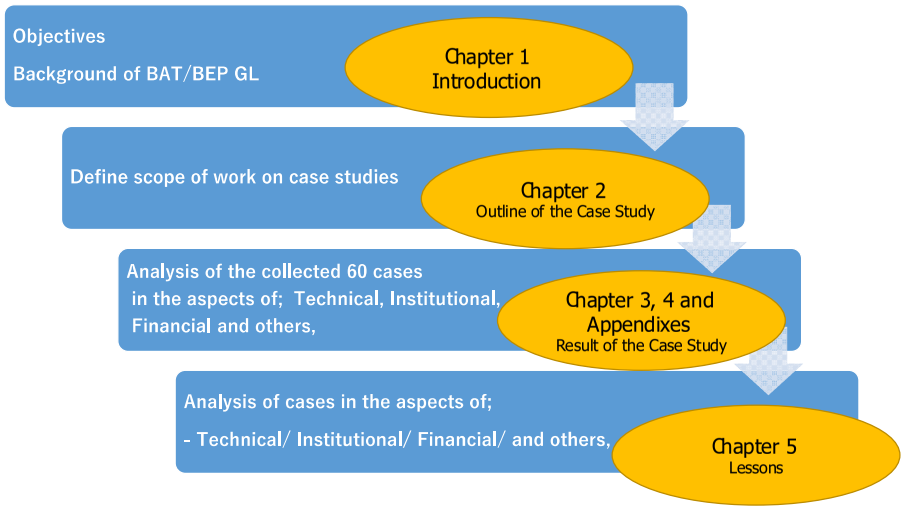
Meeting	Date	Main Presentation/Discussion
6th OP1 SG	14th Oct. 2020	- Summary of the collected 46 cases - The target cases have been determined as 60
2nd ITWG	3, Dec. 2020	- Explanation of Survey Procedure of Case Studies and the introduction of A Case Study - Summary of the collected 60 cases (Japan:30, Asia except Japan: 10, EU and USA:20)
4th OP4 SG	25, Mar. 2021	- Sharing of the 1st draft on 17th of March - Request of comments until the beginning of April
7th OP1 SG	23, April 2021	- Answer for the comments to update the 1st draft - Additional information for the comments
3rd ITWG	26, April 2021	- Sharing the 1st draft and its contents - The target schedule to update the draft
8th OP1 SG	16, June 2021	- Sharing of the 2nd draft - Acceptance of additional comments until the 24 June
3rd ITWG	2, Aug. 2021	- Sharing of the Final draft - Modification of the title of document

2. Formulation Process of BAT/BEP Guidelines

■ 2nd Draft is presented to ITWG for endorsement (to propose JCC),

SG MTGs	4th	5th	6th	7th	8th	ITWG	JCC
Year	2020			2021			
Date	07 July	20 Aug.	14 Oct.	13 April	16 June	2 Aug	Sept
Progress sharing	x	X	x				
Data from secondary info.	Mar. 2020 to Mar. 2021						
Contact to WTE facilities			Dec. 2020 to Mar. 2021				
Presentation of the draft				1st draft	2nd draft	Final draft	
Updates with comment				→	→		
Endorsement by ITWG and JCC						X	X

Structure of the Document



3. Comments and Responses

1)Acceptable Target waste

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

3. Comments and Responses

2) Clustering

- The concept of cluster LGU is desirable to enjoy the advantage of scale of WtE facility.

- The following issues in making consensus among LGUs joining clustering.
  - Possible change in administration of LGUs,
  - Site selection concerns (Not in my backyard [NIMBY]),
  - Waste collection and transportation efficiency, as transportation distances could be longer for member LGUs
  - Environmental impact by WtE, waste transportation etc.

Title of the document

- "Case Study Analysis for Guideline of BAT/BEP of WtE" as a deliverable of TCP, instead of BAT/BEP guideline
  - DENR does not authorize single technology as BAT/BEP
  - The document will be officialized by DENR after its delivery by the TCP

4. Next step

1. Endorsement by ITWG
2. Application of approval by JCC (at JCC meeting)
3. (Submittal to DENR by the TCP)

Thank you for your attention!

NIPPON KOEI

4th ITWG Meeting
Updates of Output 2

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

2nd August 2021

Makoto KOSAKA, SWM-PPP Expert

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

Overview on OP2 as of July2021

1. Progress of each activity under Output 2,
2. MOUs between EMB and 3 LGUs (as TCP's prior condition are not yet signed),
   => Progress of activity 2-4, 2-6, 2-7, 2-8 are drastically affected.
3. Additional activities with PPPC,
4. Future steps;

1. Progress of each activity under Output 2,

Activities under Output 2		LGU QC	LGU CC	LGU DC
2-1:	Review current situation on introducing WTE facilities in the target LGUs	100%	100%	100%
2-2:	Clarify current waste flow & amount, set target on waste reduction in the existing SWM 10-year plans	100%	100%	100%
2-3:	Evaluate LGUs' land use plan for WTE projects	100%	100%	100%
2-4:	**Analyze & verify candidate WTE projects** selected from the existing F/S, unsolicited/solicited proposals	0%	50%	0%
2-5:	Define points & issues to be addressed for formulating WTE projects in the target LGUs	80%	80%	80%
2-6:	**Define proper responsibility of** the target LGUs in promoting **WTE projects under PPP scheme**	0%	50%	0%
2-7:	**Formulate technical specification of WTE facilities in each target LGU**	0%	0%	0%
2-8:	Define points & issues to be addressed for **supervising WTE projects** in the target LGUs	0%	0%	0%

2. MOUs between EMB and LGUs

- As of July 2021, the progress of the MOU signing of the 3 LGU's are as follows:

LGU	Update	Next Steps
Quezon City	For review of the City Administrator	Once approved by City Admin, will be sent to Mayor's office (signing is facilitated by Mr. Vergara)
Cebu City	Signed by the City Mayor	For signature of Regional EMB Director and endorsement to EMB CO
Davao City	For review in the Sangguniang Panlungsod Office	Once cleared, will be sent to Mayor's office for signing.

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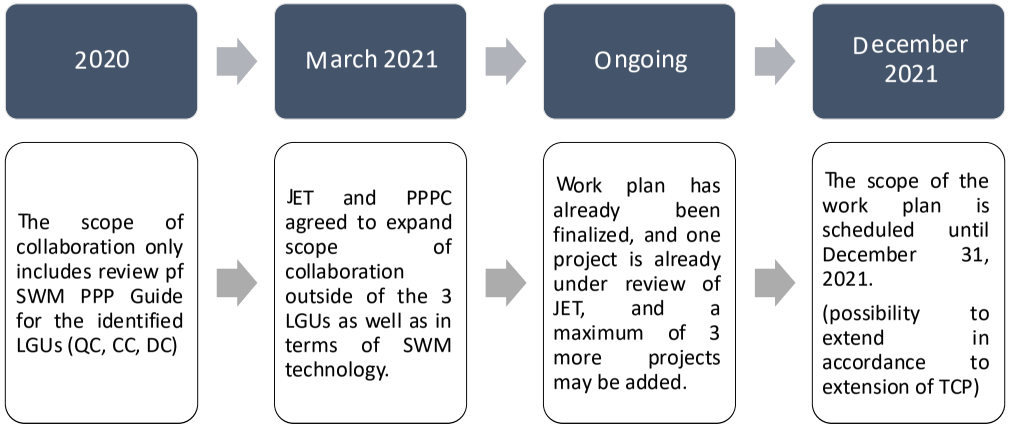
3. Additional activities with PPPC

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

1. Background
   - SWM PPP projects other than WTE are also promoted by the Governments
   - PPPC take important role to support LGUs to develop PPP project
   - PPPC 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, PPPC with support by JET

3. Additional activities with PPPC



3. Additional activities with PPPC

Expanded Scope of JET's Technical Assistance	Specifics
Provide expertise on better management of SWM PPP Projects	Provide comments and inputs on the **development, evaluation, management and implementation** of solicited and unsolicited SWM PPP Projects
Provide inputs on technical specifications that need to be considered for SWM PPP Projects	This includes providing inputs on the **template technical eligibility criteria, KPIs, MPSS**, etc.
Conduct capacity development activities	Facilitate **Knowledge Sharing Sessions (KSS)** and other relevant activities on SWM for PPPC, LGUs, and other implementing agencies
Assist in the preparation of PPP Guide on Unsolicited Joint Venture WTE Projects	Provide comments in the **PPP Guide on Unsolicited JV WTE Projects for LGUs** that PPPC is currently drafting

4. Future Steps on Output 2

- Future steps on remaining activities to be done with target 3 LGUs are fully depending on the situation of MOUs as well as readiness of 3 LGUs,
  > Again request PMO and LGUs to implement necessary processes,
- For the collaboration with PPPC, JET expects **inputs of local context** from the technical discussions in the on-going waste management PPP projects, and **outputs** as the PPP guidelines for the LGUs to evaluate unsolicited proposal, which may have some synergies with TCP "Activity 1-6 Manual for planning, evaluation, formulation & supervision for WTE projects" under Output 1,

添付資料11

4th Inter-agency Technical Working Group Meeting

Output 3

"Update of the Project Activities for Dioxin and Furan Monitoring Training"

2nd Aug 2021 (Monday)

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

Progress of OP3

Activity	Contents	Status
3-1	Review of the current capacity and activities in central and regional EMB	Done
3-2	Analyze gap between the present capacity of the central EMB laboratory and required capacity and formulating training plans	Done, but the training plans are subject to be modified based on the progress.
3-3	Prepare Standard Operation Procedures (SOP)	Ongoing -> JET is now reviewing
3-4	Conduct training of sampling, analysis and QA/QC of Dioxins and Furans	Ongoing
3-5	Prepare Sampling Plan (Design) for ambient air samples	To be started
3-6	Implement sampling, analysis and QA/QC of Dioxins and Furans	To be started

Reference Information: Steps for Introducing D/F Analysis

◆ AQMS: Activity 3-4 (Sampling)

I. JET is waiting for providing the documents referred in the Stack Testing Manual from AQMS.

Please see page 4

II. For the documents provided in June, a calibration record for the high-volume air sampler was not included. In addition to this, JET would like to request some additional documents related to sampling works. The following is a set of materials JET would like AQMS to provide:

a. Example of the high-volume air sampler calibration record (Annual inspection)
b. Example of the ambient air quality sampling record by high-volume air sampler
c. Example of the pre-use checklist for stack gas sampler
d. Example of the stack gas sampling record

For these documents, Japan's examples are shown in page 5 to 8. If AQMS records information similar to these, please provide actual examples.

