

A Renovation Project for a Centralized Sewage Sludge Treatment Plant Including Transfer of Existing Facility O&M, Using a PFI Scheme

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**TECHNICAL
SESSIONS**

**90
YEARS**

Contents

- Outline of Yokohama and its wastewater treatment system
- Renovation of the incineration facilities at the Hokubu Sludge Treatment Plant
- Description of the PFI project
- Issues for the future

City of Yokohama

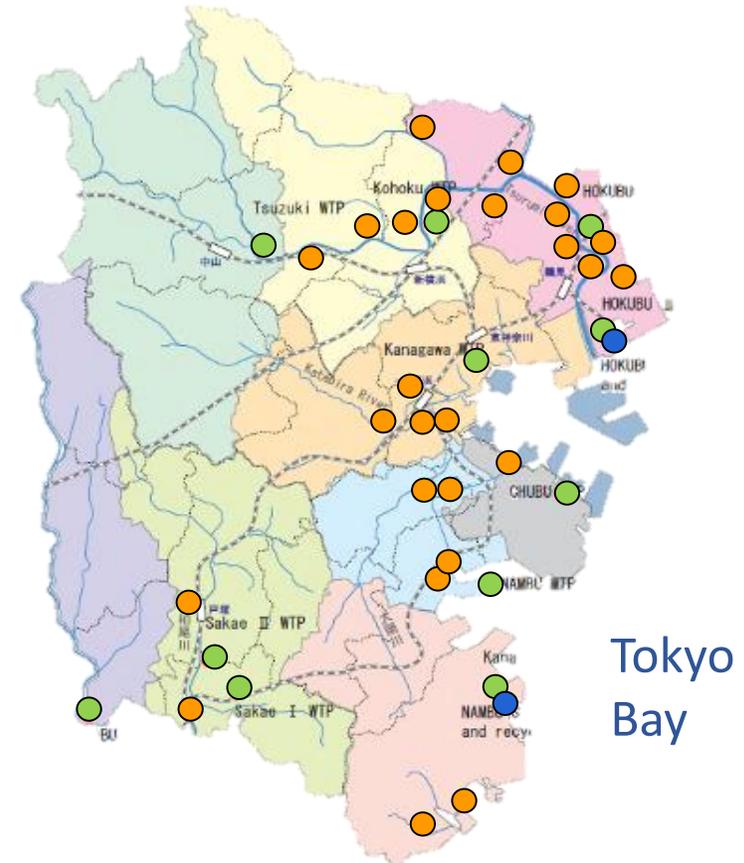


City Information

Land Area	435 km ²
Population	3.7 million

The State of Wastewater Treatment in Yokohama

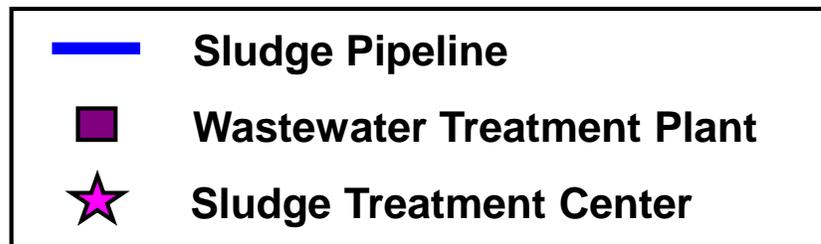
Item	Value
Sewerage Service Rate	99.9%
Treated Wastewater	1.6mil.m ³ /day
Treatment zones	9 zones
Wastewater Treatment Plant	11 places
Sludge Treatment Center	2 places
Pumping Station	26 places
Total Sewer Length	11,800 km



