

West Java Regional Solid Waste Treatment and Disposal Project



West Java Regional Solid Waste Management
Environmental Protection Agency
West Java Province



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INTRODUCTION



WEST JAVA PROVINCE



- a. Indonesia has 34 Provinces
- b. West Java Province consist of 27 Local Governments: 9 Municipalities and 18 Regencies
- c. Population ± 45 million inhabitants
- d. The adjacent province to Jakarta
- e. The strategic position of West Java Province.

Solid Waste Management in Brief

- a. Based on National law No. 18/2008 concerning Solid Waste Management, the responsibility of SWM in Indonesia is undertaken by local government (municipality or regency)
- b. Fast growing population caused by urbanisation, industries, in line with city growing → **complexity of SWM.**
- c. Some problem of SWM in the Municipalities and Regencies are:
 - Limited budget for SWM
 - Technology still open dumping or landfilling
 - Lack of proper technology
 - Lack of private participation
 - Limited land availability especially for metropolitan area
- d. Possible cooperation among local governments, provincial government and private sector in solid waste management.

Regionalization of Landfill as Part of Solution

THE BENEFITS

- Improving availability of budgeting by cooperation among local(s), provincial and central government.
- Improving of SWM technology (thermal and/or non thermal)
- Improving of public and private partnership
- Implementing of “3R” concept.

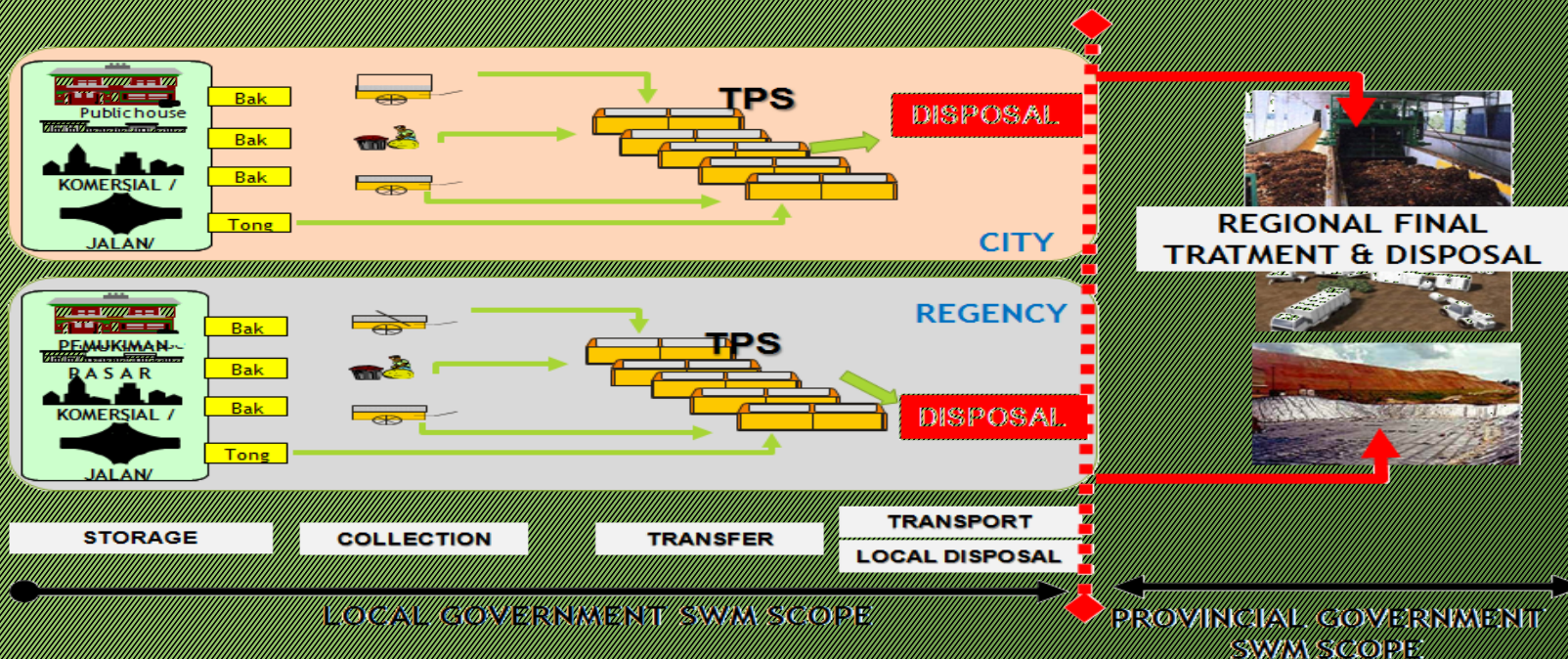
LOCAL AND REGIONAL SCOPE OF SWM

LOCAL GOVERNMENT (Municipality / Regency) :