Reference Information: Steps for Introducing D/F Analysis

Specific requested materials for AQMS

➢ Stack Testing Manual, pp.68-69

- USEPA Volume III as shared to EMB Central and Regional Offices
- Figure F23-1
- LP 23a
- L 23-1

Outline of Operational Procedures

A sample is withdrawn from the gas stream isokinetically and collected in the sample probe, on a glass fiber filter, and on a packet column of adsorbent material. The sample cannot be separated into a particle vapor fraction. The PCDD's and PCDF's are extracted from the sample, separated by high resolution gas chromatography (HRGC), and measured by high resolution mass spectrometry.

The field procedure as described in USEPA Method 23, collecting collection and analysis of PCDD's and PCDF's is as follows (references in brackets refer to USEPA Volume III, a copy of which has been provided to EMB Central each Regional office):

A. Sampling

1. Assemble the train as shown in Figure F23-1 Turn on the adsorbent module and condenser coil recirculation pump and begin monitoring the adsorbent module gas entry temperature.
2. Ensure proper sorbent temperature entry temperature before proceeding with sample collection. Never exceed 50°C because thermal decomposition of the XAD - 2 adsorption resin will occur. Do not exceed 20° C during testing for efficient capture of PCDD and PCDF.

B. Sample Recovery

Follow the general procedure in Method 5. Use aluminium or Teflon tape to close of both ends of the probe. Do not smoke in the clean-up area (possible contamination). Treat samples as described in F23-1 section D.:

C. Laboratory Procedures

Pre-clean all components according to LP 23a. Extract all samples within 30 days of sampling and analyse within 45 days of extraction.

1. Prepare reagents in accordance with L23-1 and closely follow storage requirements to prevent contamination.
2. Extract samples in accordance .with L23-1 maintaining sample integrity.

Constraints / Issues

Method is highly susceptible to environmental, sampler and analytical contamination.

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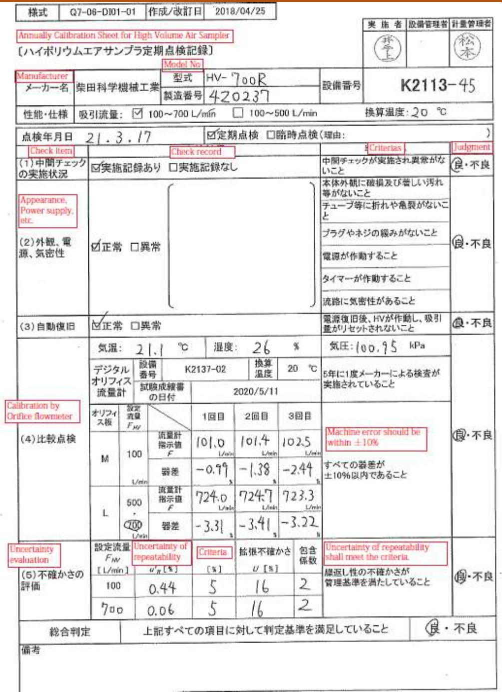
Reference Information: Steps for Introducing D/F Analysis

Specific requested materials for AQMS

➢ a: Example of the high-volume air sampler calibration record (Annual inspection)

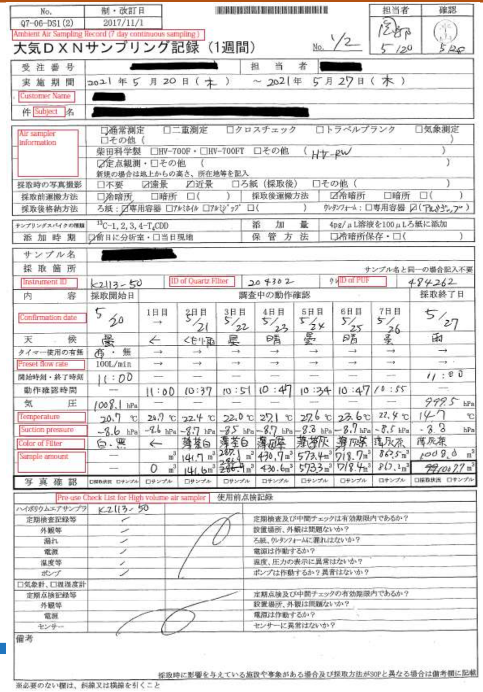

Q7-06-DI01-01 2018/04/25
Annually Calibration Sheet for High Volume Air Sampler
〔ハイボリウムエアサンプラ定期点検記録〕

5

Reference Information: Steps for Introducing D/F Analysis

Specific requested materials for AQMS

➢ b: Example of the ambient air quality sampling record

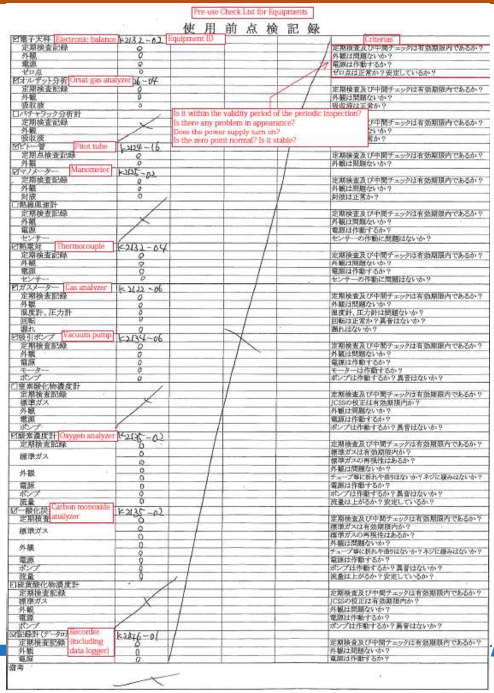

Q7-06-DS1(2) 2017/11/1
Ambient Air Sampling Record (7 day continuous sampling)
大気ＤＸＮサンプリング記録（1週間）

6

Reference Information: Steps for Introducing D/F Analysis

Specific requested materials for AQMS

➢ c: Example of the pre-use check list for stack gas sampler


Pre-use Check List for Equipments
使用前点検記録

7

Reference Information: Steps for Introducing D/F Analysis

Specific requested materials for AQMS

➢ d: Example of the stack gas sampling record


Q7-06-DS4 2017/11/1
Stack Gas Sampling Record
排ガスＤＸＮサンプリング記録

8

Reference Information: Steps for Introducing D/F Analysis

◆ ERLSD: Activity 3-3 (SOP)

I. The draft SOPs were already shared with JET in May, and JET is now reviewing and will finalize it in August. In late August or later, JET would like to have an online meeting with ERLSD to explain the results.

II. Japanese official methods (JIS) for D&F analysis were revised and English documents became available just recently. JET will share the documents with ERLSD.

◆ ERLSD: Activity 3-4 (Analysis, QA/QC)

I. JET reviewed the details of the calibration curve development and confirmed that the results were good. This is the first time that JET has confirmed that standard solutions have been properly measured.

II. If possible, JET would like to know the plan/ schedule of initial performance tests (e.g. window defining mixture, method detection limit, etc.) required in the EPA methods, in advance of the next online meeting with ERLSD.

III. If ERLSD is now facing any technical difficulties in developing the GC/HRMS method, Please let JET know.

4th ITWG Meeting
for

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

2nd Aug 2021

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

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.

Starting of Activity 4-4

Activity 4-4
Summarize and provide suggestion/recommendation to improve utilization of other SWM technologies to target LGUs.

- In Activity 4-3, sub-group member corrected the example of good technology/good practice.
- In Activity 4-4, the goal is for the C/P to be able to evaluate every technology, taking into account the characteristics of the LGU.
- LGUs are evaluating the technical examples in each waste management stage (theme) from the following perspectives:
  - ✓ Technical viability
  - ✓ Economical feasibility
  - ✓ Cultural acceptability
  - ✓ Environmental soundness

Evaluation example for Activity 4-4

3. Intermediate treatment /3R

3-11. Promotion of recycle
Waste bank (Bank Sampah)
Indonesia

Target waste	Implementation entity
Recyclable wastes	Government of the City etc.,

Outline

- Residents(Customers) bring recyclable waste to the waste bank and the profit generated when the recyclable waste is sold to a recycler is returned to the customers.
- In 2012, the Ministry of the Environment of Indonesia published implementation guidelines, which stipulate the roles of facilities, measuring of the weight and recording methods, etc.

Good Practice Point

- When collecting recyclable waste, the market value equivalent of recyclable waste is recorded in the "deposit passbook". Customers will be able to hand over recyclable waste to the waste bank, save money in their account, and withdraw cash after a certain period of time.
- By transferring the responsibility of waste treatment, the cost shouldered by the local government is reduced.