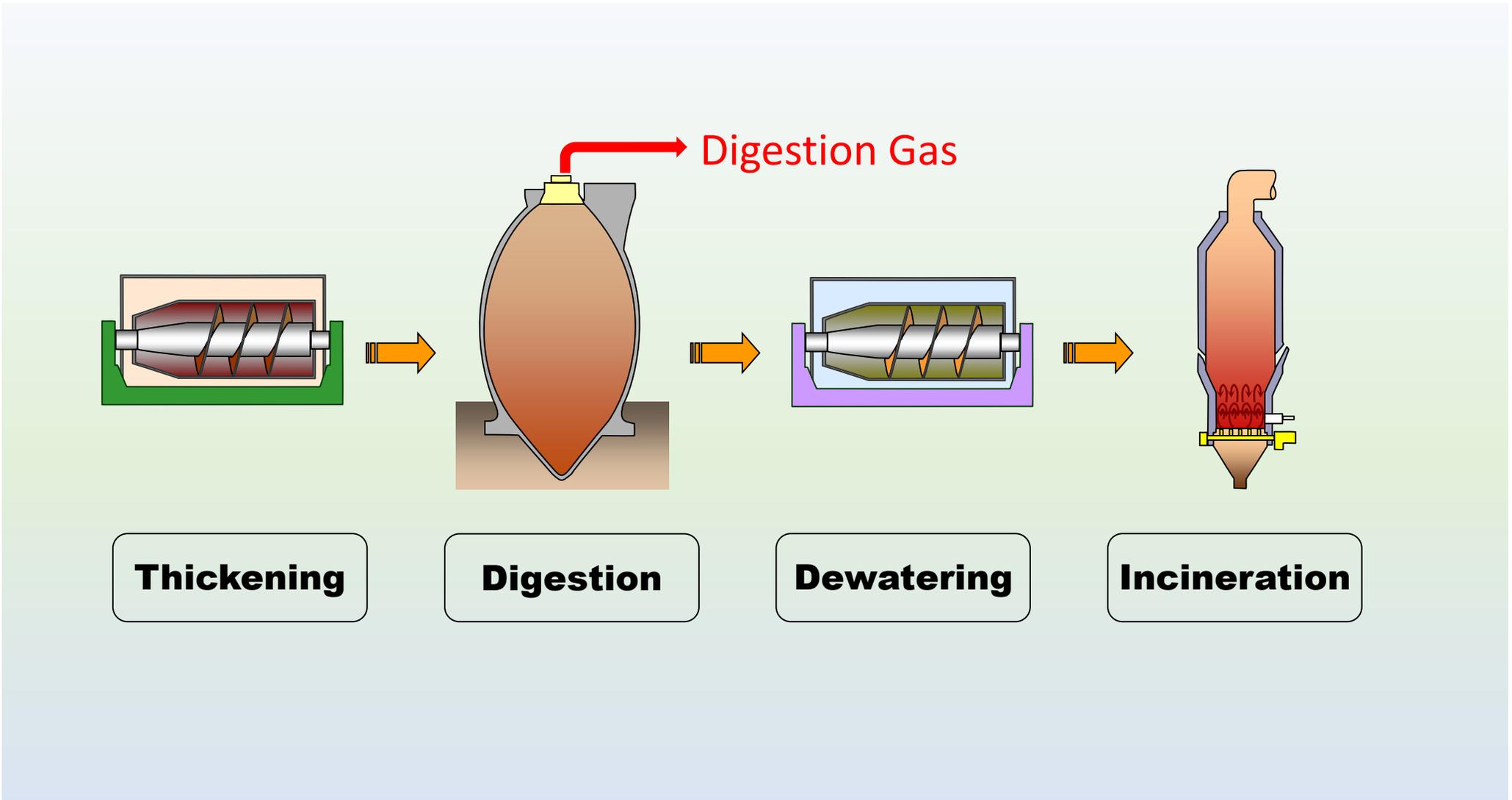
- Wastewater Treatment Plant
- Sludge Treatment Center
- Pumping Station