Solid waste management from the source to the final treatment and disposal site

PROVINCIAL GOVERNMENT (Cross boundary Cooperation) :

Regional solid waste management at the final treatment and disposal site



West Java Regional Solid Waste Treatment and Final Disposal Sites

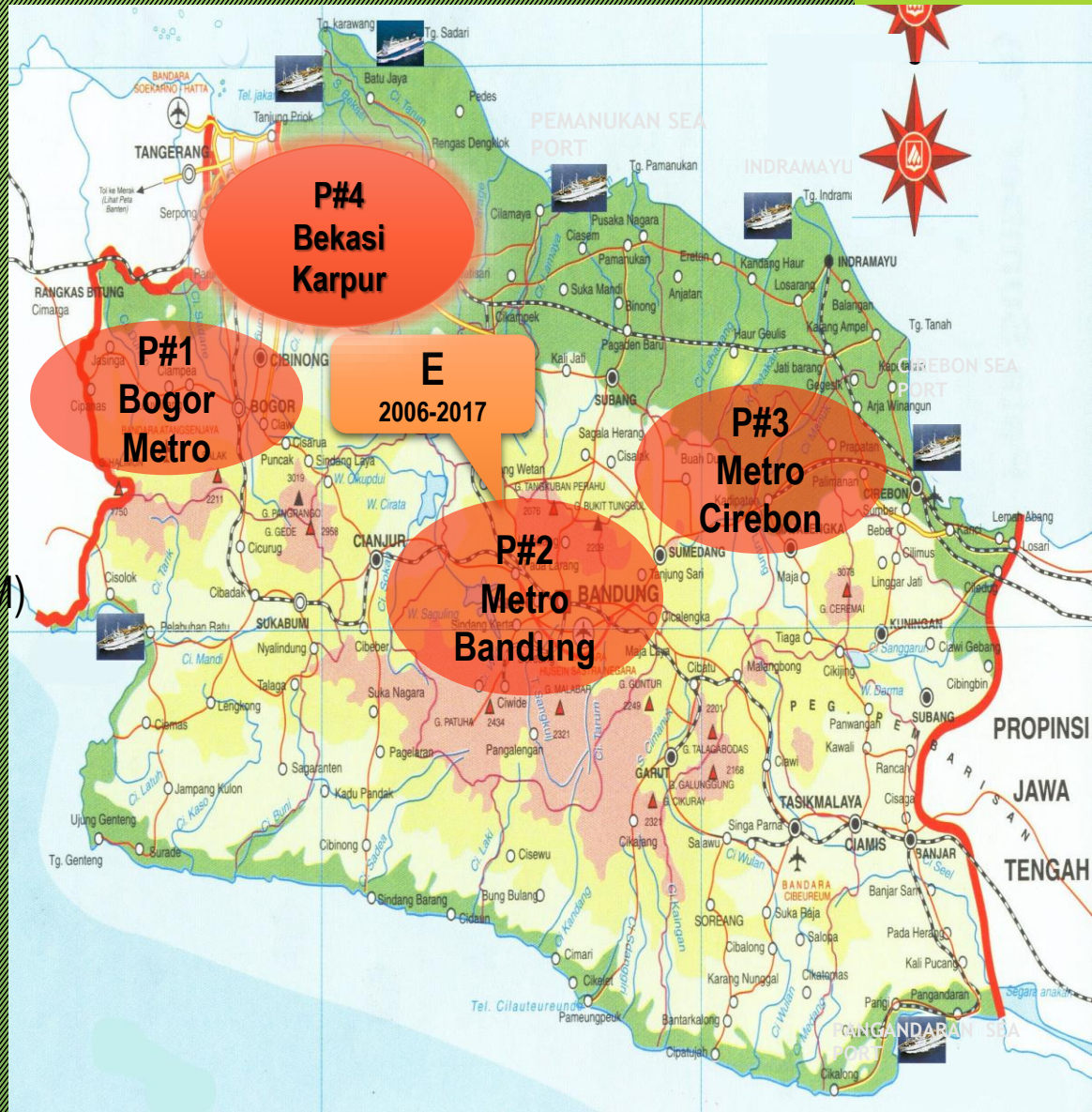
E : The Existing Regional Landfill Site at Sarimukti

P#1 : Regional SWTFD Project for BOGOR Metropolitan (EPC & OM)

P#2 : Regional SWTFD Project for BANDUNG Metropolitan (EPC & OM)

P#3 : Regional SWTFD Project for CIREBON Metropolitan (EPC & OM)

P#4 : Regional SWTFD Project for BEKASI KARPUR Metropolitan (EPC & OM)