Technical aspect

Concerns: Needs careful planning, and consultation from various stakeholders

Applicable conditions: Learn from the experiences of those who adapted the system.

Initial and operating costs need to be considered.

Economic aspect

Concerns: Not all recyclables have market demand.

Applicable conditions: Define materials that have market value.

Cultural aspect

Concerns: Needs cooperation of the residents.

Applicable conditions: Awareness campaigns

Depending on the condition of the waste and the storage conditions, pests may occur.

Environmental

Concerns: Acceptable

Applicable conditions: -

添付資料11

Schedules of the Sub-group meeting for OP4

Beginning of August 2021 (Meeting with each target LGU and JET)

Review of the technology assessment report prepared by the target LGU and consideration of the most appropriate technology

- ✓ **Quezon City**: We want to have a meeting with the new task force as soon as possible, then complete the evaluation in a meeting, explaining the details.
- ✓ **Davao City:** We have already received evaluations of all good practices. Davao city has been asked to select the most appropriate technology for the next subgroup meeting.
- ✓ **Cebu City**: We want to have a meeting with Cebu city as soon as possible, then complete the evaluation in a meeting, explaining the details.

Beginning of October 2021

- ✓ All SG members
- ✓ Target LGUs to give a presentation on the results of the Evaluation of Technology

Beginning of December 2021

- ✓ All SG members
- ✓ Summarize and provide suggestions/recommendations for target LGUs and other LGUs

For Activity 4-5, target LGUs will give a presentation on the seminar.

The 2nd Newsletter

Allocation of the Article for the 2nd newsletter

Output	Article	Writer/s	Page
Output1	Article is already submitted by PMO. ・ Technical Standard - Background and Overview - Approved Technical Standard	PMO	1-2
Output2	・ Introduction of WTE project in 3LGUs - Overview - Status of project, year of operation - Technology and treatment capacity - Messages to stakeholders ・ MOU (if approved)	Davao City* *Next writer will be Cebu city	1-2
Output3	- (This topic is skipped, as it was featured in the previous issue.)	-	-
Output4	Articles are already submitted by each LGUs. ・ Good Practice in 3 LGUs ・ Expectations to TCP (What will you learn? What will you achieve?)	3LGUs	1 page for each LGUs (Total of 3 pages)
Other	・ Additional activities (if the minutes approved by the JCC)		

Deadline

•16th July (To be completed approval within the agency.)

添付資料11

PROJECT ACTIVITY : **4th Inter-agency Technical Working Group (ITWG) Meeting**
DATE/TIME : **02 August 2021, 1:00-4:00 PM (Philippine Time)**
VENUE : **Video Conference through Microsoft Teams**
MATERIALS : https://bit.ly/Filesfor4thITWGMtg

Agenda Topics	Issues/Discussions/Actions	Comments/Agreements/ Timelines	Required Actions/Responsible Agency/Person
1.) Opening/ Welcoming Remarks (EMB OIC Assistant Director Vizminda A. Osorio on behalf of EMB OIC Director William P. Cunado)	● On behalf of the EMB Director , Engr. William P. Cuñado, EMB OIC Assistant Director, Engr. Vizminda 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 extended her thanks to the ITWG Members for their continuous support and participation to the TCP in order to promote a better solid waste management system in the country.		
2.) Discussion of Objectives of the Meeting & Acknowledgement of the ITWG Members and Sub-group Members (Ms. Elvira S. Pausing, EMB-SWMD-PMO)	● Ms. Elvira Pausing reviewed the proceedings of the last ITWG Meeting particularly highlighting the key discussion points per Project Output. ● The meeting objectives were presented along with the meeting agenda. ● 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, Engr.. Roxanne Barcenas of EMB-SWMD-SWPPDS, the assigned emcee for the ITWG meeting, turned over		

	the floor to AD Osorio to formally preside over the meeting. ● With quorum reached, and no further comments from the body, AD Osorio asked for a move to adopt the agenda as presented, which was moved for adoption and seconded by Engr. Reynaldo Esguerra of DOST-ITDI and Ms. Patricia Orante of QC LGU respectively.	● Agenda was moved without further modifications.	
3.) Project Output 1: **Presentation of the draft Case Study Analysis for the Guideline of Best Available Technology/ Best Environmental Practice (BAT/BEP)** (Mr. Takahiro Kamishita, JICA Experts Team)	● Mr. Takahiro Kamishita presented the Case Study following the outline below: ○ Rationale ■ Details the background that lead to the decision to draft the BAT/BEP Guidelines ○ Formulation process of BAT/BEP Guidelines ■ Timeline of activities that were undertaken to arrive at the draft Guidelines ○ Comments and responses ■ Highlights of the comments received from the subgroup that were adopted in the revision, including the target waste, clustering guidelines, and the title of the document. ○ Next Steps	● Mr. Christian Perez of JICA Philippines inquired on how the Case Study will be adopted by DENR. ○ Mr. Kamishita responded by saying that in the process of drafting the guidelines, the team came across a similar BAT/BEP study for Meat Establishments, which is used as a guidance tool as well as a reference for the technical guidelines and technologies, and the Case Study can be adopted similarly. ○ Ms. Pausing added that the Case Study will be published and serve as a key reference in the development of BAT/BEP Guidelines later on. ○ Mr. Kamishita clarified that JET wants to publish the	

	■ Succeeding points of action that need to be done to formalize the adoption of the document. ● Mr. Kamishita mentioned that the specifics of the document were no longer detailed given that the document had already been sent out last July 19, 2021.	document through DENR and not just in the TCP Newsletter, given the content of the Case Study. ○ Ms. Pausing agrees for the Case Study to be published in DENR channels too, specifically in the EMB website.	
3.) Project Output 1: Status on the endorsement and procedure on the Approval of the WTE Technical Standards (Ms. Elvira Pausing on behalf of Ms. Ma. Delia Cristina M. Valdez)	● Ms. Elvira Pausing presented the updates on the endorsement of the Technical Standards (TS) on behalf of Ms. Delia Valdez. She presented and discussed the timeline leading up to the current status as follows: ○ Feb 9 - Approval by JCC ○ May 24 - endorsed by JCC Chairman USec. Jonas R. Leones and Co-Chairman DOE Assistant Secretary Roberty Uy to the EMB Director ○ July 5 - Endorsed by the EMB Director to the Environmental Policy and Technical Working Group (EPTWG) ○ July 15 - Deliberation of the EPTWG	● Ms. Pausing also noted the comments from the EPTWG in the presentation, but will be discussed with JET first for appropriate action. ● AD Osiorio inquired on the next steps of the activity. ○ Ms. Pausing mentioned that as agreed during the EPTWG meeting, the TS was disseminated last week and will be for review first before further deliberation. ○ Ms. Pausing noted that only 2 (EIA, EEID) of the 8 members of the EPTWG have extended comments. ○ AD Osorio proposed to give the EPTWG one more week to send comments, and proposed to schedule the next deliberation next week. ○ Ms. Pausing raised that the EPTWG decided to adopt	● [PMO] To share EPTWG comments on the TS to JET. ● [PMO] To coordinate with EPTWG to give comments to the TS by August 6, 2021

		the TS as a Joint Administrative Order (JAO), together with DOST and DOE, which may affect the timeline of the adoption. ● Mr. Christian Perez asked how different the JAO is from a DAO in terms of the approval process. ○ Ms. Crisostomo noted that the approval of the JAO takes longer because other agencies are also involved in the process. ○ She further adds that the decision to make the TS into a JAO is because the extent of the TS covers standards outside the scope of DENR.	● [PMO/EPTWG] To share the approval process and timeline of the approval of the TS given the JAO adoption format.
4.) Project Output 2: **Updates on the Project Activities** (Mr. Makoto Kosaka, JICA Experts Team)	● Mr. Makoto Kosaka presented the current progress of each of the activities for the 3 LGUs under Project Output 2, noting the bottlenecks and challenges faced for the ongoing activities. ● Mr. Kosaka also discussed the expanded collaboration between JET and PPPC, noting the timeline and the specific activities that will be pursued. He further noted that this collaboration will be helpful for Activity 1-6 later on. ● Lastly, he emphasized the need to pursue the signing of the MOUs to proceed with		● [JET, QC LGU] To set up a meeting to discuss Activities of Output 2. ● [JET, CC LGU] To set up a meeting to discuss Activities of Output 2. ● [JET, DC LGU] To set up a meeting to discuss Activities of Output 2.

	the activities under Output 2. He also noted that it would be vital to meet with the LGUs and PMO to discuss how the activities can be better implemented.		
4.) Project Output 2: **Status of Approval/ signing of the MOU** (Mr. Louie Sabater, Quezon City LGU)	● Mr. Sabater noted that the MOU is still for review and no further updates have been noted.		● [QC LGU] To follow up on the signing of the MOU.
4.) Project Output 2: **Status of Approval/ signing of the MOU** (Engr. Glory Manatad, Cebu City LGU)	● Ms. Pausing relays that the MOU has already been signed by the Regional EMB Director and has already been endorsed to the EMB Director for approval and signature.		
4.) Project Output 2: **Status of Approval/ signing of the MOU** (Engr. Elisa Madrazo, Davao City LGU)	● Engr. Madrazo relays that the MOU is still in the City Council Office despite the relentless follow up, but they were assured that they will be updated once more recent developments are taken on the MOU signing.		● [DC LGU] To follow up on the signing of the MOU.
5.) Project Output 3: **Updates on the Project Activities** (Mr. Satoshi Miyaichi, JICA Experts Team)	● Mr. Satoshi Miyaichi shared the current progress of the activities under Project Output 3, noting that Activities 3-3 and 3-4 are ongoing, which is done with AQMS and ERLSD. ● Mr. Miyaichi noted the outstanding requests that JET has issued to AQMS, and noted additional requests including: ○ Example of high-volume air sampler calibration record (Annual inspection) ○ Example of the Ambient Air Quality Sampling Record ○ Example of the pre-use checklist for stack gas sampler	●	● [AQMS] To provide the missing attachments to the Air Quality Manual previously requested, and new requests as detailed in the presentation. ● [ERLSD] To provide additional requests for information as detailed in the presentation. ● [JET] To share results of the SOP review with ERLSD by the end of August.

