

E-21	Keywords	Y3	equipment or facility	Z3/4	natural gas/electricity	S4	FEMS
						E25	heat supply

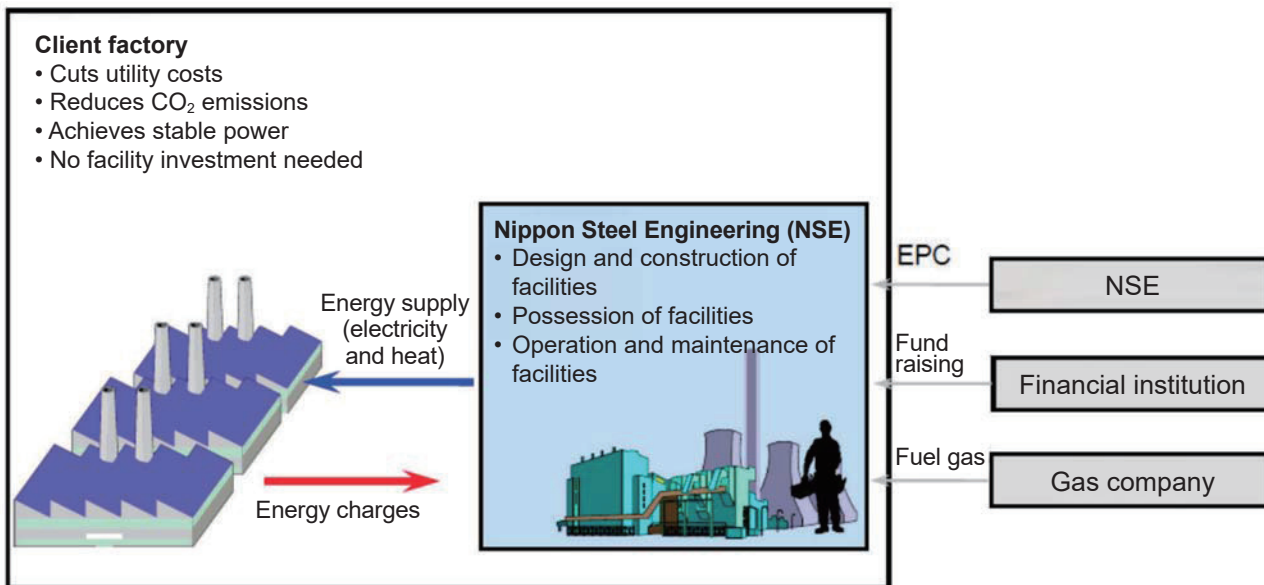
NIPPON STEEL ENGINEERING CO., LTD.

## On-site Energy Supply Business

### Features

Provides on-site energy service throughout all stages—not only design and construction of co-generation facilities but also possession, operation, and maintenance to offer cost-cutting benefits without imposing a large burden of initial investment on client factories.