WEST JAVA REGIONAL SOLID WASTE TREATMENT AND FINAL DISPOSAL (SWTFD)

- EXISTING :** - The Existing Regional Landfill Site at Sarimukti
- Capacity : 1.800 ton/day
 - Service Area : 1. Bandung Municipality
2. Cimahi City
3. Bandung Regency
4. West Bandung Regency
 - Remaining Lifetime of landfill : 1 Year
 - Lifetime extension plan for 3 years

PROJECT LIST OF SWTFD OF WEST JAVA PROVINCE

P#1 SWTFD NAMBO

- LOCATION : NAMBO, KLAPANUNGGAL, BOGOR REGENCY
- CAPACITY : 1.500 TPD (2018 – 2023)
- SERVICE AREAS : 1. Bogor Municipality
2. Bogor Regency
3. Depok Municipality
- STATUS OF PROJECT : CONTRACT SIGNED
DED AND FINANCIAL CLOSING

Municipal Waste Composition

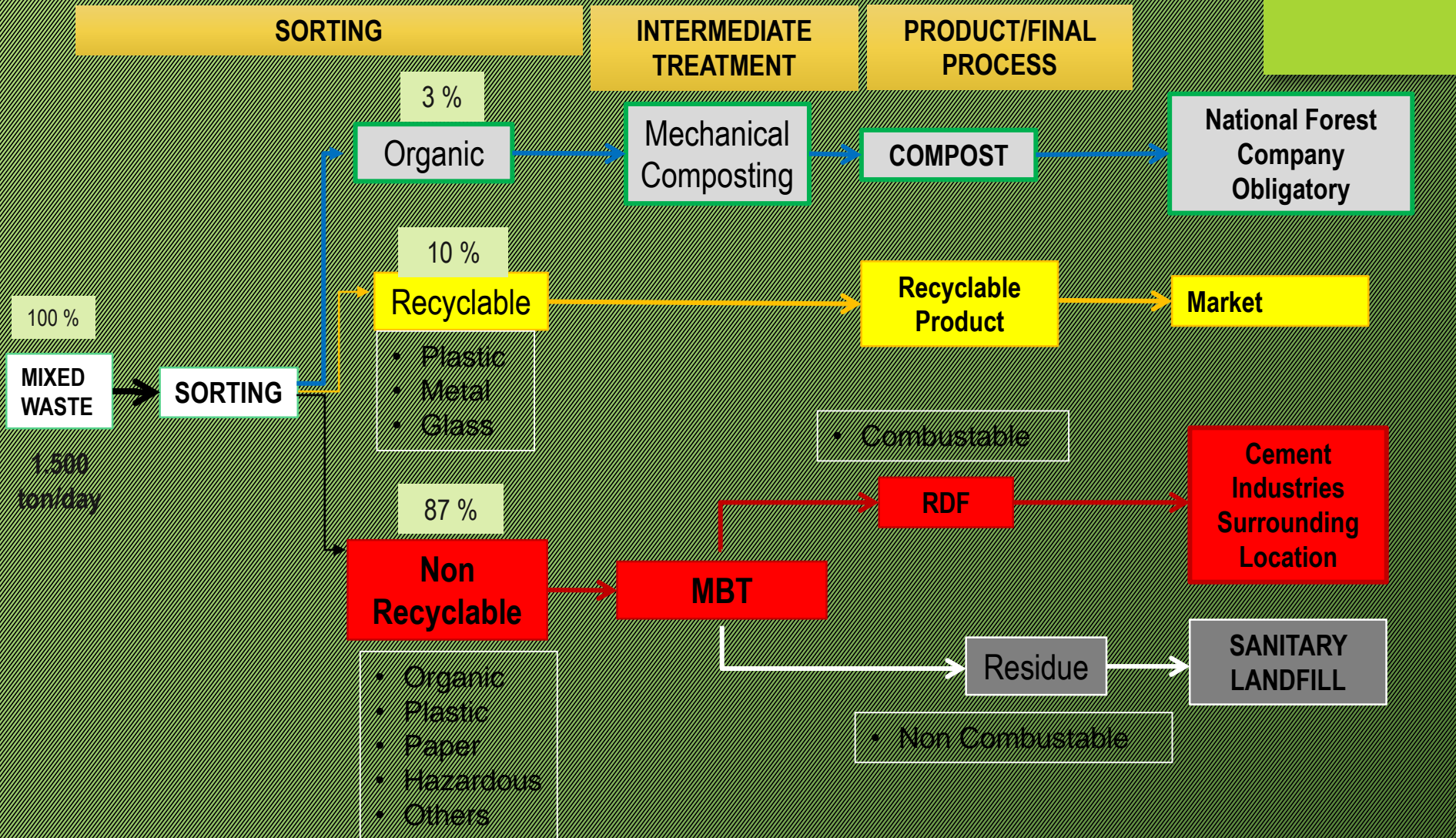
Bogor Area

Classification	Composition	Rate (%)
Organic	Organic + Leaves/Garden	51.4
	Residues (supposed to be organic)	5.6
Paper Plastic	Recyclable plastic over 50mm	12.4
	Recyclable paper over 50mm	0
	Non recyclable plastic over 50mm	3.7
	Non recyclable paper over 50mm	8.6
