UTASHINAI (Outward)

Utashinai Project

① Object　Treatment of Automobile Shredder Residue and Municipal Solid Waste

② Capacity　165 t／day

(ASR Base)　3.44 t／h・unit

③ unit　2 units

④ Generation of electric power　7,900 KW（Steam turbine）

⑤ Steam　400℃×40ata×　42.0 t/h

⑥ Ability（Gas）

Dust	<0.01 g/m3N(dry gas O2=12%)
Nitrogen oxide	83 ppm(Dry gas O2=12%)
Hydrogen chloride	7 ppm(Dry gas O2=12%)
Dioxins	<0.01 ng-TEQ/m3N(Dry gas O2=12%)

⑦ TCLP（Slag）

Lead(Pb)	<	0.01	mg/l
Cadmium(Cd)	<	0.01	mg/l
Mercury(Hg)	<	0.0005	mg/l
Sexivalent chrome(Cr6+)	<	0.05	mg/l
Arsenic(As)	<	0.01	mg/l

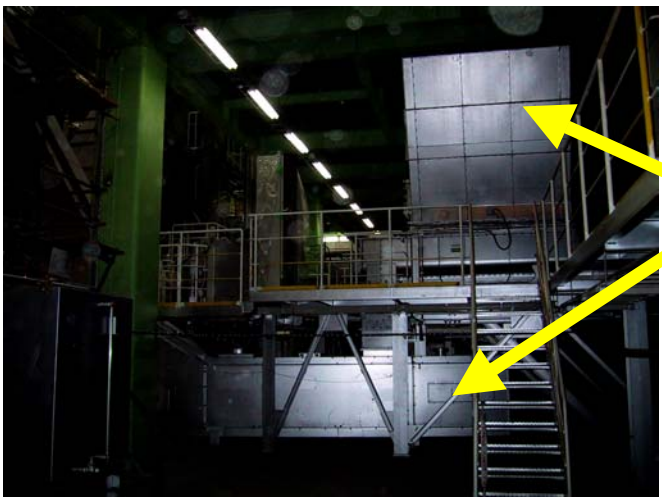
Complete view of the structure

(Platform side)

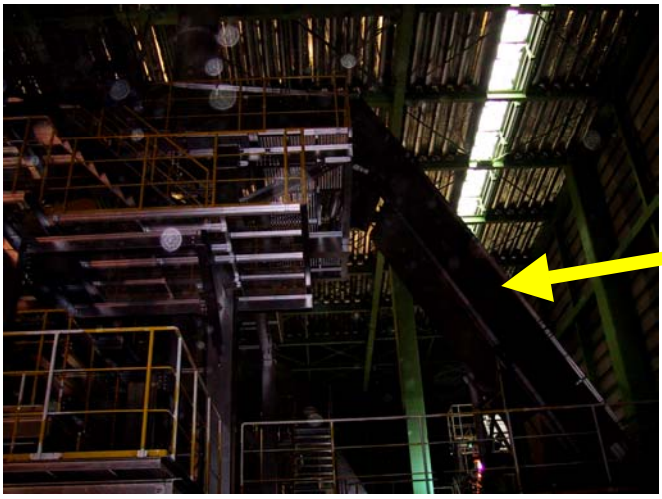
Complete view of the structure

(Stack side)

