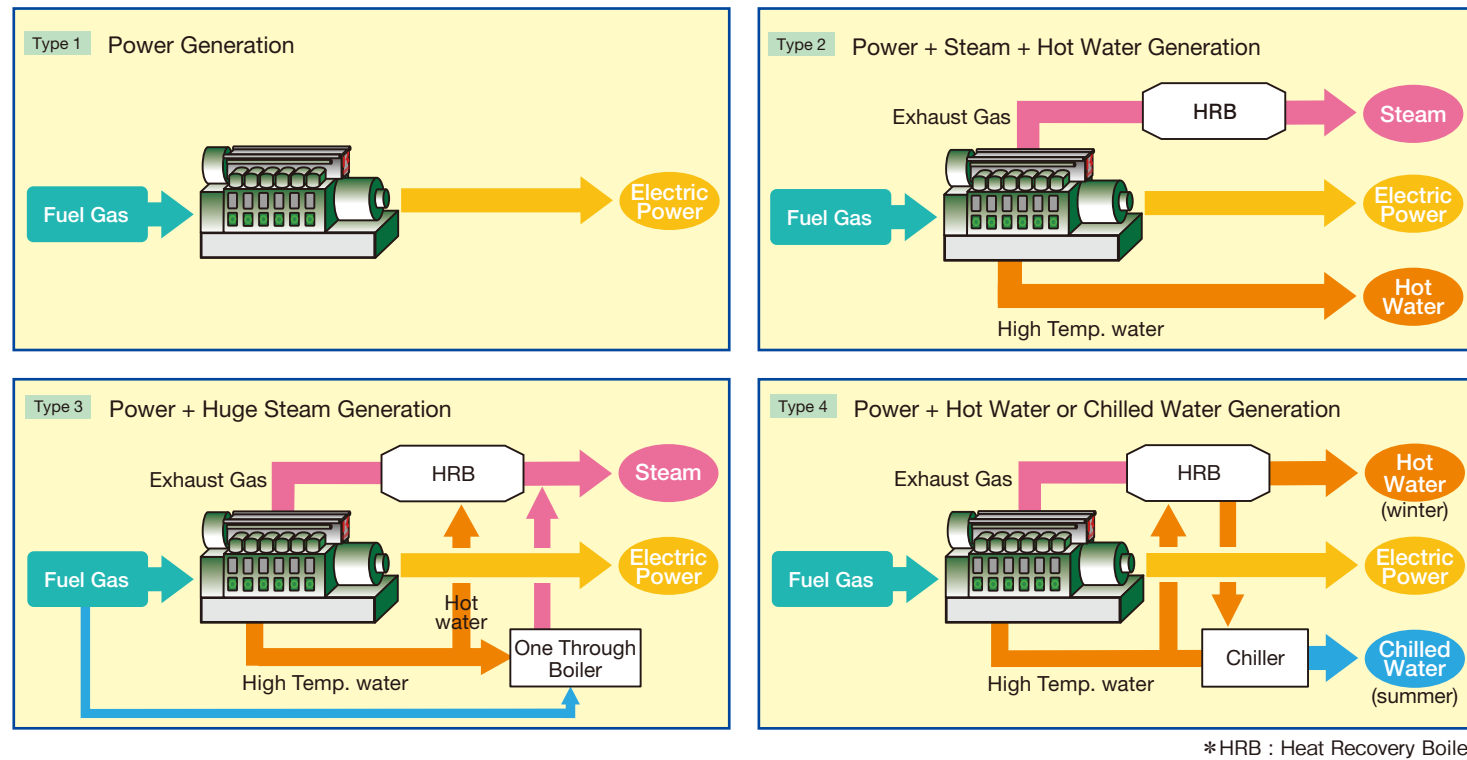


KAWASAKI GREEN GAS ENGINE

Typical Applications



Engine Outline KG-18

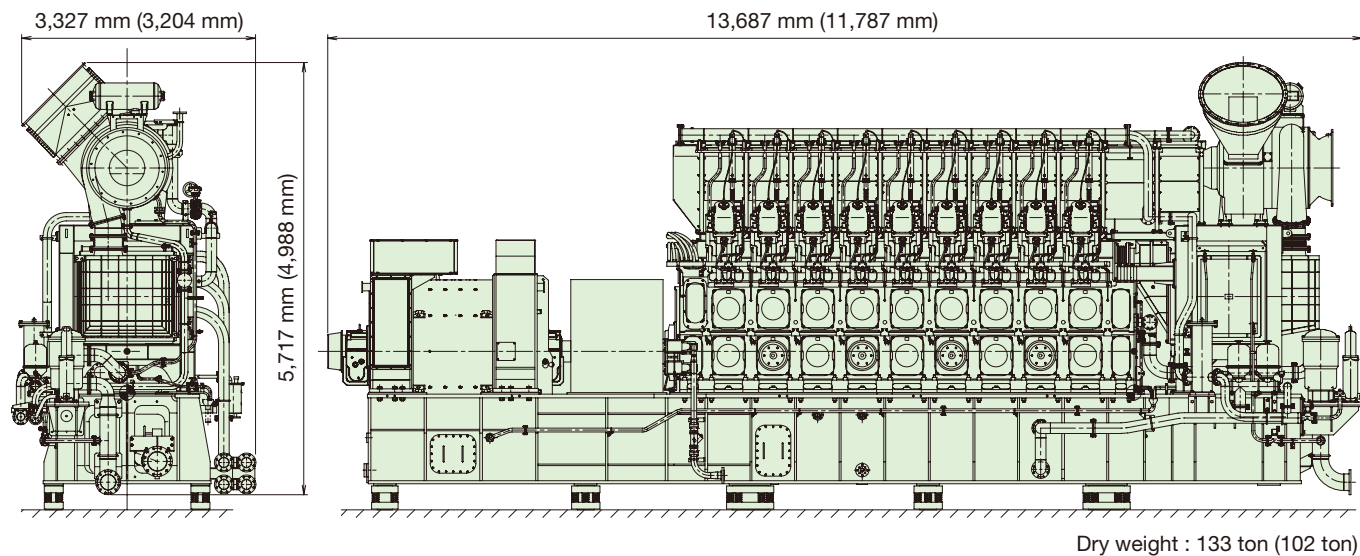


Figure in bracket shows dimension of KG-12. Same dimension for Standard and High efficiency models.

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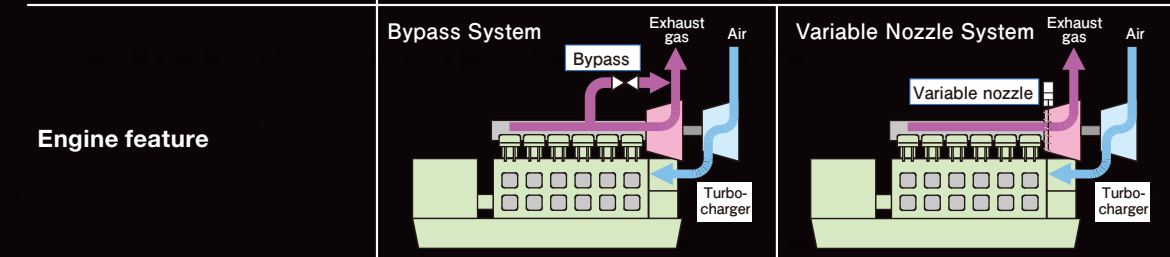
The World Best Performance

Electrical Efficiency 49.5%

NOx (at O₂=0%) ≤ 200 ppm

● Engine Lineup

Engine model		KG-12	KG-18	KG-12-V	KG-18-V
No. of cylinders		12	18	12	18
Cylinder bore×Stroke (mm)		300 × 480			
Electric output(kW) ※1	50Hz/750rpm	5,200	7,800	5,200	7,800
	60Hz/720rpm	5,000	7,500	5,000	7,500
Efficiency at generator terminal (%) ※2		49.0		49.5	
NOx (ppm)		200 or less (at O2=0%) 【 57 or less (at O2=15%) equivalent 】			
Ignition system		Spark plug ignition			
Min. continuous operation load (%) ※3		35			
Starting time ※4		within 10 min			
Lube oil consumption		less than 0.4g/kWh (as nominal data)			



Note ※1 ISO3046, Fuel : Standard gas in Japan (LHV:40.6MJ/Nm³)
 ※2 Gas Methane Number shall be more than 65.
 ※3 30 ~ 35% load is also operatable with time limitation 95 hour.
 ※4 From start order to rated load.