	○ Example of the stack sampling record ● He also noted additional request for information from ERLSD: ○ Plan/ schedule of initial performance tests required in the EPA methods ○ Technical difficulties in developing GC/HRMS methods, if any.		
6.) Project Output 4: **Updates on the Project Activities: Assessment of the SWM technologies by LGUs** (Ms. Kyoko Kimura, JICA Experts Team)	● Ms. Kyoko Kimura shared the current progress of the activities under Output 4, noting that Activity 4-4 has been commenced since the last ITWG Meeting. ● Ms. Kimura showed the evaluation example from Davao City under Activity 4-4, demonstrating how the evaluation guidelines were incorporated in the review. ● Her presentation detailed the next steps which includes meeting with the LGUs to discuss the Activity 4-4 in detail, especially for Quezon City and Cebu City. ● Ms. Kimura also shared the outline of the 2nd TCP newsletter, following up with Davao City on the article submission.	○	● [JET, QC LGU] To set up a meeting to discuss Activity 4-4. ● [JET, CC LGU] To set up a meeting to discuss Activity 4-4. ● [JET, DC LGU] To set up a meeting to discuss Activity 4-4. ● [DC LGU] To send article for 2nd TCP Newsletter to JET
7.) Open Forum (EMB OIC AD Vizminda A. Osorio)		[BAT/BEP Case Study] ● Engr. Esguerra inquired if the draft JAO had already been prepared. ○ Ms. Pausing noted that there is still no draft currently.	

		○ Engr. Esguerra further noted that since DOE is not a part of the NSWMC, including them in the JAO will have to be channeled directly to the said agency ● Engr. Sabater noted that additional comments will be given to JET on the BAT/BEP Guidelines. ○ AD Osorio proposed to give until August 6 for the ITWG to send comments, for finalization by next week. ○ Mr. Perez proposed for the August 6 deadline to be a hard deadline for the panel in order to facilitate the finalization of the Case Study. ● Ms. Pascual noted that a correction in the FIT section, previously pointed out by DOE has yet to be updated. [JCC Meeting Minutes Signing and DENR Comments on the draft Minutes of Meeting (MM) for project extension] ● Mr. Perez also inquired about the status of signing of the JCC Meeting Minutes and DENT comments on the draft MM for project extension ○ Ms. Obmerga shared that the minutes of the meeting	● [ITWG] To extend comments by August 6, 2021. ● [JET] To update the Case Study Analysis on the FIT section

		are for endorsement to ASec Amaro and additional information is requested from PMO. ○ Mr. Perez requested for FASPS to provide a timeline for the approval of the minutes and commenting on the draft MM ○ Ms. Obmerga replied that the minutes is expected to be signed within 2 weeks, same with the draft MM	● [FASPS] To facilitate the JCC Meeting minutes signing and commenting on draft MM for project extension on or before August 16.

8.) Wrap-up, Required Actions, and Agreements (Ms. Andrei Mallare, JICA Experts Team)	Ms. Andrei Mallare of JET wrapped up the earlier discussions and reiterated the arrangements and timelines as agreed. The assignments are organized per office for ease of reference: **[AQMS]** ● [AQMS] To provide the missing attachments to the Air Quality Manual previously requested, and new requests as detailed in the presentation. **[ERLSD]** ● [ERLSD] To provide additional requests for information as detailed in the presentation. **[FASPS]** ● [FASPS] To facilitate the JCC Meeting Minutes signing and commenting on draft MM for project extension on or before August 16. **[ITWG]** ● [ITWG] To extend comments by August 6, 2021. **[JET]** ● [JET, QC LGU] To set up a meeting to discuss Activities of Output 2. ● [JET, CC LGU] To set up a meeting to discuss Activities of Output 2.	[August 6] ● Deadline for EPTWG to send comments on the TS ● Deadline for the ITWG to send comments on the BAT/BEP Case Study [August 16] ● Deadline for signing of the JCC Meeting Minutes and commenting on draft MM for project extension	

	● [JET, DC LGU] To set up a meeting to discuss Activities of Output 2. ● [JET] To share results of the SOP review with ERLSD by the end of August. ● [JET, QC LGU] To set up a meeting to discuss Activity 4-4. ● [JET, CC LGU] To set up a meeting to discuss Activity 4-4. ● [JET, DC LGU] To set up a meeting to discuss Activity 4-4. ● [JET] To update the Case Study on the FIT section **[LGU- Quezon City]** ● [JET, QC LGU] To set up a meeting to discuss Activities of Output 2. ● [QC LGU] To follow up on the signing of the MOU. ● [JET, QC LGU] To set up a meeting to discuss Activity 4-4. **[LGU- Cebu City]** ● [JET, CC LGU] To set up a meeting to discuss Activities of Output 2. ● [JET, CC LGU] To set up a meeting to discuss Activity 4-4. **[LGU- Davao City]** ● [JET, DC LGU] To set up a meeting to discuss Activities of Output 2. ● [DC LGU] To follow up on the signing of the MOU.		

	• [JET, DC LGU] To set up a meeting to discuss Activity 4-4. • [DC LGU] To send article for 2nd TCP Newsletter to JET **[PMO]** • [PMO] To share EPTWG comments on the TS to JET. • [PMO] To coordinate with EPTWG to give comments to the TS by August 6, 2021 • [PMO/EPTWG] To share the approval process and timeline of the approval of the TS given the JAO adoption format.		
10.) Closing Remarks (Ms. Momoko Otsuka, JICA Philippines)	• Ms. Otsuka expressed her gratitude to the ITWG members for their continuous support to the TCP, and enjoins everyone to be more involved as we go along in the TCP implementation.		

Prepared by:

Ms. Nikole Andrei Louise Mallare
Research Assistant
JICA Experts Team

Reviewed by:

Ms. Elvira Pausing
Supervising EMS & Assistant Project Manager, SWMD- PMO
DENR-EMB-SWMD

Mr. Takahiro Kamishita
Chief Advisor
JICA Experts Team

Recommended by:

Ms. Ruby De Guzman
Chief, Biomass Energy Management Division
Department of Energy

Approved by:

Engr. Vizminda A. Osorio
OIC Assistant Director
DENR-EMB

添付資料11

11-1: ITWG会議

11-1-5 ：第5回ITWG会議

5th Inter-agency Technical Working Group (ITWG) Meeting

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

05 April 2022, 1:00 PM – 3:00 PM

(*Hybrid Meeting**)

PROGRAMME

TIME	ACTIVITY	SPEAKER
1:00 PM	Philippine National Anthem Invocation	SWMD-Project Management Office (PMO)
1:10 PM	Opening/Welcome Remarks	**Engr. William P. Cuñado** *OIC-Director, EMB*
1:20 PM	Meeting Objectives, Tentative Agenda, & Acknowledgement of the ITWG Members and Sub-group Members	**Ms. Elvira S. Pausing** *Supervising EMS, EMB-SWMD & Assistant Project Manager, SWMD-PMO*
Meeting will be presided by: **ITWG Chairman - Director William P. Cunado,** EMB-DENR **ITWG Co-Chairman- Ms. Ruby B. de Guzman,** REMB-BEMD, DOE • Welcome Message/Call to Order • Adoption of the Agenda		
1:40 PM	**Project Output 1**: • Updates/Status on the various Project Activities • Status on the endorsement to the EMB of the Approved Case Study Analysis for BAT/BEP Guidelines • Status on the Preparation and Endorsement of the JAO on the Guidance Document for the WtE-ACC Facilities	**Mr. Takahiro Kamishita** *Project Advisor, JET* **Ms. Juvinia P. Serafin** *OIC-Chief, SWM Division, EMB*
2:10 PM	**Project Output 2**: • Updates/Status on the various Project Activities • Updates from the LGU counterparts on their WtE Project implementation • Updates on the comments of the Annotated Outline for the 10-year SWM Plan • Status of Approval/Signing of the Memorandum of Understanding (MOU) by the 3 LGUs	**Mr. Makoto Kosaka** SWM/PPP, JET **Representatives of partner LGUs** **EMB-SWMD** **Ms. Elvira S. Pausing** *Supervising EMS/SWPPDS, SWMD & Assistant Project Manager, SWMD-PMO*
2:30 PM	**Project Output 3**: • Updates/Status of the various Project Activities and progress of coordination with EMB-ERLSD	**Mr. Satoshi Miyaichi** EMP/ESC, JET **Speaker to be assisted/supported by the EMB-ERLSD & EQMD & all Sub-group members for OP3*
2:50 PM	**Project Output 4**: • Updates/Status of the various Project Activities • Presentation/Discussion of the final Booklet of Good Practices and Good Technologies and request for approval	**Ms. Kyoko Kimura** Public Enhancement/Training Arrange/Coordinator, JET **Speaker to be supported by SWMD-PMO & all Sub-group members for OP4*
3:10 PM	***Open Forum***	
3:25 PM	Way forward/Next Steps	• **ITWG Chairman** (DENR-EMB) • **ITWG Co-Chairman** (DOE)
3:35 PM	Wrap-up (Issues/Agreements/Timelines)	**Ms. Andrei Mallare** *Project Assistant, JET*
3:45 PM	Closing Remarks	**Ms. Ruby B. de Guzman** *Chief, Biomass Energy Management Division, REMB, DOE*
Master of Ceremonies		**Engr. Roxanne R. Barcenas** *Technical Assistant, EMB-SWMD-PMO*