Platform and Pit door



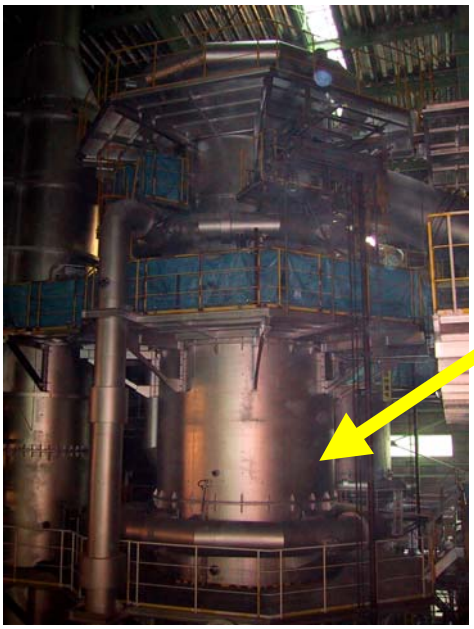
Hopper and
Shredder dust feeder



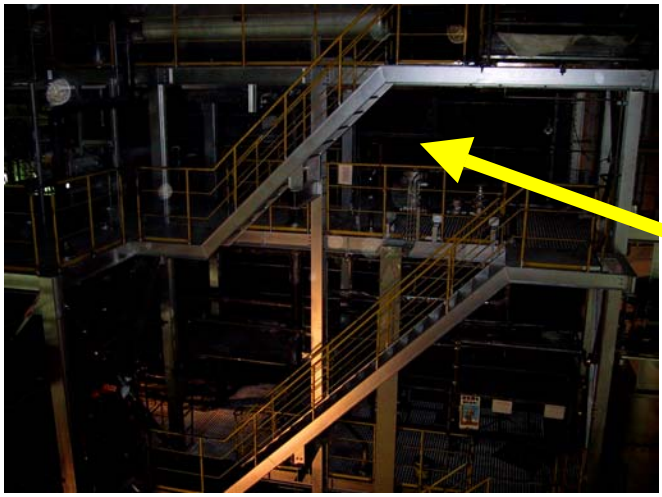
Shredder dust feeder

(Head of feeder)

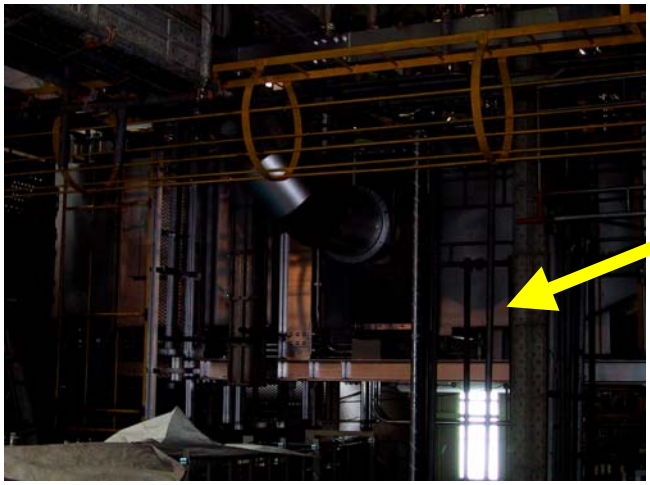
Plasma direct melting reactor


After burner


Duct

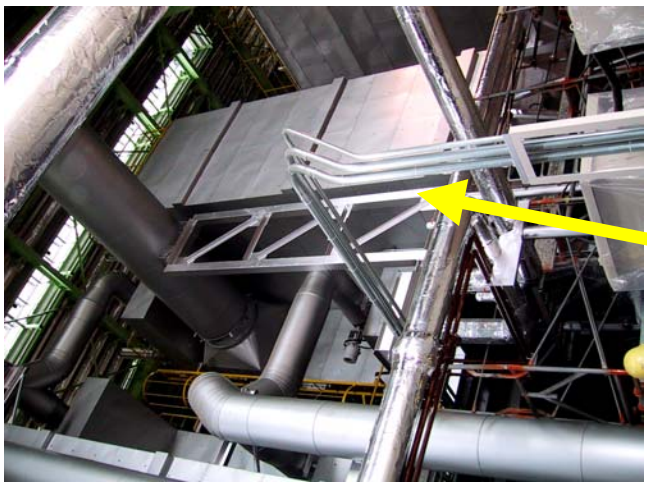

Boiler

Photograph 4/5



Air preheater

Cooling tower



Bag filter

Induced draft fan

Stack

Steam turbine

Characteristic and Reuse of slag

		Satisfying soil environment standards(TCLP)	Typical results of slag analysis (TCLP)
	Lead	0.01＞	0.002＞
	Cadmium	0.01＞	0.001＞
	Arsenic	0.01＞	0.001＞
	Mercury	0.0005＞	0.0005～0.0003
	Sexivalent chrome	0.05＞	0.002＞
	Seleniumu	0.01＞	0.004＞
Size		1～3mm	