	Plastic under 50mm	2.0
	Paper under 50mm	1.4
Hazardous Wastes	Hazardous Waste	0.2
Others	Metal	0.2
	Mineral	1.3
	Textile	3.5
	Rubber	0.6
	Disposal Nappies	8.3
	Composites	0.1
	Others	0.4
Total		100

Source: JICA PPP Preparatory Study at Bogor, 2011

P#1 PROJECT DESIGN

Waste Treatment Concept (Priority Option)



P#1 PROJECT Scope

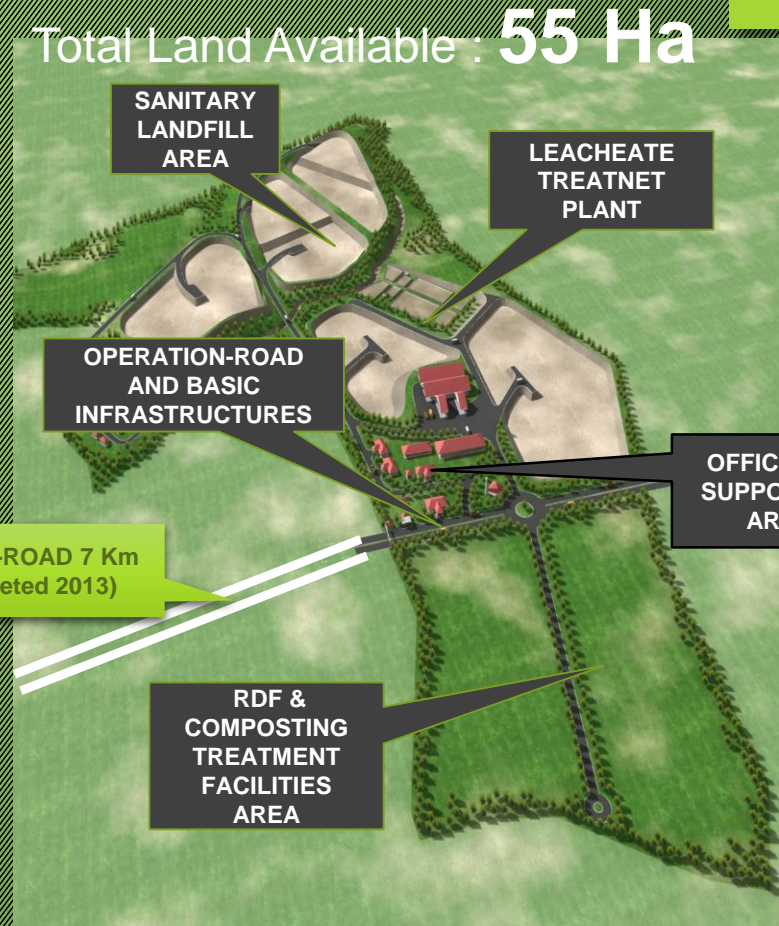
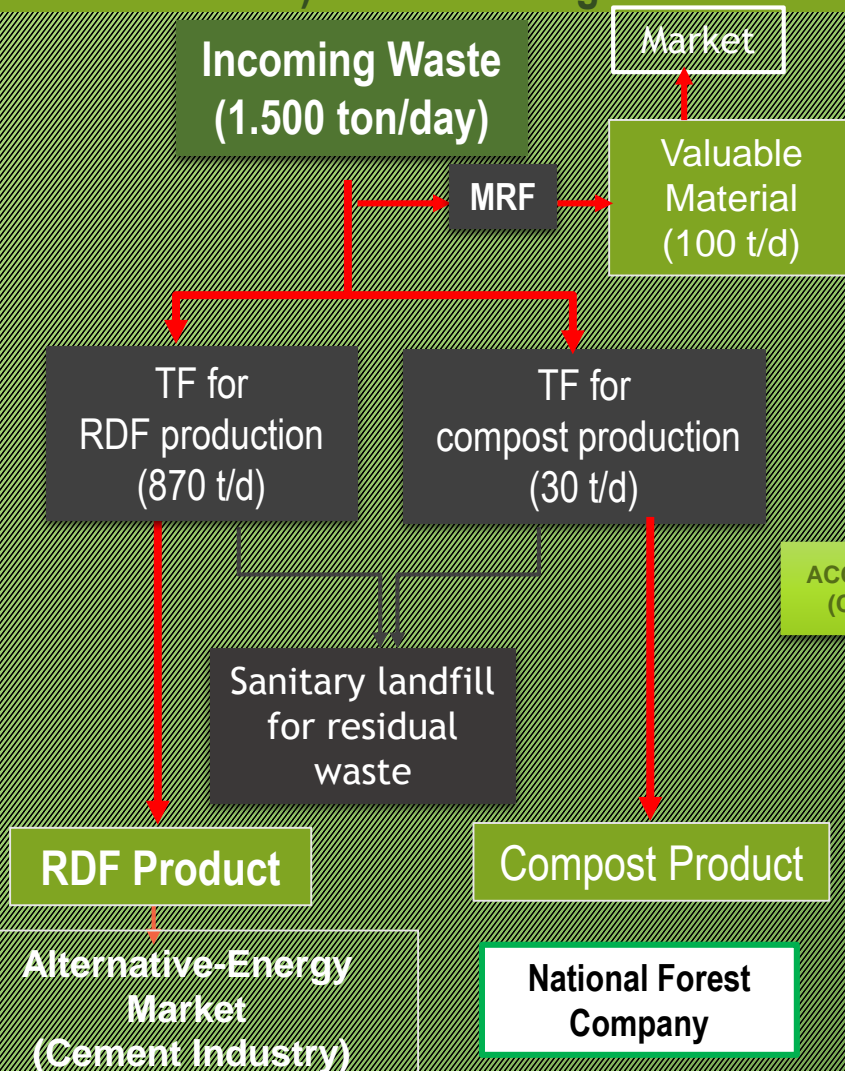
Solid Waste Treatment and Final Disposal for Bogor Area at **NAMBO**,