Sludge Treatment Plants

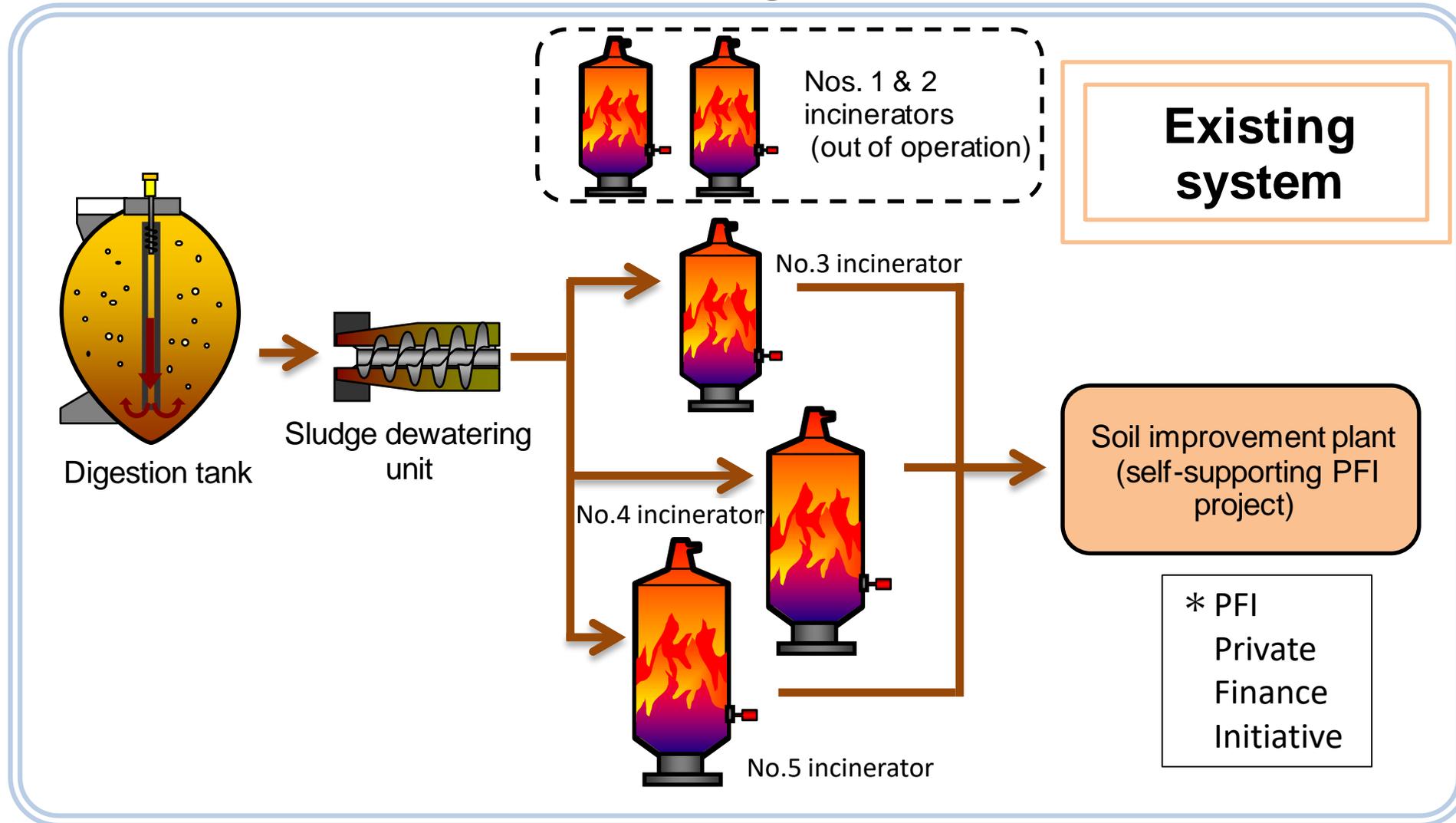
Item	Value
Average wastewater inflow	1.6 million m ³ /day
Residuals intake at sludge treatment plants	15,000 m ³ /day