#### On-site energy service business model

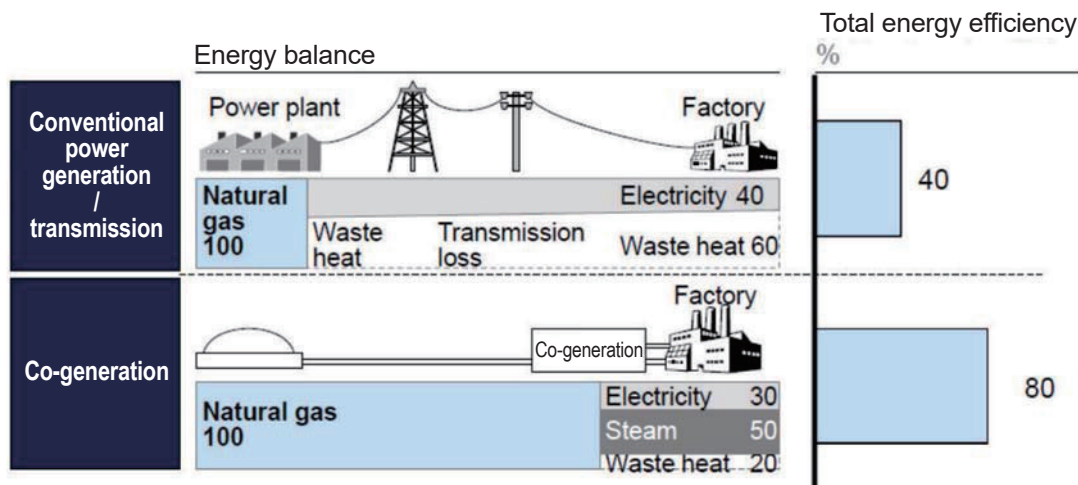


Customer can reduce energy cost and CO<sub>2</sub> emission with no initial investment. The on-site Energy Supply Business supplies high-quality energy constantly with comprehensive service from the engineering and construction of energy supply plants to their operation and maintenance.

### Basic Concept or Summary

Introducing co-generation can achieve highly-efficient energy use through effectively using waste heat (as steam or hot water) generated in the power generation process.

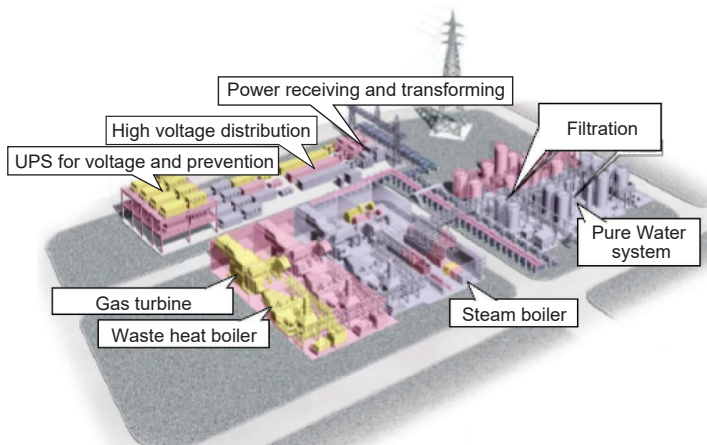
#### On-site energy service business model



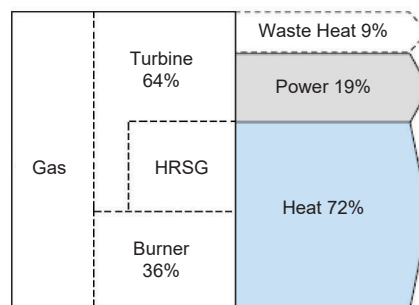
- Cuts costs through energy conservation (5-10%)
- Reduces CO<sub>2</sub> emissions (10-30%)

An example of on-site energy service project at a high-end film factory

1. For an industrial customer, a high efficiency system was created to meet the customer's energy requirements.
2. Production loss was reduced by eliminating the effect of momentary voltage drop on production facilities with installation of a gas turbine and a large-scale UPS (the largest in Japan).
3. The customer was able to concentrate management resources on their producing department by outsourcing of the operation and maintenance for utility supply facilities.



• Maximizes energy efficiency (91%: world-class level)



Installation in Practice or Schedule

Domestic Track record in Japan

Customers	Facilities	Start of commercial operation
FUJIFILM Kyushu Co., Ltd	7MW-class gas turbine co-generation x 4	April, 2006
Ajinomoto Co., Inc. Kawasaki Plant	6MW-class gas turbine co-generation x 6	March, 2007
J-OIL MILLS, Inc. Chiba Plant	8MW-class gas turbine co-generation	February, 2016
J-OIL MILLS, Inc. Shizuoka Plant	8MW-class gas turbine co-generation	February, 2017
KOHJIN Life Sciences Co., Ltd.	8MW-class gas turbine co-generation	February, 2019

Overseas Track record in Japan

Customers	Facilities	Start of commercial operation
Honda Automobile (Thailand)	Chiller, Boiler	July, 2015
Toray Thai Textile	7MW Gas turbine CHP	December, 2016
Yokohama Tire Manufacturing (Thailand)	7MW Gas turbine CHP	May, 2017
Honda Automobile (Thailand)	7MW Gas engine CHP	November, 2017
Thai Honda Manufacturing	7MW Gas engine CHP	April, 2018
Fermentation Plant	Boiler, Utility facilities	December, 2020

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