	Typical results of Interlocking block (TCLP)
Lead	0.002＞
Cadmium	0.001＞
Arsenic	0.001＞
Mercury	0.0005＞
Sexivalent chrome	0.01＞
Selenium	0.001＞
Bending test	5．66N/mm² (standards 5．0 N/mm²)

Water-cooled slag

Interlocking block

One of reuse of slag

Advantage of PDMP

The structure is simple

Operations are so easy

【Gasification/melting zone combined-type shaft furnace】

① **The structure is simple**
（**No internal drive unit**）

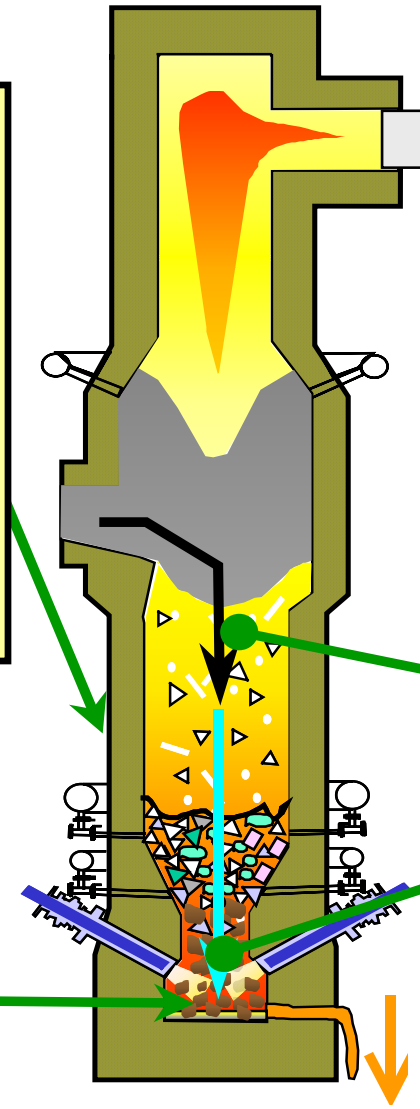
② High volume of accumulated heat
⇒**Landfill refuse can also be treated**