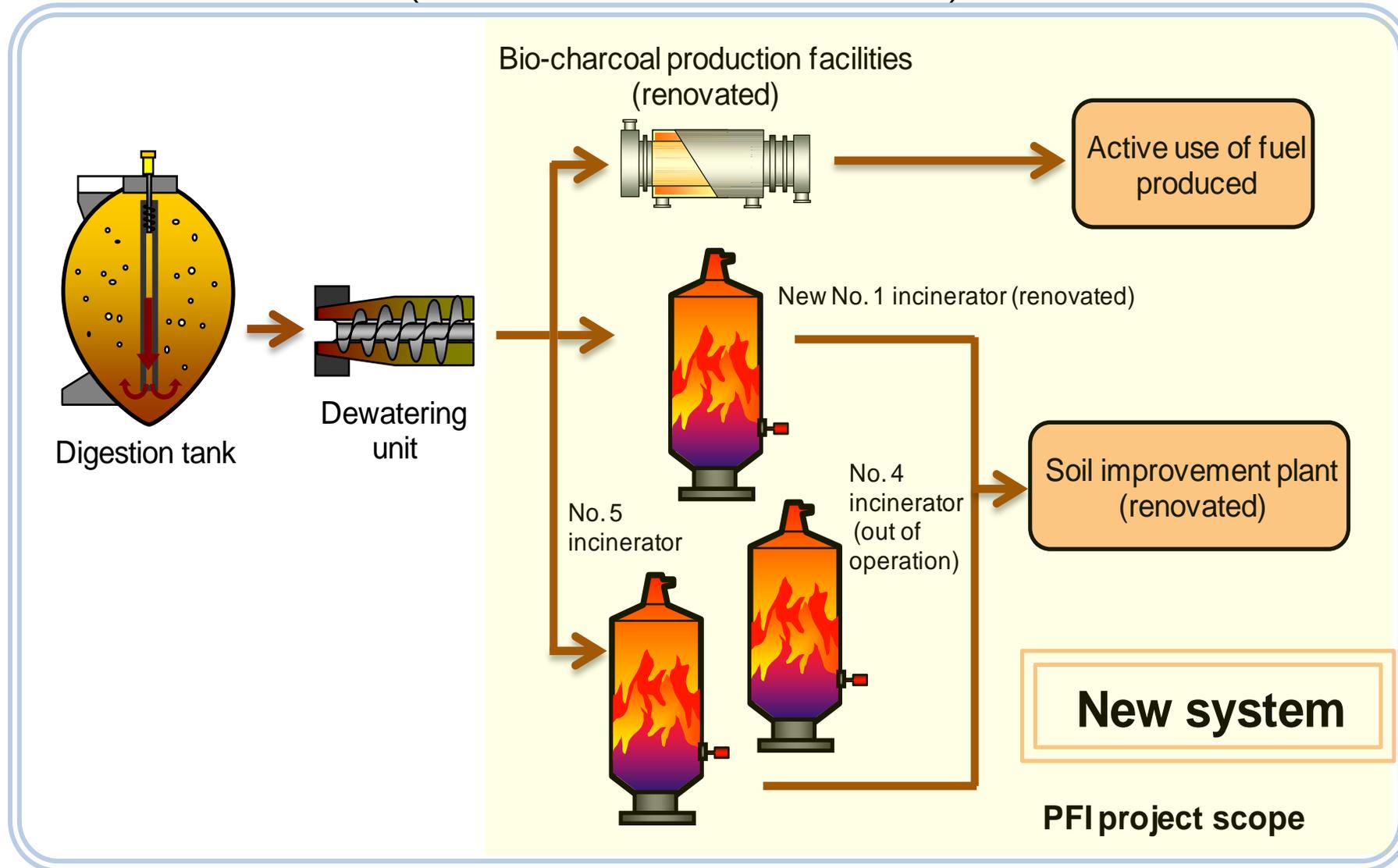
Process of Sludge Treatment



Incineration Facilities at the Hokubu Sludge Treatment Plant (existing)



Incineration Facilities at the Hokubu Sludge Treatment Plant (after renovation)



Data on Incineration Capacity

Existing

	Incineration volume	Start of operation	Operating status
No. 1	100 t/day	1981	Application filed for decommissioning
No. 2	100 t/day	1985	Application filed for decommissioning
No. 3	150 t/day	1987	In operation
No. 4	150 t/day	1989	In operation
No. 5	200 t/day	2007	In operation



After renovation based on the PFI project

	Treatment volume	Start of operation	Operating status
Bio-charcoal production facilities	200 t/day	2019	In operation
New No. 1	200 t/day	2020	In operation
No. 4	150 t/day	1989	Out of operation
No. 5	200 t/day	2007	In operation

