Source:JASE-W Japanese Smart Energy Products & Technologies
https://www.jase-w.eccj.or.jp/technologies/index.html

						S4	FEMS
F-21	Keywords	Y3	equipment or facility	Z3/4	natural gas/electricity	E25	general-purpose machinery

Kawasaki Heavy Industries, Ltd.

Gas Turbine Cogeneration System

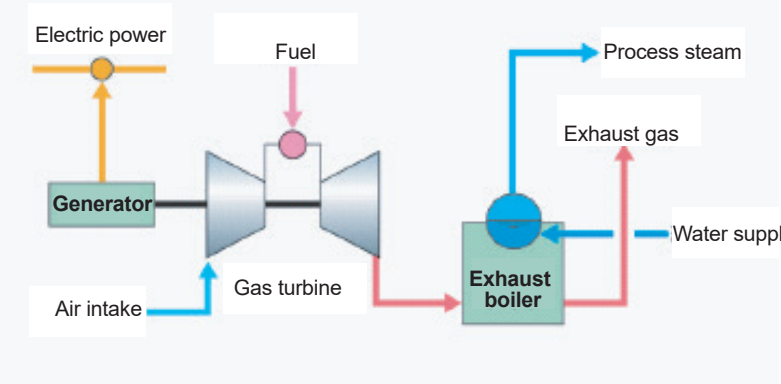
Features

- The driving source is a 100 % Japanese-made gas turbine.
- Reduction in NOx emission with the use of a low emission DLE (dry low emission) combustor
- Contribution to energy saving with the high overall efficiency
- A wide variety of product lineups with a wide variety of system variations and output from 1,500 kW to 30,000 kW

Model	PUC15D	PUC17D	PUC30D	PUC50D	PUC70D	PUC80D	PUC180D	PUC300D
Gas turbine model	M1A-13D	M1A-17D	M1T-13D	M5A-01D	M7A-02D	M7A-03D	L20A-01D	L30A-01D
Power generation output (kW)	1470	1770	2910	4645	6550	7610	17530	32160

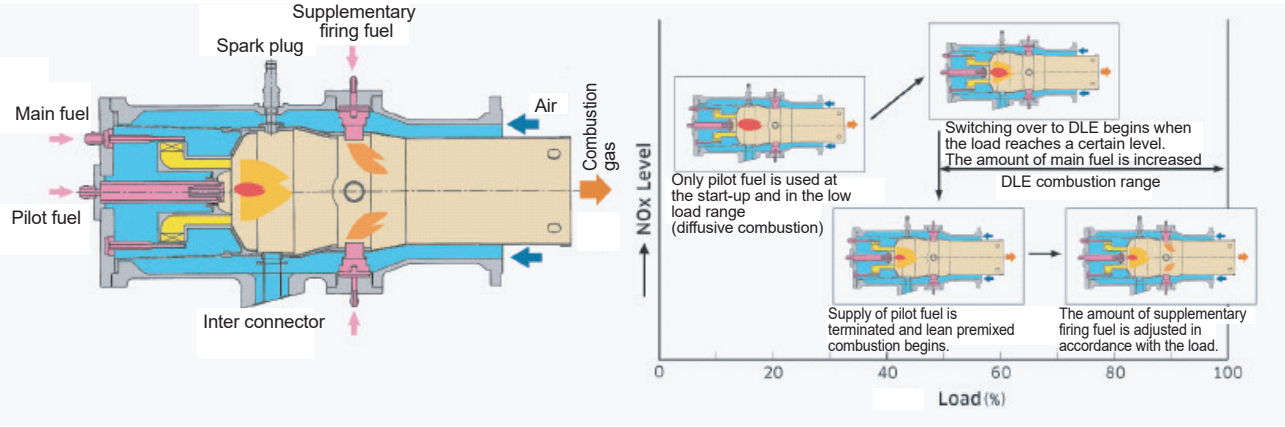
Basic Concept or Summary

A cogeneration system is a system supplying multiple types of secondary energy (electricity, steam, etc.) continuously by driving a gas turbine with primary energy (fuel).



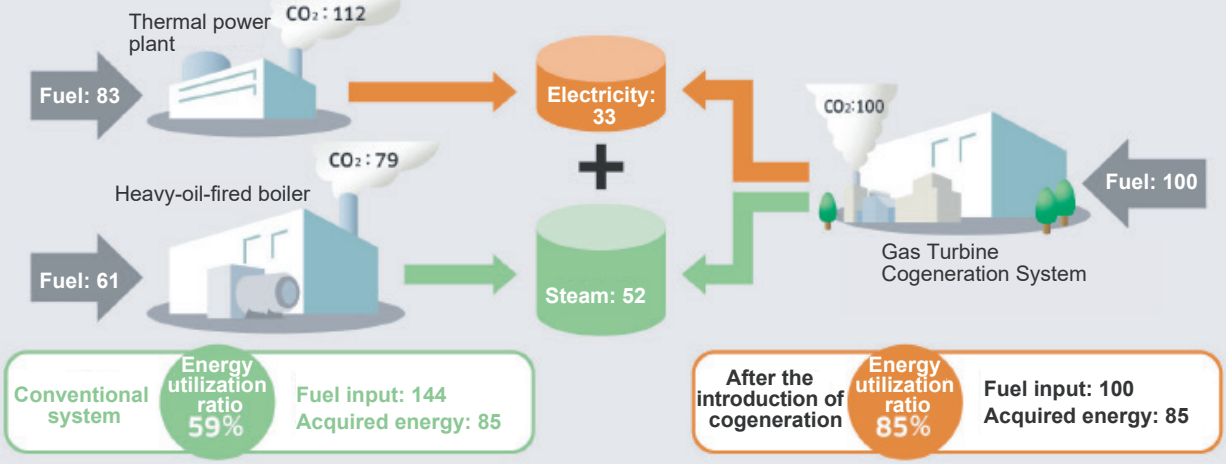
It is possible to reduce the emission of NOx with the use of DLE combustors.

Outline of DLE combustor



Effects or Remarks

An example of the effects of energy saving and reduction in CO_2 emission with an 8 MW-class gas turbine cogeneration system (PUC80D)



[Comparison table]

	Conventional system	After the introduction of cogeneration	Reduction ratio	
Fuel	144	100	30%	(Fuel reduction ratio) = (Reduction after the introduction of cogeneration) ÷ (Consumption in the conventional system) x 100 = (144 - 100) ÷ 144 x 100 = 30 (%)
CO_2 emission	191	100	48%	(CO_2 reduction ratio) = (Reduction after the introduction of cogeneration) ÷ (Consumption in the conventional system) x 100 = (191 - 100) ÷ 191 x 100 = 48 (%)

* Source of the values: Manual for the Calculation and Reporting of Greenhouse Gas Emission (2012), Ordinance for Enforcement of the Act on the Rational Use of Energy (2012), Interim Report of the Sub-Committee on the Scenario to Achieve the Target, Global Environment Committee, Central Environment Council (2001)

Installation in Practice or Schedule

Domestic Orders for the cogeneration systems received from Japanese clients: number of deliveries: 431 units (as of the end of March 2021)

Overseas Orders for the cogeneration systems received from Japanese clients: number of deliveries: 407 units (as of the end of March 2021)

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