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

NOTICE OF MEETING

TO : **ALL CONCERNED GOVERNMENT AGENCIES**

DEPARTMENT OF SCIENCE ND TECHNOLOGY
Engr. Nonilo Peña – Chief SRS, PCIEERD
Engr. Reynaldo L. Esguerra – Chief SRS, ITDI
Engr. Emelita A. Dimapilis – Supervising SRS, ITDI
Engr. Dante C. Vergara - Senior SRS, ITDI
Engr. Rochelle L. Retamar - Supervising SRS, ITDI

DEPARTMENT OF ENERGY
Ms. Mylene C. Capongcol – Director, REMB
Ms. Ruby De Guzman – Division Chief, REMB
Mr. Romeo M. Galamgam – Supervising SRS, REMB
Ms. Charisse Jane Pascual – SRS II, REMB
Ms. Gemmalyn Galang - SRS I, REMB
Ms. Letty C. Abella – Senior SRS, DOE-ECCD

DEPARTMENT OF INTERIOR AND LOCAL GOVERNMENT
Atty. Ma. Rhodora Flores - Chief, BLGS
Mr. Carlo Mari Crisregienald C. Tan – Project Manager, BLGS
Ms. Marla Clarisol L. Agas – PDO II, BLGS

NATIONAL ECONOMIC DEVELOPMENT AUTHORITY
Mr. Kevin Gilbert M. Manzano - SREDS, IPG
Mr. Gilbert V. Kintanar, Jr. - SREDS, IPG
Ms. Marina Ferrer- EDS I, IPG

PUBLIC-PRIVATE PARTNERSHIP CENTER
Atty. Phebean Belle A. Ramos-Lacuna – Director, PFPEMS
Ms. Justine E. Padiernos – PDO, Project Development Service
Atty. Aislyn Yao- Division Chief, PFPEMS

LOCAL GOVERNMENT UNITs
Mr. Vincent Ferdinand Paul G. Vinarao- PDO III, LGU Quezon City
Mr. David John S. Vergara- EMS II, LGU Quezon City
Mr. Richard S. Santuile-Action Officer, LGU Quezon City
Engr. Louie Sabater, Chief, TFSWM PMT, LGU Quezon City
Ms. Patricia Orante, TFSWM PMT, LGU Quezon City
Engr. Editha D. Peros – Department Head, LGU Cebu City
Engr. Glory Rose C. Manatad – EMS II, LGU Cebu City
Atty. Dwight Tristan P. Domingo - Asst. City Administrator, LGU Davao City
Engr. Elisa P. Madrazo – City Government DH II, LGU Davao City
Engr. Lakandiwa Soliman R. Orcullo – IEC Unit Head, LGU Davao City

DENR-FOREIGN ASSISTED AND SPECIAL PROJECT SERVICE
Director Wilfredo J. Obien
Mr. Eddie Abugan, Jr.- Chief, PMD
Ms. Marianica Philina L. Obmerga- PEO II

JICA PHILIPPINES
Ms. Momoko Otsuka – Assistant Representative, JICA Philippines
Mr. Christian Vic Perez – Program Officer, JICA Philippines

DENR-EMB CENTRAL OFFICE
Ms. Fatima Anneglo R. Molina – Chief, ERLSD
Mr. Roger C. Evangelista Jr. – SRS II, ERLSD
Mr. Sammy L. Aytona - SRS II, ERLSD
Engr. Jundy T. Del Socorro – Chief-AQMS, EQMD
Engr. Wyona Kay C. Rativo – EMS II, AQMS, EQMD
Engr. Marcelino N. Rivera, Jr. – OIC-Chief, EQMD
Mr. Geri Geronimo Sanez – Chief, HWMS
Engr. Santini Quiocson – Engineer II, HWMS
Engr. Irvin Cadavona – EMS II, HWMS
Ms. Consolacion P. Crisostomo – Chief, PPPDD
Ms. Mary Esther D. Ofiaza – PO III, PPPDD
Atty. Janice P. Pamoso – Chief, LD
Ms. Fatima E. Millan - SI III, LD

DENR-EMB REGIONAL OFFICE
Mr. Mikko M. Caniezo- EMS II, EMB NCR
Mr. John Roy B. Kyamko- Supervising EMS, EMB Region VII
Mr. Jay Christoffer Bawi-in, Chief, EMB Region XI

JICA EXPERTS TEAM
Mr. Takahiro Kamishita- Chief Advisor, SWM1/WTE1
Mr. Tomoyuki Hosono- Deputy Chief Advisor, SWM2/WTE2
Mr. Satoshi Higashinakagawa- SWM1/WTE1 Expert
Mr. Makoto Kosaka- SWM-PPP Expert
Mr. Satoshi Miyaichi – EMP/ESC Expert
Ms. Kyoko Kimura- PE/TA/Coordinator
Ms. Iku Sato, Waste treatment/3R, JET
Engr. Nikole Andrei Louise Mallare- Project Assistant
Ms. Rose Quiocho, Project Assistant
Mr. Eric Cea- Project Secretary

SELECTED SWMD TECHNICAL & SUPPORT STAFF
Ms. Juvinia P. Serafin – OIC-Chief, SWMD & PM-PMO
Ms. Elvira S. Pausing – Supervising EMS, SWMD-PPDS & APM-PMO
Ms. Nelie A. Dimer – EMS II, SWMD-PPDS
Engr. Roxanne R. Barcenas – Technical Assistant, SWMD-PPDS
Ms. Rodeth A. Antonio – Monitoring Officer, SWMD-PPDS

FROM : **THE DIRECTOR**
Environmental Management Bureau

DATE/VENUE: **05 April 2022, Tuesday, 1:00 PM *(Blended)***

SUBJECT : ***5th Inter-Agency Technical Working Group (ITWG)*** **RELATIVE TO THE IMPLEMENTATION OF THE TECHNICAL COOPERATION PROJECT (TCP) FOR THE CAPACITY DEVELOPMENT ON IMPROVING SOLID WASTE MANAGEMENT THROUGH ADVANCED/INNOVATIVE TECHNOLOGIES.**

AGENDA: *Please see attached Sheet*

We would like to inform you that there will be an Inter-Agency Technical Working Group Meeting to present and discuss the implementation updates of the Technical Cooperation Project (TCP) for the Capacity Development on Improving Solid Waste Management through Advanced/InnovativeTechnologies.

Attached is the copy of the Tentative Agenda for ready reference.

Your participation/attendance is highly enjoined.

ENGR. WILLIAM P. CUÑADO

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

5th Inter-Agency Technical Working Group (ITWG) Meeting

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

Update on the Project Activities

5th April 2022

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

Contents

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

1. On-going Activities of Output 1

1-1:	Prepare Best Available Technique (BAT) / Best Environmental Practice (BEP) guideline	Completed
1-2:	Study policy & mechanism to promote WTE projects	Completed
1-3:	Hold seminar to disseminate WTE technology	Being planned
1-4:	Prepare draft technical standards for WTE facility focused on waste incineration with power generation	Completed
1-5:	Prepare manual for management of bottom & fly ash discharged from WTE facility	Completed
1-6:	Prepare manual for planning, evaluation, formulation & supervision for WTE projects, and prepare evaluation criteria for EMB on 10-year SWM plans	On going
1-7:	Illustrate model procedure to introduce WTE facility	On going
1-8:	Review and update the existing regulations of sanitary landfill for municipal solid waste where incineration ash will be disposed of.	On going

2. Preparation of the PEFS Manual and Model Procedure of WTE Development

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

1-7: **Illustrate model procedure to introduce WTE facility**

Nature of the manual

- Mandates
  - WTE technical standards: being prepared as JAO (Activity 1-4)
- Reference for LGUs
  - *PEFS manual [The manual for planning, evaluation, formulation & supervision for WTE projects (Activity 1-6)*
  - Case study analysis for BAT/BEP guidelines (Activity 1-1)

1-6: Prepare manual for planning, evaluation, formulation & supervision for WTE projects, and prepare evaluation criteria for EMB on 10-year SWM plans
1-7: Illustrate model procedure to introduce WTE facility

1. History of the manual preparation

Timeline	Updates
January 12, 2022	10th OP1 Subgroup Meeting Request SGOP members to review for Section 1 and 2 of "Japanese WTF dev. Guide"
January 17, 26, 31, 2022	Follow ups to the request for comments
January 31, 2022	Deadline for accepting comments to Sections 1 and 2
February 22, 2022	11th OP1 Subgroup Meeting Comments from SG members are were shared

2. Comments from SG members for the manual preparation

Members	Comments
DENR-SWMD	No comments on Japanese Guideline Comments will be reserved for the Philippine Guidelines once ready
DOE	No comments so far; shall focus their comments on the utilization of energy produced by WTE plants
DOST	No comments
LGU-Quezon City	No comments
NEDA	No comments
PPPC	Comments were submitted

3. PPPC general comments on Section 1 and 2

- Emphasis that a *10-year SWM plan* is prerequisite to the formulation of the plans;
  Underscore the need to harmonize *facility plan and siting conditions* to the 10-year SWM plan of the LGU, => Noted.
- Differentiate *scope and depth* of each of the plans (Waste treatment master plan, Facility conceptual plan, Facility basic plan); =>Noted.
- At which point shall the technology employed in the facility be finalized?
  => How to deal with increasing MSW shall be principally specified in Master Plan phase, for example, 3Rs and compost can reduce AA% of waste, WTE Incinerator reduces BB%, its residue and rest CC% shall be disposed in Engineered Sanitary Landfill, etc. These quantified mass balance flow shall be required in 10-years MSWMP in Philippines.
- Where does the review of the current regulations of the LGU come in?
- *Restructuring of the report* to ease the flow of discussion, Arrange the details of the report in chronological order, =>Noted.
- Detail *siting requirements and conditions;* Section 4.2. noted of "conditions mandated in regulations for land use and welfare, as well as safety, economy, and ease of land acquisition"; could be itemized in this section for clarity =>Noted.
- Localizing the *list of regulations* that concern the establishment of WTF facilities,
  A similar summarized list of regulations like in Table 2-2 should be developed with the LGUs to specify the legal requirements that need to be satisfied =>Noted.