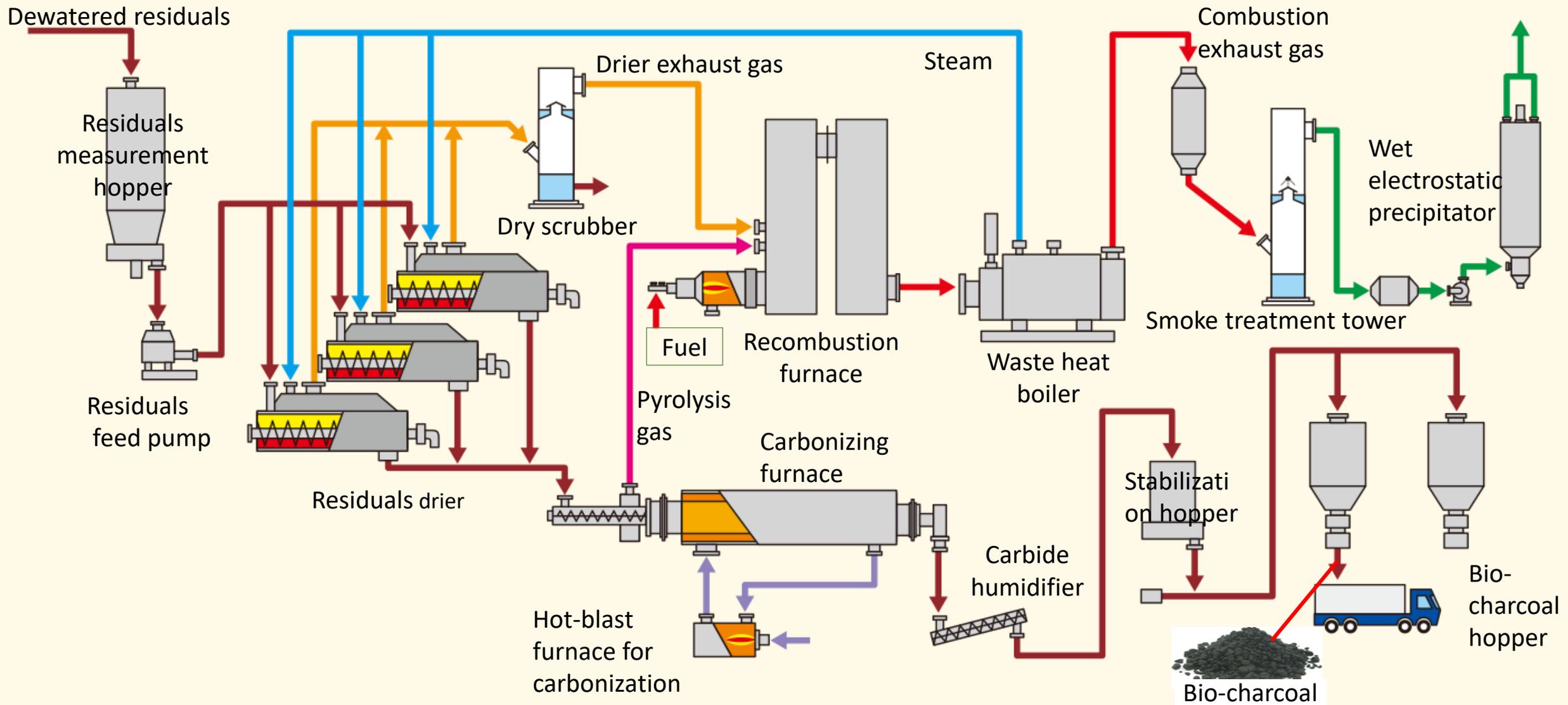
Outline of the PFI Project

Name	Project for sewage sludge treatment and effective use at the City of Yokohama Hokubu Sludge Treatment Plant
Method	Build, transfer, and operate (BTO) method / hybrid type
Period	August 2016 – March 2039 Design & construction period: 5 years & 8 months Operation & maintenance period: 22 years (beginning with the existing facilities in April 2017)
Operator	Yokohama Bay Link Corporation
Cost	41,864,793,000 yen VFM: 6.1%