GREEN
Gas Engines

Gas Engine

Electric power 5.2 - 7.8 MW (50Hz)
5.0 - 7.5 MW (60Hz)

Kawasaki

110MW Nihon Techno Sodegaura Green Power



Project Description

Kawasaki was awarded a full turnkey contract in October 2011 to construct a power plant for Sodegaura Green Power. Its owner is Nihon Techno Co., Ltd., which is PPS*, a power producer and supplier. This 110MW power plant consists of 14 Kawasaki Green Gas Engines.

*PPS, a power producer and supplier, is defined under Japanese law as a type of independent electric power company that produces over 50kW of high-voltage electricity and supplies it to high-voltage electricity consumers such as factories and large-scale retail stores via the power grids of utility companies.

Overview

Plant Name: Nihon Techno Sodegaura Green Power Plant

Owner: Nihon Techno Co., Ltd.

Location: Sodegaura city, Chiba prefecture, Japan

Background: The electricity sold by Nihon Techno has been obtained externally through the electric power exchange market. Nihon Techno, however, decided to construct its own 110MW power plant with an eye to securing a stable supply of electricity in light of the recent supply status where we are facing the electricity shortage expected since the Great Earthquake disaster on Mar. 11, 2011.



Plant Configurations & Gas Engine Features

Configuration

Engine Type	KG-18-V (Rated Gross Output 7,800 kw)
Gross Electrical Output	109.2 MW (7.8 MW × 14 units)
Gross Electrical Efficiency	49.5%

Gas Engine Features

49.5% Electrical Efficiency - The World Best Performance

Achieved excellent electrical efficiency by optimized design of combustion chambers and individual cylinder control

Environmental Friendly

NOx emission : Less than 200 ppm (@O₂ = 0%)

High Partial Load Performance and Wide Continuous Operating Range

Operating range is 30% ~ 100% / Keep high efficiency at partial load
*suitable for peak operation