③ melting zone : 1,550℃ or more
⇒High-quality slag and metal are discharged

【Plasma Torch&Bed coke】

①Output adjustment is easy

②Smooth continuous with draw of molten slag and metal



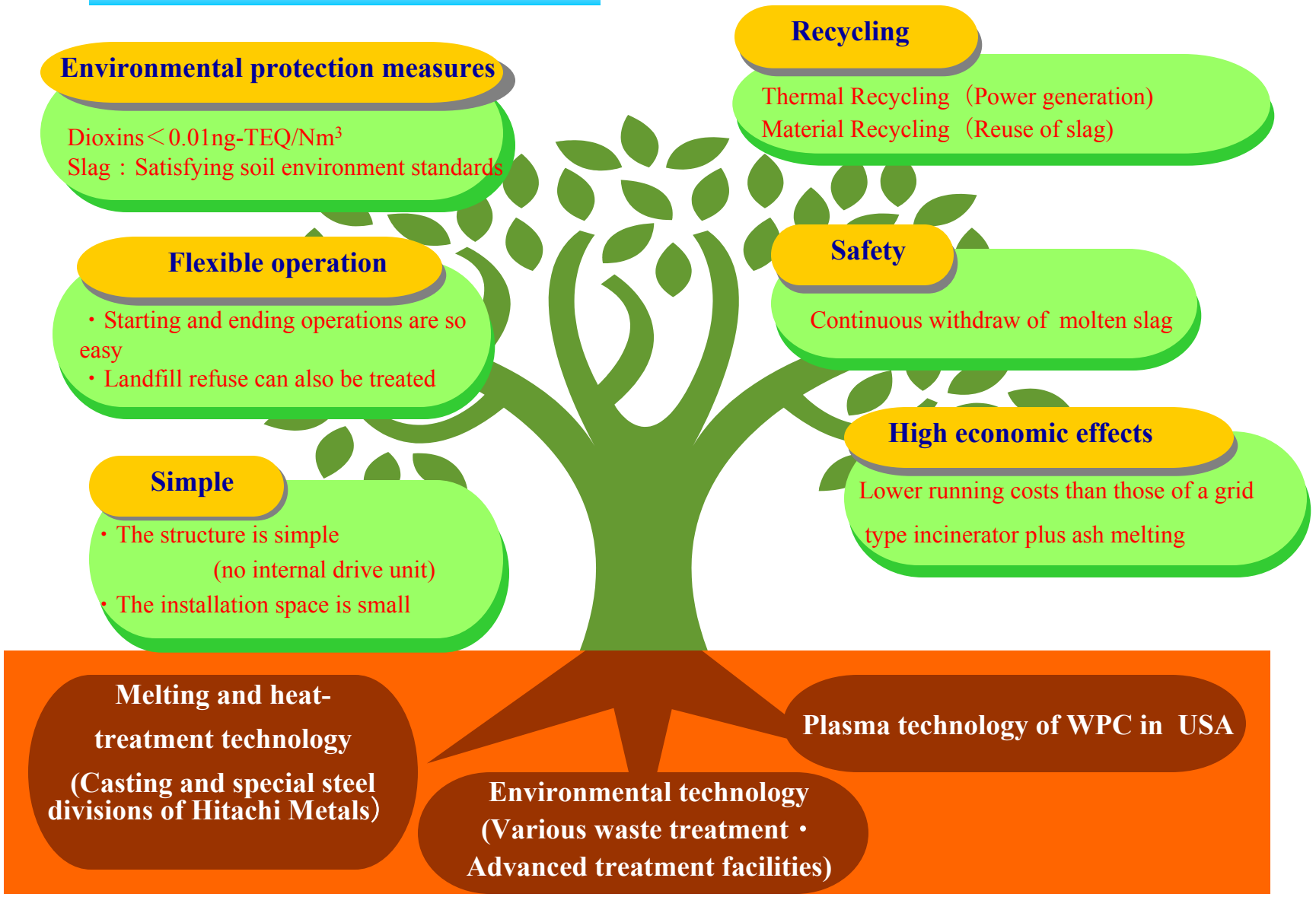
【After burner】

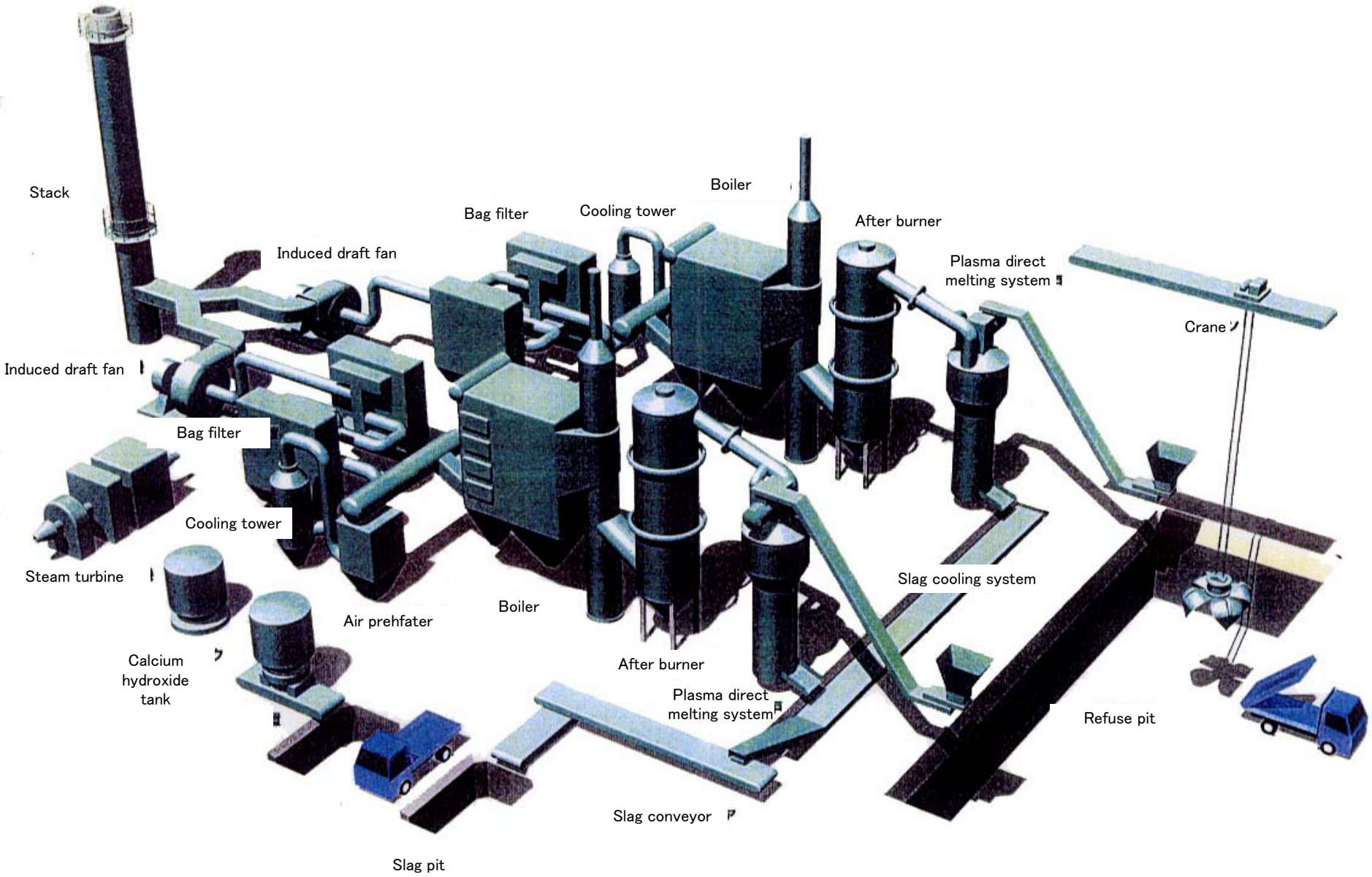
①Temperature : 850～950℃

②Residence time : 2seconds or more

☆Dioxins are decomposed by intensive heat

Concepts


Environmental protection measures
Dioxins＜0.01ng-TEQ/Nm3
Slag：Satisfying soil environment standards
Recycling
Thermal Recycling（Power generation)
Material Recycling（Reuse of slag)
Flexible operation
・Starting and ending operations are so easy
・Landfill refuse can also be treated
Safety
Continuous withdraw of molten slag
Simple
・The structure is simple
(no internal drive unit)
・The installation space is small
High economic effects
Lower running costs than those of a grid type incinerator plus ash melting
Melting and heat-treatment technology
(Casting and special steel divisions of Hitachi Metals)
Environmental technology
(Various waste treatment・Advanced treatment facilities)
Plasma technology of WPC in USA



Flow diagram of UTASHINAI