PFI Project Schedule

Facility name		FY	2016	2017	2018	2019	2020	2021	⋮	2038	
Existing	Nos. 1 and 2 incinerators		Removal								
New	Bio-charcoal production facilities			Construction		Maintenance					
Existing	No. 3 incinerator			Maintenance		Removal					
New	New No. 1 incinerator						Construction		Maintenance		
Existing	No. 4 incinerator			Maintenance					Shutdown		
Existing	No. 5 incinerator			Maintenance							
Existing	Soil improvement plant		Separate management			Removal					
New	New soil improvement plant			Construction		Maintenance					

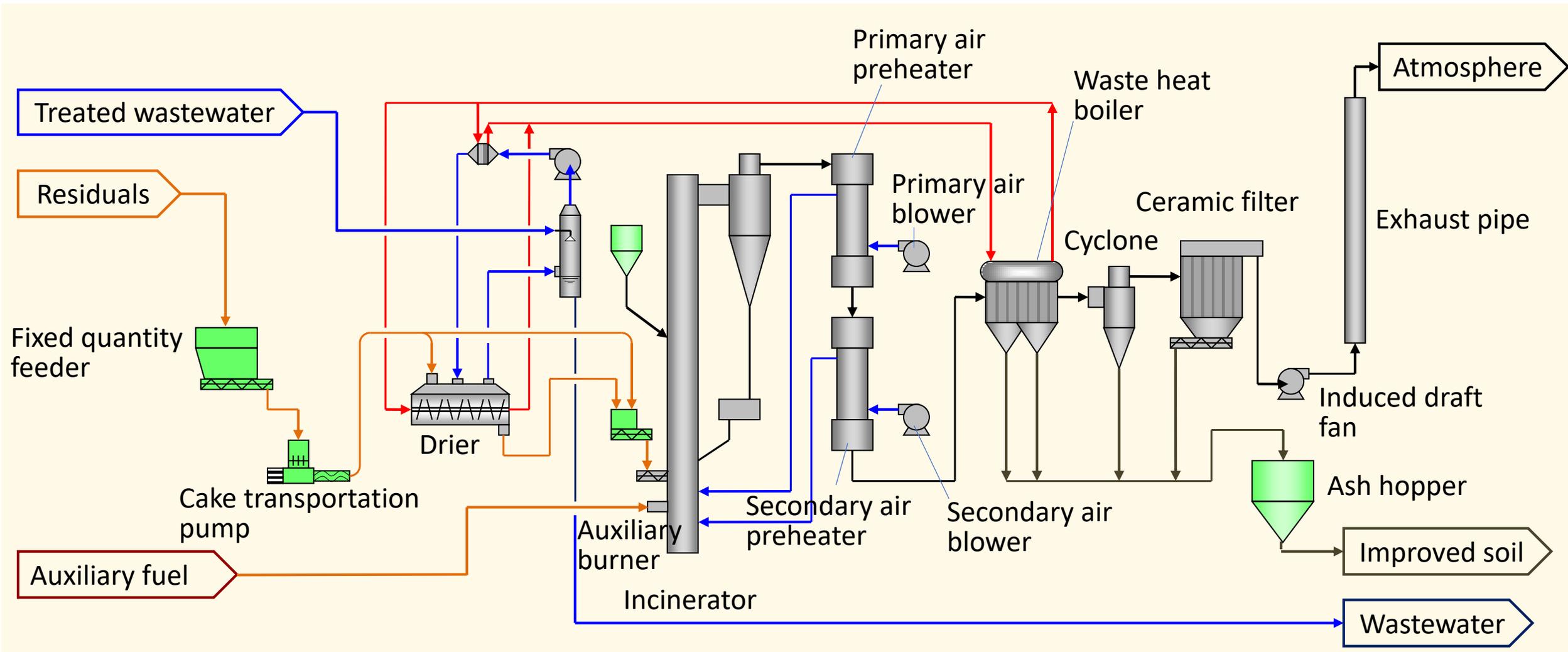
Outline of the Bio-Charcoal Production Facilities