Capacity : 1.500 Ton/day

PPP Scope : 1) Construction of **Sorting and MRF Facility**; **RDF and Compost Facility**;
2) **Service Management**

Output:

1. **RDF (main)**
2. **Compost**



Note :  Completed

 PPP

PPP Project Scope

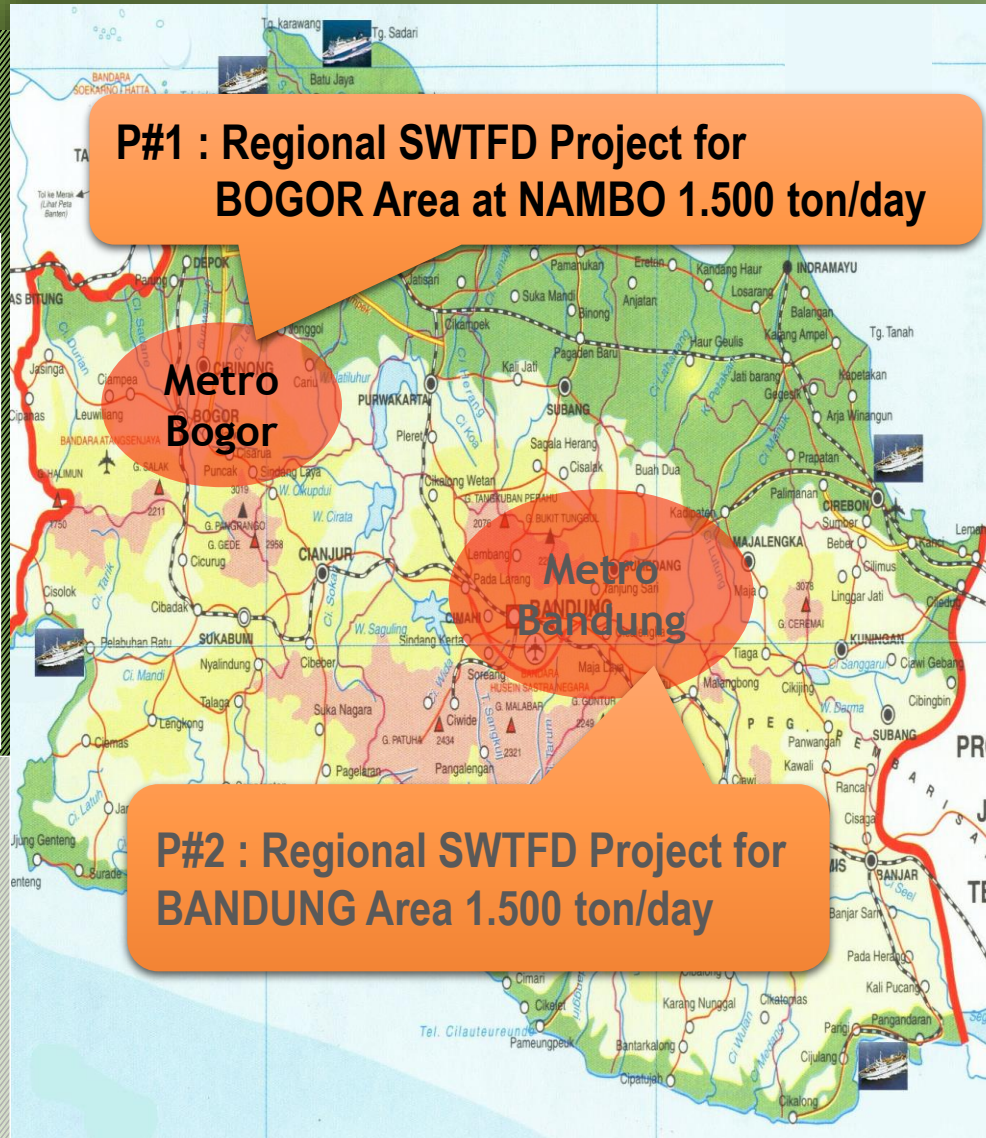
Project Scope

P#1:

**P#1 : Regional SWTFD Project for
BOGOR Area at NAMBO 1.500 ton/day**

P#2:

**P#2 : Regional SWTFD Project for
BANDUNG Area 1.500 ton/day**



PPP Scope

1. Investment :

- Sorting and Material Recovery Facility (MRF)
- RDF and Compost Production Facility

2. Service management of SWTFD

Government Support

1. Land acquisition
2. Access road
3. Sanitary landfill and Leachate treatment plant
4. Supporting facility and Common building

Government Support

1. Land acquisition
2. Operational road
3. Sanitary landfill and Leachate treatment plant
4. Supporting facility and Common building
5. Intermediate treatment facility (ITF)

PPP Scope (2014 PPP List)

1. Investment on :
Final product equipments/machines
2. Service management
Treatment and Final Disposal Facilities

PROJECT LIST OF SWTFD OF WEST JAVA PROVINCE *(Continued)*

P#2 SWTFD of Bandung Metropolitan

- LOCATION : NAGREG, BANDUNG REGENCY
- CAPACITY : 1.800 TPD (2019– 2024)
2.200 TPD (2025 - 2030)
- SERVICE AREAS : 1. Bandung Municipality
2. Bandung Regency
3. West Bandung Regency
4. Cimahi Municipality
5. Sumedang Regency
6. Garut Regency
- TECHNOLOGY : WTE AND LANDFILL
- PROJECT STATUS : READY TO OFFER
TECHNICAL ASSISTANT BY LKPP

Municipal Waste Composition

Bandung Area

Classification	Composition	Rate (%)
Organic	Organic + Leaves / Garden	47.2
	Residus (supposed to be organic)	9.7
Plastic	Recyclable plastic	12.1
	Non recyclable plastic	5.9
Paper	Paper	10.6
Metal	Metal	0.2
Hazardous Waste	Hazardous Waste	0.1
Other	Mineral	0.9
	Textile	7.4
	Rubber	0.5
	Disposal Nappies	5.0
	Composites	0.0
	Other	0.5
	TOTAL	100