Timeline

- Introduction to Japanese **"Guideline for Planning and Designing of Waste Treatment Facilities (WTF) 2017"**
- Discussions in SG Meetings under Output 1
- How to adopt Philippines Context
- Whose authority will be attached (DAO? MC? or EMB's guide?)
- **JET's Drafting the Guidelines for Philippines**
- Distributing SG members for review (via email + SG meeting)
- After reflection of comments from SG members, endorsement to ITWG.
- Upon the approval of ITWG, endorsement to JCC.

3. Review on the Evaluation Criteria of 10-year SWM Plan

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

Background

- **The existing criteria for evaluation, "the Annotated Outline of 10-year SWM plan", was formulated based on RA9003.**
- **The Annotated Outline to be updated considering the WTE project in SWM of LGU because It was enacted on the premise that WTE technology should not be applied.**

添付資料11

Progress of Activity

1. Progress

Timeline	Updates
December 2021	JET reviewed the annotated outline and the related documents
January 13, 2022	Meeting with the evaluator of SWMD-EMB for 10-year SWM plan
January 21, 2022	JET submitted the comments on the annotated outline to SWMD-EMB
Now	Waiting for the discussion in the Executive Committee of NSWMC on JET's comments

2. JET comments on the Annotated Outline

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

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

4. Investigation of the Current Practice of Residual Ash Treatment in SWM Facilities

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

- Survey Participants
  - EMB Regional Offices with either Category A TSD : Onsite Treatment and Disposal Facilities or Category C TSD : Disposal Facilities.
    →**CAR, III, IVA, VIII, and X**

  - All Registered TSD Sanitary Landfills (only 4 facilities nationwide):
    *Based on lists of Registered TSDs as of March 31, 2021 published on EMB Website.
    - Metro Clark Waste Management Corporation (**MCWMC**) – Tarlac, Region III
    - Cleanway Environmental Management Solutions Inc. (**CEMSI**) – Cavite, Region IVA
    - Jorm Environmental Services Inc. (**JESI**) - Cavite, Region IVA
    - Cleanaway Philippines Inc. (**CPI**) – Leyte, Region VIII

  - A cement factory accepting the ash waste: Republic Cement

Status and Schedule of Interview and Data Collection

EMB Region / TSD	Meeting/Interview	Questionnaire	Data Request
CAR	N/A (No Ash-Accepting TSD)	OK (Jan 7, 2022)	N/A (No Ash-Accepting TSD)
Region III	OK (Jan 19, 2022)	OK (Mar 22, 2022)	**PENDING**
Region IVA	OK (Jan 14, 2022)	OK (Jan 31, 2022)	OK (Jan 31, 2022)
Region VIII	OK (Jan 11, 2022)	OK (Jan 25, 2022)	N/A (No Ash-Accepting TSD)
Region X	OK (Jan 18, 2022)	OK (Jan 31, 2022)	OK (Jan 31, 2022)
MCWMC	OK (Jan 13, 2022)	OK (Feb 2, 2022)	OK (Feb 2, 2022)
CEMSI	OK (Feb 21, 2022)	OK (Feb 28, 2022)	OK (Feb 28, 2022)
CPI	Denied Interview (No Ash in TSD)		
Republic Cement	OK (Mar 15, 2022)	OK (Mar 15, 2022)	OK (Mar 15, 2022)

Summary of Initial Findings

- Ash is not specified in Table 2.1 of DAO 2013-22, and hence must undergo TCLP to determine its classification.
  - Non-hazardous: Municipal Sanitary Landfill, Onsite Disposal, Reutilization
  - Hazardous: Stabilization on TSD → TSD Sanitary Landfill

- The specific form of solid waste is not indicated in waste manifests; hence, tracking of ash waste is difficult.

- The Philippine EIS system plays a major role in identifying the minimum monitoring parameters for Ambient and Effluent Air and Water Quality.

- One of the major considerations in the current TSD permitting evaluation process is effluent quality. The same is true in evaluation of Discharge Permits and Permits to Operate.

Way forward

- Follow – up on pending data and interview scheduling requests;
- Extension of interview participants:
  - Large-scale industrial waste ash producer (Power Plant etc.);
- Consolidation of results.

Thank you for your attention!

5th ITWG Meeting
Updates of Output 2

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

5th April 2022

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

Overview on OP2 as of March 2022

1. Progress of activities of Output 2,

2. MOUs between EMB and 3 LGUs,
   → basic condition of coordination with LGUs in the TCP, which affect implementation of the activity 2-4, 2-6, 2-7, 2-8.

3. Activities with PPPC,

4. Way forward;

1. Progress of each activity under Output 2,

Activities under Output 2		LGU QC	LGU CC	LGU DC
2-1:	Review current situation on introducing WTE facilities in the target LGUs	100%	100%	100%
2-2:	Clarify current waste flow & amount, set target on waste reduction in the existing SWM 10-year plans	100%	100%	100%
2-3:	Evaluate LGUs' land use plan for WTE projects	100%	100%	100%
2-4:	**Analyze & verify candidate WTE projects** selected from the existing F/S, unsolicited/solicited proposals	0%	50%	0%
2-5:	Define points & issues to be addressed for formulating WTE projects in the target LGUs	80%	80%	80%
2-6:	**Define proper responsibility of** the target LGUs in promoting **WTE projects under PPP scheme**	0%	50%	0%
2-7:	**Formulate technical specification of WTE facilities in each target LGU**	0%	0%	0%
2-8:	Define points & issues to be addressed for **supervising WTE projects** in the target LGUs	0%	0%	0%

Visit to LGU Cebu, March 17-18

Meeting	Agenda	Conclusion
EMB Regional Office	- Share travel itinerary - Align project updates	- CCENRO shared that the MOU signed by the EMB Director has not yet been endorsed to them; EMB-CO-PMO coordinating with Cebu City for the formal endorsement of the MOU to the Mayor
City Administrator (JVSC Chairperson), CCENRO	- Project onboarding and sharing of updates and requests	- CA requested for the Project Briefer to be sent to the City Mayor, for the possible creation of a TWG within Cebu City for the ease of implementation and communication. - In the interim, CA agreed to continue coordinating and responding to the requests of JET for the implementation of the TCP
SWM Board	- Project onboarding - SWM Summit Briefing	- Board members expressed support to the TCP and invited the team to participate in the upcoming SWM Summit and its Focused Group Discussion to address queries on WtE should there be any

2. MOUs between EMB and LGUs

- As of March 2022, the progress of the MOU signing of the 3 LGU's are as follows:

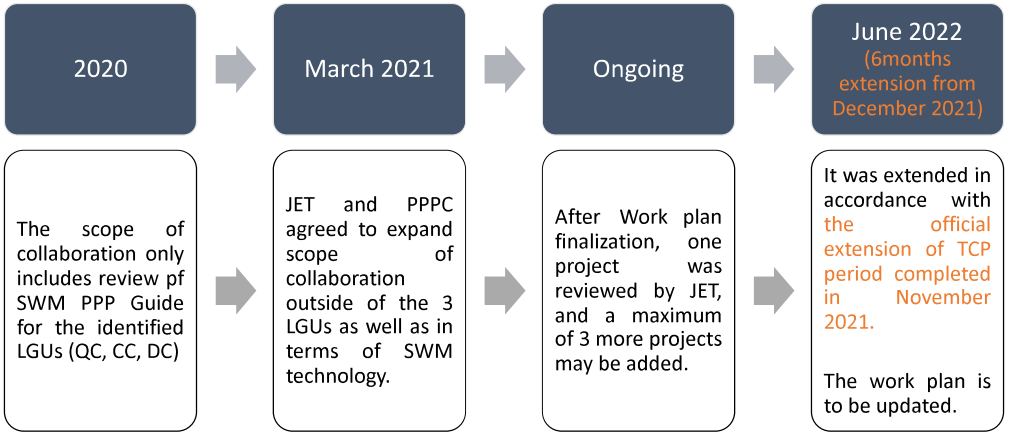
LGU	Update	Next Steps
Quezon City	For signature of the City Mayor	To be signed by the EMB RD once signed by the Mayor. Ms. Orante and Mr. Vergara are facilitating follow ups
Cebu City	Signed by the City Mayor, the EMB Regional and Central Director	PMO to facilitate formal endorsement of the signed MOU to the Cebu City Mayor
Davao City	Signed by the City Mayor and the EMB Regional Director(RO), for signature of the EMB Director	Signing will proceed once the issue is cleared because EMB CO Legal Division tackling a case filed against past DENR Sec Cimatu.