Conceptual Image of Bio-Charcoal Production Facilities When Completed



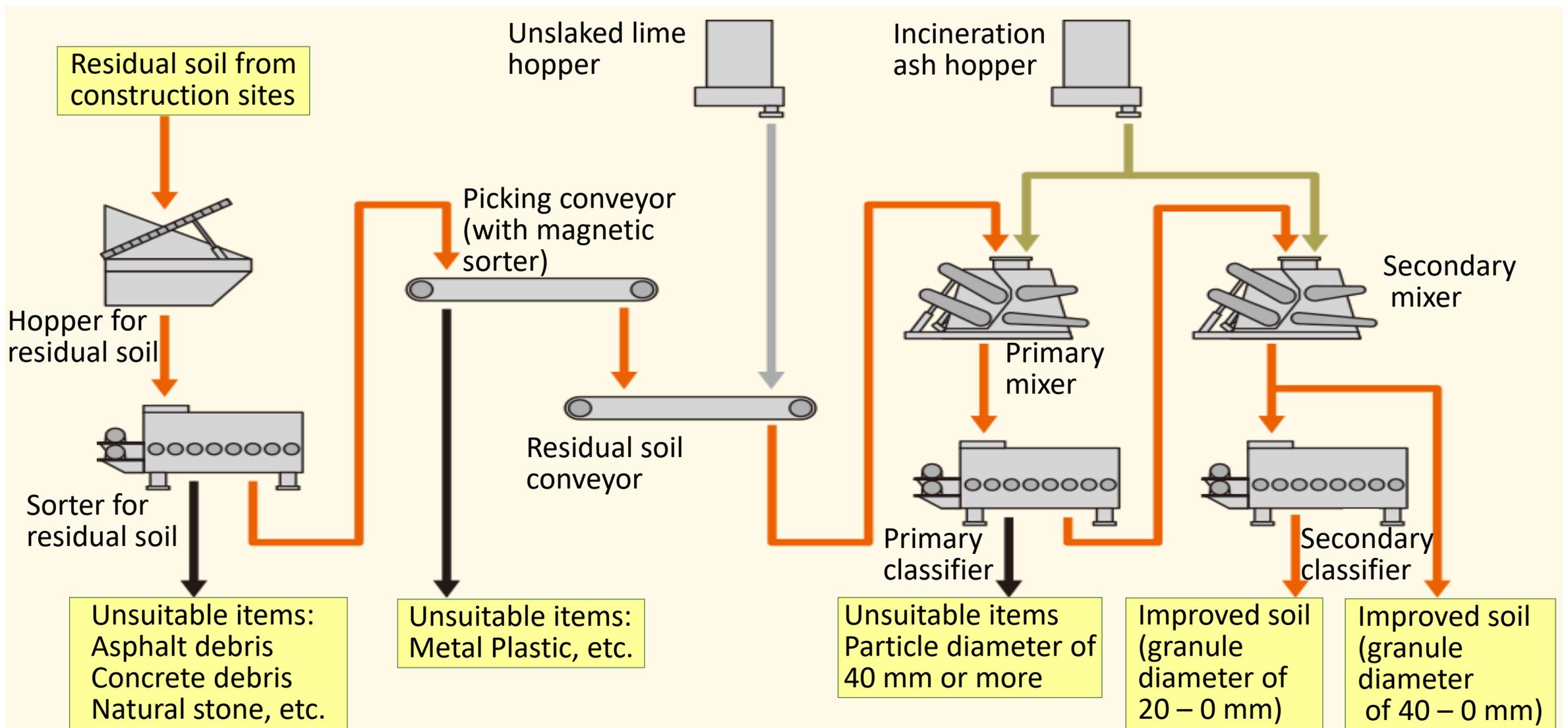
Outline of the New No. 1 Incinerator



Conceptual Image of the New No. 1 Incinerator When Completed



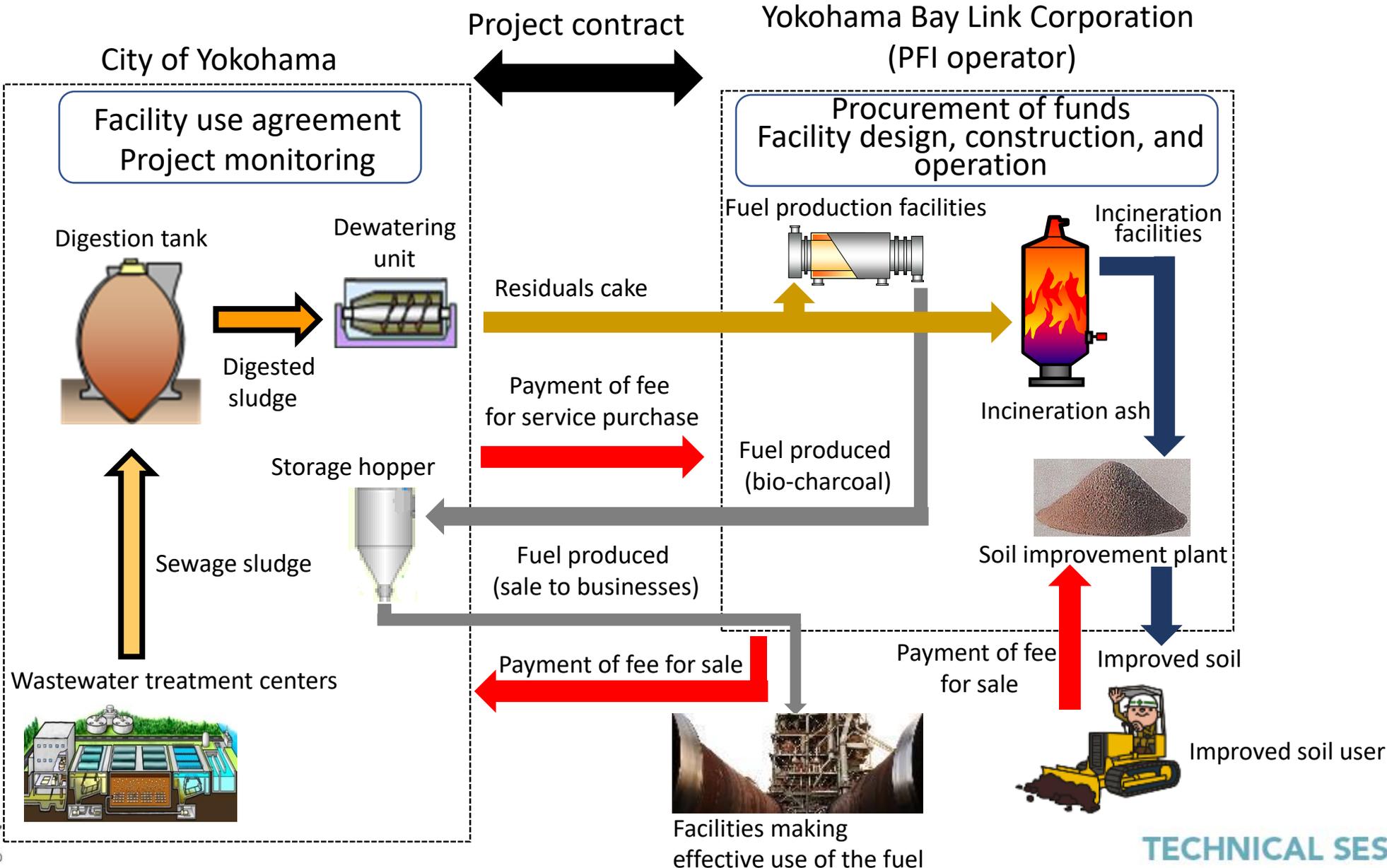
Outline of the Soil Improvement Plant



Conceptual Image of the Soil Improvement Plant When Completed



Project Scheme



Issues for the Future

- Simultaneous and parallel work – facility dismantling, construction, and management
- Related laws and ordinances
- Transfer of work to successors



Nocturnal View of Yokohama Harbor