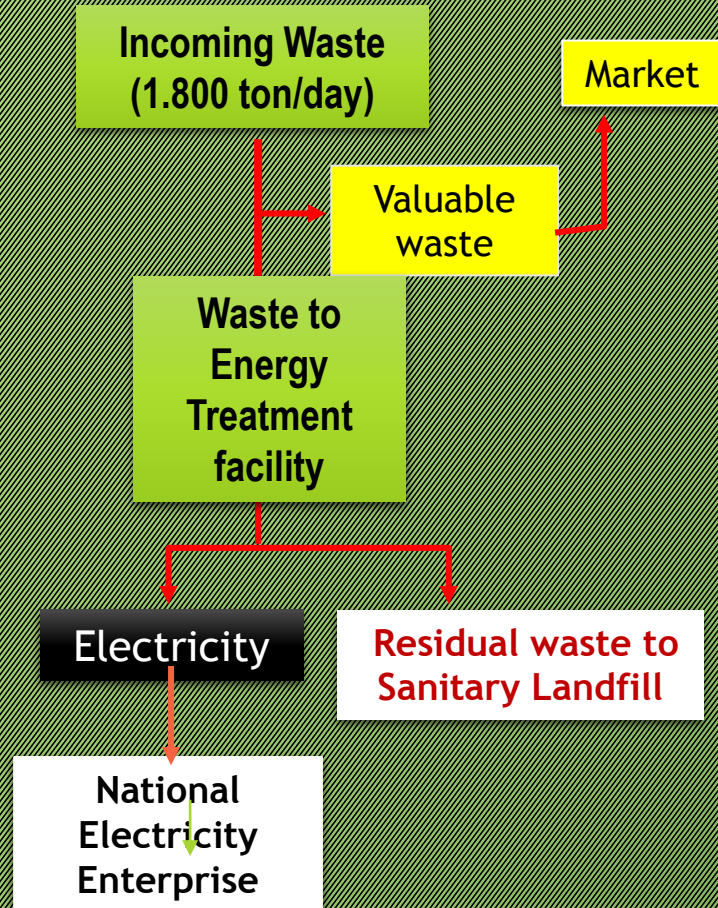
P#2 PROJECT DESIGN

Solid Waste Treatment and Final Disposal for Bandung Area at LEGOK NANGKA ,

Cap: 1.800 Tons/day

PPP Scope : 1) Waste to Energy Facilities; 2) Service Management

Output:
Electricity



Estimated **Project Cost**

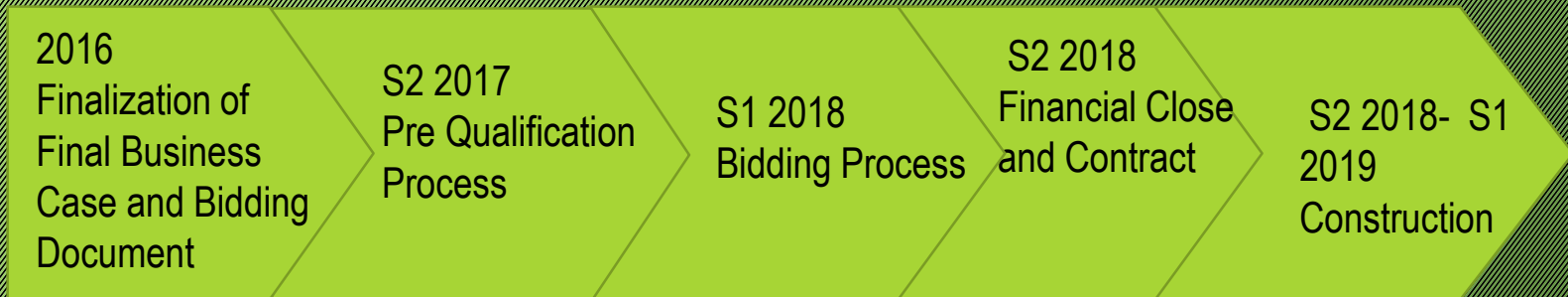
COMPONENT	ITEM	INVESTME COST	Public - Private
Land Acquisition and Basic Infrastructure	1. Land 74.6 Ha (2011)	US \$ 20 Million	Government Support (Central and Provincial Budget)
	2. Access Road (2013)		
	3. Operation Road (2015)		
	4. Sanitary Landfill (2015)		
	5. Leachate Treatment (2015)		
	6. Common Buildings (2016)		
Waste to Energy Thermal Facilities	Sorting Facilities/ Material Recovery Facilities (MRF)	US \$ 200 Million	Private
	Waste to Energy Plant		
	Pre and Post Treatment		