3. Activities with PPPC

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

1. Background
   - SWM PPP projects other than WTE are also promoted by the Governments
   - PPPC take important role to support LGUs to develop PPP project
   - PPPC 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, PPPC with support by JET

3. Activities with PPPC



3. Activities with PPPC

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

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4. Way forward

- Activities with target 3 LGUs are fully depending on
  -the situation of signing of MOUs, to be facilitated by EMB/LGU
  -readiness and Needs of the 3 target LGUs;

  > JET will continue to arrange the regular meetings with each of the 3LGUs;
  CC: Meeting with the City Mayor (April),
  DC: Meeting with WTE Project Office (April 21)

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

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

Thank you for your attention!

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5th Inter-agency Technical Working Group Meeting

Output 3

"Update on the Project Activities and Progress of Coordination with ERLSD"

5th April 2022 (Tuesday)

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

Contents

1. Implementation updates under Project Output 3
2. Progress of activities under Project Output 3
3. Future plans of Project Output 3

1. Implementation updates under Project Output 3

- Technical advice, documents sharing (blue text: ERLSD)
  - Aug 13: Sharing Japanese standard method for PCDD/DF & DL-PCB (JIS K 0311, 0312)
  - Aug 17: Sharing the ISS and WDS measurement results
  - Aug 23: Advice for GC temperature condition modification (based on ISS result)
  - Aug 23: Advice for changing the grouping time of SIM (based on WDS result)
  - Aug 31: Sharing the review result of the draft SOP for Method 23
  - Nov 16 to 18: Online training
    - ✓ Preparation of stack gas and ambient air sample capturing/ adsorbent materials
    - ✓ Sample recovery from sampling train
    - ✓ GC/HRMS measurement and Data processing by DIOK
  - Nov 26: Advice on troubleshooting for GC retention time fluctuation
  - Jan 19: Japanese PCDD/DF and DL-PCB related standards
  - Feb 22: Sharing the information on the requirements of the validation

1. Implementation updates under Project Output 3

- Online training: Nov 16 to 18
  - Contents were determined based on the activities conducted by the end of August.
- Online meeting: Jan 17, Feb 22
  - Agreed to hold a monthly meeting to get the activity on track.
- GC/HRMS operation
  - After the GC column replacement in May 2021, due to unexpected issues, the measurement operation was suspended until Feb 22, 2022.
    - ✓ UPS repair: May 24 to Oct 19, 2021
    - ✓ Communication problem between GC/HRMS and control PC
  - Measurements resumed on February 23, 2022.
- Onsite activity
  - Mar 4, 7, 8, 9, 11, 14, 15, 16, 18, 21, 24, 31, April 4

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2. Progress of activities under Project Output 3

■ Activity 3-3 (SOP)

☐ Method 23: Review completed. Validation or verification is needed due to the difference in the extraction process from the EPA method → If NMI Australia's SOP is available, only a verification test will be necessary.

☐ TO-09A: Under review. No major problems are expected. Currently, the priority is lowered to focus on activity 3-4.

2. Progress of activities under Project Output 3

■ Activity 3-4 (Sampling, analysis and QA/QC)

☐ Utilization of the Certified Reference Materials (CRM): CRM for fly ash can be used for the method development. Currently under consideration for the detail process.

☐ Comparison of measurement results between before and after the suspension of GC/HRMS measurements.

- Low sensitivity of GC/HRMS
- Peak shape distortion

→ Low sensitivity is the most significant issue.

→ JET opinion: Possibility of HRMS malfunction cannot be excluded, but GC should be inspected first. (5 months GC/HRMS shutdown, peak shape distortion)

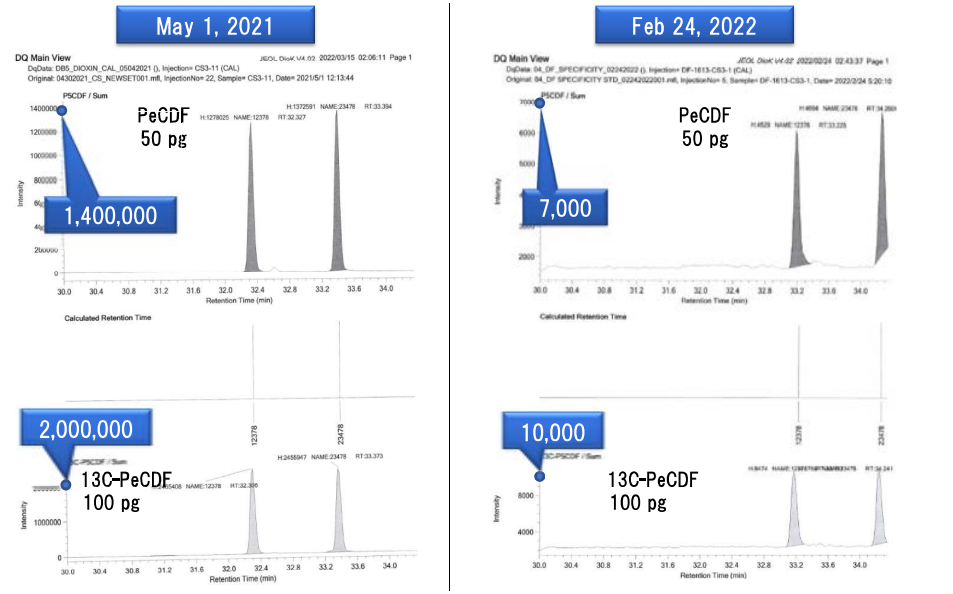
☐ Starting a trial on the full-time measurement to decide the grouping time of SIM

- Successfully measured 4 to 8 chlorinated compounds

→ It is now possible to examine the SIM grouping time by measuring WDS.

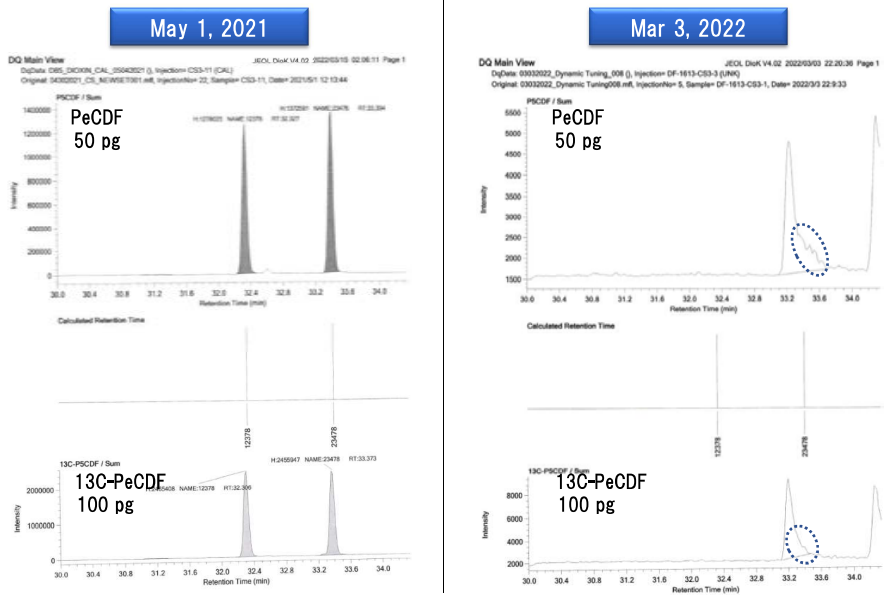
2. Progress of activities under Project Output 3

◆ Example of the low sensitivity



2. Progress of activities under Project Output 3

◆ Example of the peak shape distortion (tailing)



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2. Progress of activities under Project Output 3

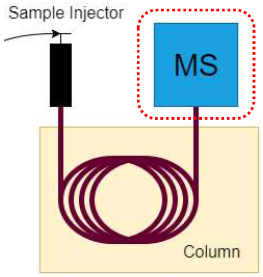
◆ Concerns with prolonged GC/HRMS shutdown

- What makes it difficult to identify the cause?
  - There are no measurement results immediately after the column replacement in May 2021.
  - GC/HRMS had been shutdown for five month.

  Possible causes:
  - The GC column was not installed properly in the middle of May 2021;
  - Inlet liner or column deteriorated due to the stop of the carrier gas;
  - HRMS deteriorated due to the release of vacuum condition

- There is no solution other than to improve one by one that may be causing the low sensitivity and confirm them through measurements.

2. Progress of activities under Project Output 3



GC

https://labchem-wako.fujifilm.com/europe/category/analysis/dioxin_pcb/index.html

HRMS:

GC:

2. Progress of activities under Project Output 3

■ What causes lowered sensitivity?

Blue text: ERLSD is able to handle

☐ The sample has not reached the detector
  → Possible causes: Not injected into GC (clogged syringe, low fluid level in vial), leakage (septum, inlet liner, column joints, etc.)
  → Countermeasures: Check/ exchange the syringe, check the fluid level in the vial, check gas leakage by the gas detector, replace septum/ inlet liner, reinstalment of the column

☐ Sample adsorption
  → Possible causes: Adsorption on deteriorated inlet liner and column
  → Countermeasures: Replace the inlet liner, replace/ trim column

☐ Ion source problem
  → Possible causes: Ion source contamination
  → Countermeasures: Ion source cleaning

☐ HRMS problem
  → Possible causes: Problems with lens and slit adjustment, etc.
  → Countermeasures: Adjust the lens and slit, etc.

2. Progress of activities under Project Output 3

■ Latest situation

☐ As of today, all the improvements that ERLSD can implement have been addressed, but the sensitivity is not yet improved.

☐ Need to wait for column reinstalment/ replacement and ion source cleaning by the service provider. In early March, ERSLD requested them to come to the laboratory, but they were able to start working on April 4.
  → Unavailability of the service provider is a big concern.