Quick Start Up

Within 10 minutes to 100% load from start order
*suitable for peak operation

Less Impact by Ambient Conditions

Stable output in hot climates / at high altitude

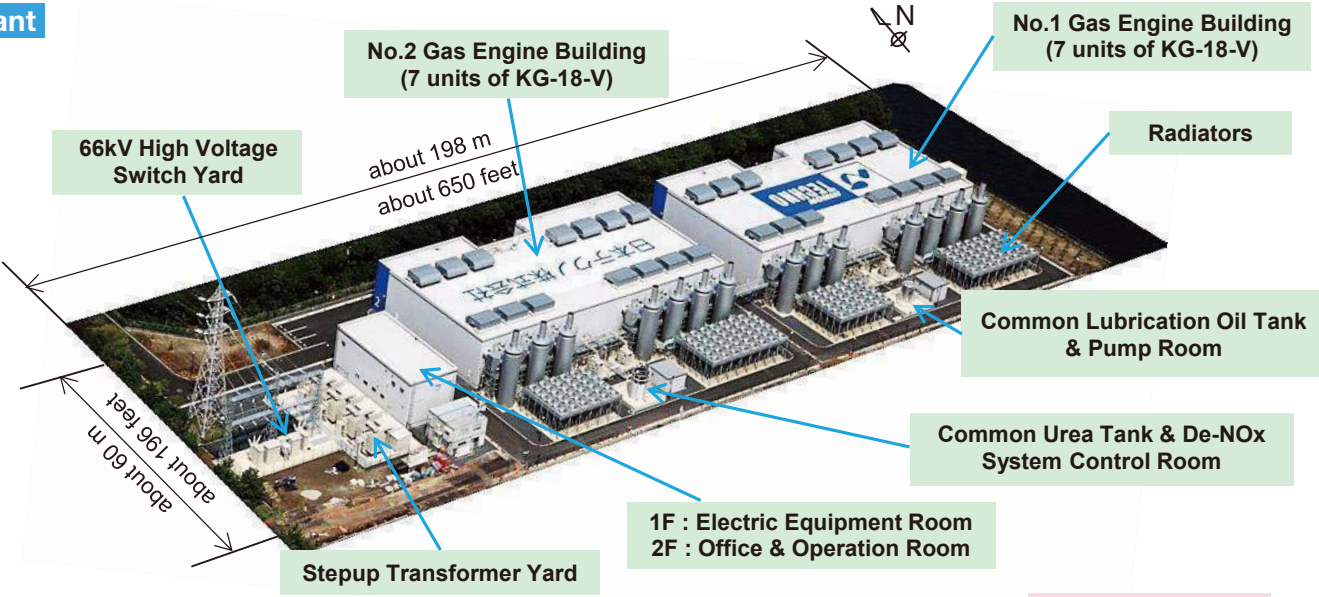
Construction Period: December 19, 2011 - August 15, 2012

Works	Oct./2011	Nov.	Dec.	Jan./2012	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
Planning & Designing											
Civil & Architecture Work											
Machine Installation											
Pipework											
Electrical Work											
Commissioning											

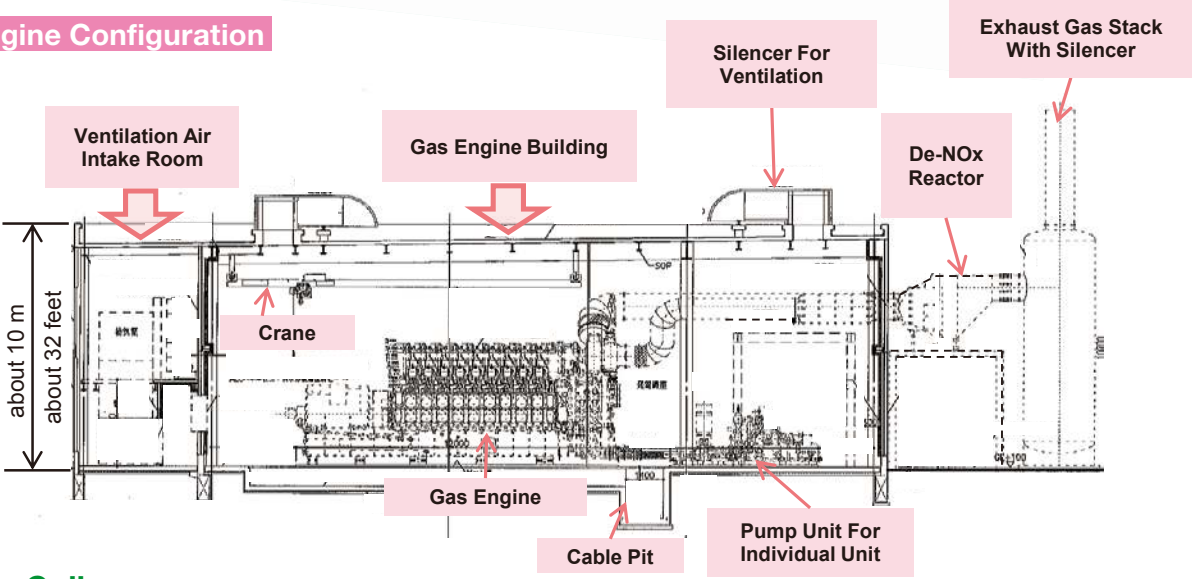
Plant outline

< Total site area : 12,430.24 m² (3.07acre) >

Plant



Each Engine Configuration



Picture Gallery

Under construction



Completed