Total US \$220 Million

P#2

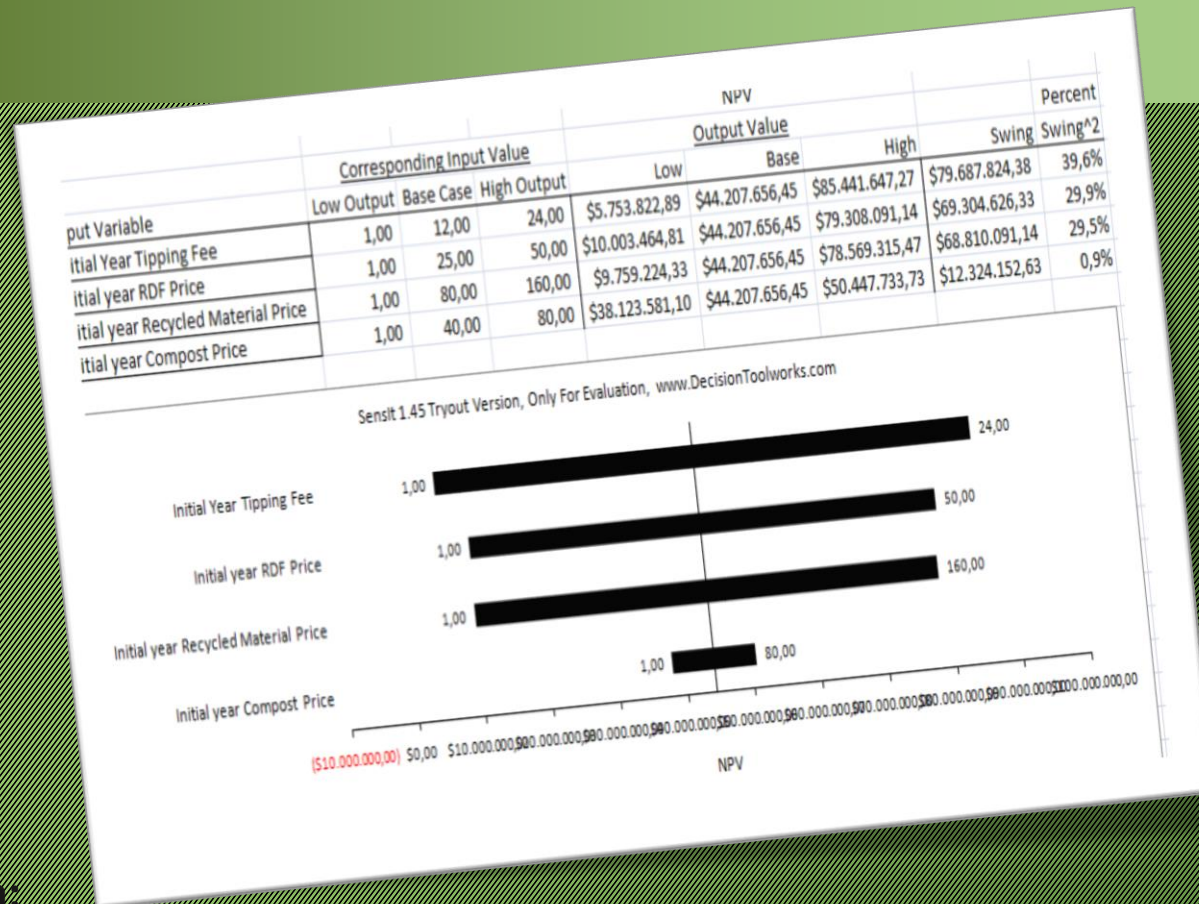
PROJECT SCHEDULE (tentative)

P#2



Business Case (Exercise)

P#2



Project Description:

1. Investment cost : \pm US\$ 200 Million
2. Concession period: 25 years
3. PPP modality: Build Operate Transfer (BOT)
4. Expected revenue: Tipping fee (under calculation), recyclable and PPA with PLN
5. IRR: \pm 15%
6. Project guaranteed by Provincial Regulation

LEGOK NANGKA DEVELOPMENT PROGRESS

P#2



Weight Bridge

74.6 Ha



Gate



Access and Operation Road completed

#2 Project Location - -7.019461, 107.911907

PROJECT LIST OF SWTFD OF WEST JAVA PROVINCE (*continued*)

P#3 SWTFD CIREBON METROPOLITAN

- LOCATION : CIWARINGIN, CIREBON REGENCY
- CAPACITY : 1.000 TPD
- SERVICE AREA S : 1. CIREBON MUNICIPALITY
2. CIREBON REGENCY
3. INDRAMAYU REGENCY
- STATUS OF PROJECT : POTENSIAL
- TECHNOLOGY : WTE & LANDFILL
- PROJECT SCHEDULE : Land acquisition (2017), EIA Study(2018)

PROJECT LIST OF SWTFD OF WEST JAVA PROVINCE (*continued*)

P#4 SWTFD of BEKASI KARPUR METROPOLITAN

- LOCATION : STILL IDENTIFIED, KARAWANG REGENCY
- CAPACITY : 1.800 TPD (2017- 2022)
2.000 TPD (2022 – 2032)
- SERVICE AREAS : 1.BEKASI MUNICIPALITY
2. BEKASI REGENCY
3. KARAWANG REGENCY
4. PURWAKARTA REGENCY
- STATUS OF PROJECT : POTENTIAL
- TECHNOLOGY : WTE & LANDFILL
- PROJECT SCHEDULE: Land acquisition, EIA Study(2018)

BENEFIT OF INVESTMENT

- ① The higher population grow, the higher waste produced, in turn the higher potential income
- ② Potential income sources: tipping fee and selling electricity
- ③ Concession period for 20 - 30 years
- ④ Potential project replication for more than 400 municipalities/regencies in Indonesia
- ⑤ Government support and government guarantee

THANK YOU FOR YOUR KIND ATTENTION



West Java Regional Solid Waste Management (BPSR)

Environmental Protection Agency

West Java Provincial Government

Address: Jalan Naripan No. 25 Bandung 40111 West Java – INDONESIA

Tel: +62 22 4204871 Fax: +62 22 4231570 Email: dislh@jabarprov.go.id