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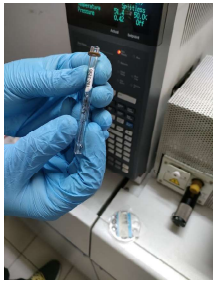
2. Progress of activities under Project Output 3

Checking micro syringe



Replacing inlet liner

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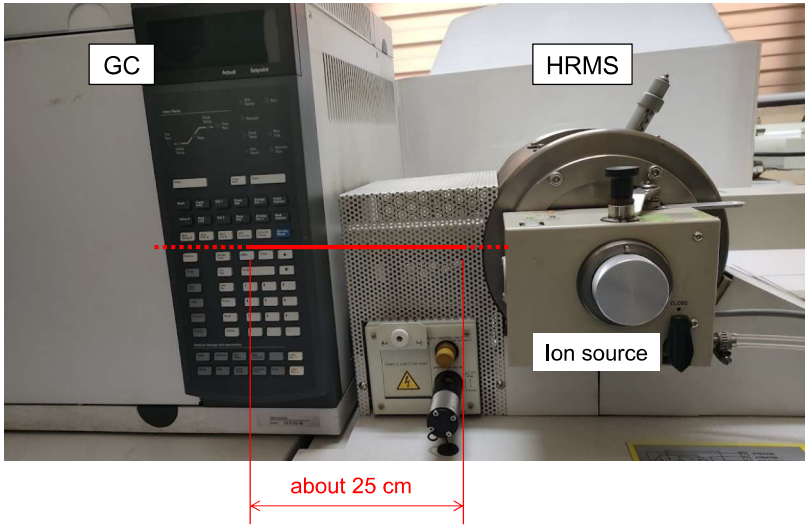
Checking gas leakage

Replacing Septum

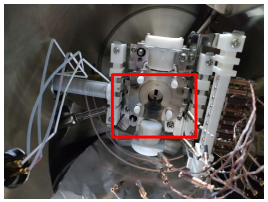
2. Progress of activities under Project Output 3

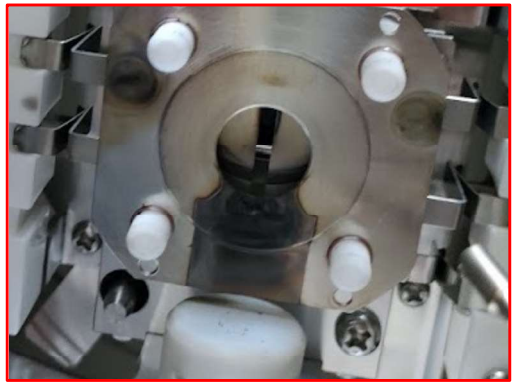
[Major issue] To remove the GC column fragment



2. Progress of activities under Project Output 3

[Not a major issue] To clean up the ion source and its surroundings





3. Future plans of Project Output 3

- ■ The highest priority should be given to getting the GC/HRMS to work properly.
- □ To install the GC column is the top priority. After the sensitivity of GC/HRMS returns to normal, the GC temperature rise condition is examined by ISS measurement, followed by the SIM grouping time setting by WDS measurement.
  - → As a result, the GC/HRMS operating conditions are determined.

- ■ Once the GC/HRMS operating conditions are finalized, verification of the MDL, etc. will commence.
- □ JET is not concerned about pretreatment, etc., since ERLSD has a high level of technical expertise in organic analysis. However, ERLSD needs to analyze a large number of samples at this stage. It is highly likely that cleaning of ion sources, etc. will be necessary.
  - → The availability of service providers remains a concern.

- ■ Maintenance around the ion source, such as column replacement and ion source cleaning, should be included in the routine inspection by ERLSD.
- □ If ERLSD is to perform many analyses in the future, it is almost essential.
  - → Mr. Shinkawa, a lab specialist is expected to come from Mr. Seki's lab in May and June. JET would like to include the maintenance work around the ion source in the training.

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5th ITWG Meeting
for

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

5th March 2022 13:00 p.m.

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

Agenda

1. Update on the Project Activities
2. Discussion and request for approval of the final Booklet of Good Practice and Good Technology

Review of the previous meeting

☐ **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**.

6th SG meeting

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.

Review of the previous meeting

☐ Schedule of Output4

Activities	Mar/'19 - Mar/'20	Apr/'20 - Mar/'22	Apr/'21 - Mar/'22
4.1		Information Collection	
4.2			
4.3	situation and issues		Presentation
4.4		Analysis	
4.5			
Sub-Group MTG	1st ★	2nd ★ 3rd ★ 4th ★ 5th ★ 6th ★	
Main activity	• Grasp the current situation and Identify the current issues by National SWM strategy and 10 year SWM plan in the target LGUs.	• 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.**	• Seminar for disseminating suggestion/recommendation is held.

The result of Activity 4-4

- For the Activity 4-4, each LGU evaluated the good practices/good technologies collected in Activity 4-3.

- Conclusively, JET proposed the suggestion/recommendation of utilize the technologies under the characteristics of the 3target LGUs.

The common characteristics of the 3target LGUs:
(1) One million or more population
(2) Seeking application of WTE technologies for their SWM

Specific characteristics of each LGU:
- Quezon City: Consists mostly of urban areas with very few rural areas.
- Davao City: Large area, mostly occupied by rural and forest areas. Agriculture and industry in urban areas are existing as well.
- Cebu City: There are urban areas and rural/forest areas.

Activity 4-4

1. Cost recovery of SWM

Charge on Waste	
Applicable sections of the case studies	1-1. Charge on a waste bag designated by local government 1-2. No Segregation –No Sticker -No Collection Policy 1-3. Volume-based Fee System Using Designated waste Bags 1-8. Collection Fee for Tagged Sack of Waste
Technology points	• There are many municipalities that use these system, including Japan and the Philippines. • The purpose of introducing the system is not to collect fees, but rather to reduce waste.
Common points to note for LGUs	• Costs of the waste bags will be an additional burden for the families and even greater burden for low-income families. • Consultation on proper charging is necessary. • Needs convincing and educating residents of the benefits of the system. • Different types of waste bags were prepared to separate the proper waste to be brought to the WTE facility from other waste. • Since there is a concern that free-riding and illegal dumping will occur, the fee should be an amount that takes into account the acceptability of residents. • Need to consideration, such as free collection of recyclable materials.

Activity 4-4

2. Collection and transportation

Organic Waste Collection	
Applicable sections of the case studies	2-6. kitchen waste collection 2-7. Food Waste Truck Program 2-8. High-tech food waste recycling machines
Technology points	• As this initiative is based on composting and reuse, methods to prevent other waste from entering the system should be considered. • Business waste is easy to deal with because food waste are generated in large quantities.
Common points to note for LGUs	• Since food waste is low in calories and prevents combustion in the WTE, should be considered ways to reuse it as much as possible.
Points to note for each LGU	• Composting is difficult to implement in urban areas because it requires manpower, space, and time, and it is not possible to treat a large amount of waste at one time, but there is room to consider implementing it in schools and community units.

Shibushi-City, in Japan

Activity 4-4

2. Collection and transportation

Transfer station	
Applicable sections of the case studies	2-9 and 2-10. Transfer Station
Technology points	• This facility is effective when the collection area is large and the distance to the intermediate treatment facility or disposal site is large. • It is also expected to reduce the number of collection vehicles and ease traffic congestion.
Common points to note for LGUs	• Consider whether it is necessary or not, based on the amount of waste accepted by WTE and the area of collection.
Points to note for each LGU	None

ShinMaywaIndustries,Ltd.

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Activity 4-4

3. Intermediate treatment/3R

Plastic as fuel (RPF)	
Applicable sections of the case studies	3-11. Refuse derived paper and plastics densified fuel
Technology points	• Solidification of combustible wastes as fuel. • In some cases, private companies have entered the recycling industry.
Common points to note for LGUs	• It is a condition that combustible waste (plastic and paper waste) is brought in a segregated manner. • It is necessary to secure a stable place to receive the products.
Points to note for each LGU	• It is important to secure recipients and should be checked the demand from nearby cement plants that can accept the products.

(GUUN Co.,Ltd Website)

2. Starting of Activity 4-5

Activity 4-5
Seminar for disseminating suggestion/recommendation is held.

- Activity 4-5 is positioned as the culmination of Activities of Output 4
- The following will be presented by each LGU at the Dissemination Seminar.

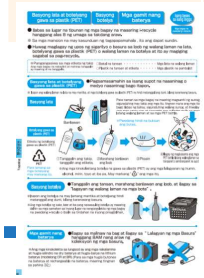
Presentations at the seminar

- Current status and challenges of waste management in LGUs
  1. Budget of Waste Management
  2. Waste Generation Quantity and Quality
  3. Collection and Transportation of Waste
  4. Intermediate treatment facility /3R
  5. Landfill
  6. Education of Waste Management
- Future waste management plan based on the consideration of the technologies other than WTE

Activity 4-4

5. Information, education and communication (IEC)

Promotion of Segregation	
Applicable sections of the case studies	5-2. Leaflet explaining waste segregation 5-3. Application for waste segregation
Technology points	• It is essential to create a collection calendar and inform residents of the items to be sorted and the collection date.
Common points to note for LGUs	• Such as bottles and cans, which cannot receive at the WTE facility, municipality should hold explanatory meetings for residents and thoroughly inform them of the situation.
Points to note for each LGU	• In Davao, at the grassroots cooperative project, a calendar of waste collection was prepared. Municipality will try to aware to residents until they understand the necessity of the activities.



Kawasaki-Shi, Japan

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