Hitachi Zosen
INOVA

Liberec / Czech Republic
Waste to Energy Plant

5 x 47 t/h, 193 MW

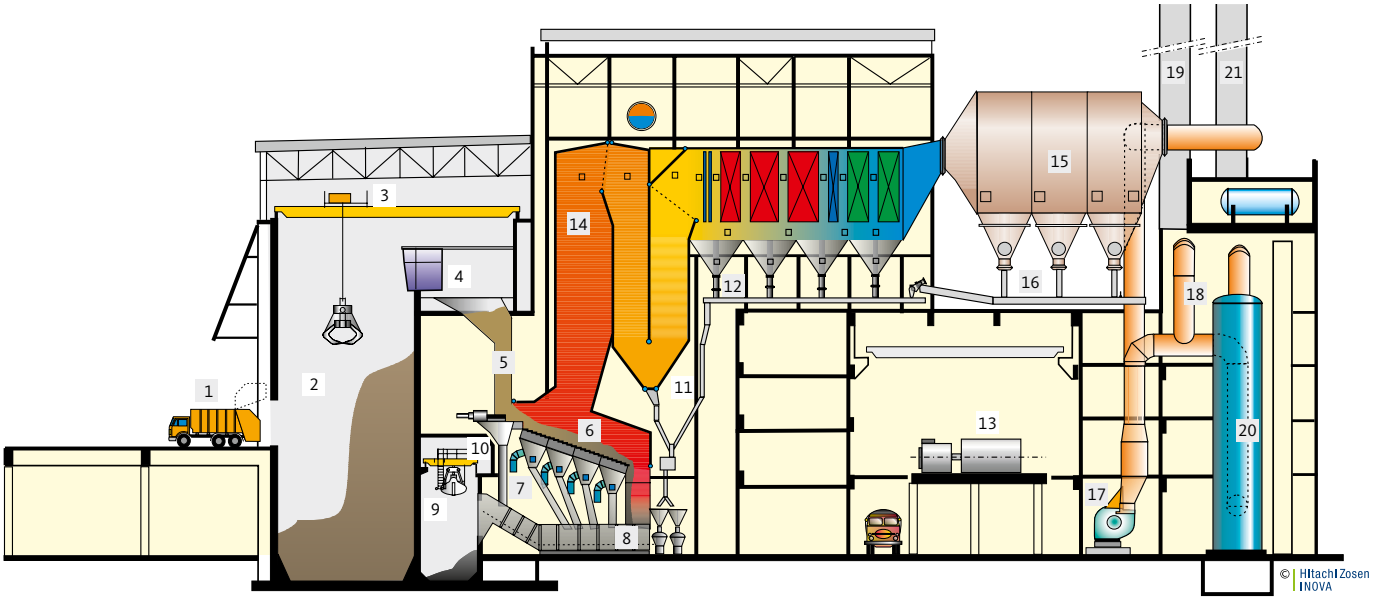
Liberec Waste to Energy Plant: State-of-the-Art Waste Incineration in the Czech Republic

With the democratization of the Czech Republic, environmental consciousness has also become an important issue.

The republic has underlined this point by stating its intention to adopt EU standards in the field of environmental engineering. At the beginning of the 1990's, studies to assess the situation and devise concepts for waste treatment in the Czech Republic were carried out with foreign aid from other European countries. The project was continued in the Liberec region (in the former province of Bohemia) and in 1997, a consortium of Hitachi Zosen Inova (HZI) and Škoda TS a.s. received the contract for the Liberec incinerator plant, which will incinerate wastes from the Liberec/Jablonec region. Located in the middle of a residential and industrial zone, the plant has a design capacity of 96,000 Mg/year. After two years of construction, the facility went on stream in May 1999.

HZI Technology Sets New Standards in Eastern Europe.
The Liberec plant includes incineration with energy recovery, flue gas treatment, and a residue treatment facility which meets European standards. Much of the energy used by the plant comes from nearby a district heating power station. A synergy is achieved by delivering the produced energy to the district heating power station. Along with electric power, steam is forwarded to the district heating power station for use in the district heating system, while compressed air is generated for power plant service. As a unique feature, the facility has acid fly-ash washing, in which heavy metals are removed from the boiler ash and fly ash; the recovered metals can then be mixed with bottom ash. Residues from the final wastewater treatment unit are disposed of by landfilling.

HZI, as lead partner in the consortium, is responsible for the basic engineering of the plant as a whole and also supplies the following components: size reduction equipment for bulky waste, incineration section, flue-gas treatment and acid fly-ash washing equipment, and wastewater treatment plant.



Waste Receiving and Storage

1 Delivery hall
2 Waste pit
3 Waste crane
4 Crane control cabine

Combustion and Boiler

5 Feed hopper
6 HZI Grate
7 Primary air distribution
8 Wet deslagger
9 Bottom ash handling
10 Bottom ash crane
11 Four-pass boiler
12 Boiler ash removal
13 Turbine

Flue Gas Treatment

14 SNCR DeNO$_x$ system
15 Electrostatic precipitator
16 Fly ash discharge
17 Induced draft fan
18 Emergency bypass
19 Emergency stack
20 Wet scrubber
21 Stack

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General Project Data

Operator	Termizo, a.s.
Start of operation	1999
Scope of HZI	Incineration, flue-gas treatment, ash washing, wastewater treatment, guillotine shears
General contractor	Consortium of Hitachi Zosen Inova and Škoda TS a.s.

Technical Data

Annual capacity	96,000 t/a
Number of lines	1
Throughput per line	12 t/h
Calorific value of waste	9.2 MJ/kg
Thermal capacity per line	30.7 MW
Waste type	Domestic solid waste

Bulky Waste Shredding

Type	Guillotine shears

Combustion System

Grate type	HZI Grate
Grate design	2 rows with 5 zones per row
Grate size	Length: 8.2 m, width: 4.8 m
Auxiliary combustion	Natural gas auxiliary burner

Boiler

Type	Four-pass boiler, horizontal
Steam quantity per line	35.15 t/h
Steam temperature	400 °C
Steam pressure	43 bar
Flue gas outlet temperature	150 °C

Flue Gas Treatment

Concept	SNCR denitrification, electrostatic filter, ID fan, HZI wet scrubber

Residue Treatment

Fly ash	2,000 Mg/year
Wastewater	48,000 Mg or (m^3) per year

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