Kawasaki
Kawasaki Gas Turbine Europe GmbH

GREEN Gas Turbines

Questionnaire to combined heat and power (CHP) resp. combined cycle unit

GENERAL AVAILABLE DATA

Project title

Company name

Site / Address

Country / State:

Province / District:

City / Village:

SITE CONDITION

Geodetical height

m above sea level

Ambient temperature

Maximum	Minimum	Mean value	Design temp.
°C	°C	°C	°C

Atmospheric pressure

bar A

Humidity

from	to
relative %	relative %

Environmental conditions

☐ normal ☐ dusty ☐ salty

Emissions

☐ ppm ☐ mg/Nm³

NO_x		CO		Other	
below	at O_2 %	below	at O_2 %	below	at O_2 %

OPERATION

☐ Island operation ☐ Grid parallel operation ☐ Black start

☐ Continuous operation ☐ Daily start ☐ Weekly start

Estimated operating hours per year

APPLICATION

☐ CHP ☐ Combined Cycle ☐ Other

POWER REQUIREMENT

Electricity	Ambient temp.	Heat		
		Steam	Water	Other
approx.		approx.	approx.	approx.
MW	°C	t/h	MJ/h	

ACCOMPLISHMENT

Kind of fuel

Gaseous fuel

☐ Dual operation (gas & LPG) ☐ Natural gas ☐ LPG

Other

Liquid fuel

☐ Heating oil

Other

Inlet pressure

MPa (G)

1 MPa = 10 bar = 10,2 kg/cm²

Please fill out the following sheets for fuel specification!

Electrical design

kVA	kV	Hz	Phase	Generator isolation class

Heat recovery power output

Pressure	Temperature	Feed water temp.
MPa (G)	°C	°C

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INSTALLATION

Indoor- / Outdoorinstallation

- [ ] GTGS
- [ ] APU
- [ ] Compressor
- [ ] Other
- [ ] GEGS
- [ ] Boiler etc.
- [ ] Control

RESOURCE

Instruments air		Cooling water		Direct current	Feed water	Other
Volume	Pressure	Volume	Temperature	DC	Volume	

COMPLETION PLAN

Est. date of delivery at building site	Estimated date of comissioning

DATA FOR FEASIBILITY STUDY

Fuel costs	Costs steam / hot water	Current costs	Emergency power supply

SPECIAL REQUIREMENTS FOR THIS SYSTEM

RELEVANT REQUIREMENTS RESP. DEMANDS

FURTHER QUESTIONS?

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Data sheet for gaseous fuels

Lower heating value (LHV)	Specific weight	Gas pressure
kJ/Nm³	kg/Nm³	bar (g)

COMPOSITION

CH4 *Methane*	Vol %
C2H6 *Ethane*	Vol %
n-C3H8 *n-Propane*	Vol %
I-C3H8 *Iso-Propane*	Vol %
n-C4H10 *n-Butane*	Vol %
I-C4H10 *Iso-Butane*	Vol %
n-C5H12 *n-Pentane*	Vol %
I-C5H12 *Iso-Pentane*	Vol %
C6H14 *Hexane*	Vol %
H2S *Hydrogen Sulfide*	Vol %
N2 *Nitrogen*	Vol %
CO2 *Carbon Dioxide*	Vol %

Gas temperature	°C	*minimum -20 °C* *maximum 80 °C*	
Sulphur	%weight	***4MW oder less*** *0.5 %weight x LHV* *(kcal/kg)/10,300 or less*	***larger than 4MW*** *0.1 %weight x LHV* *(kcal/kg)/10,300 or less*
Total impurities	ppm weight	*30 ppm weight x LHV* *(kcal/kg)/10,300 or less*	
Particle size		*10 µm or less*	

NOTE

Fluid hydrocarbons are not allowed

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Data sheet for liquid fuels

Lower heating value (LHV)	Specific weight
kJ/Nm³	kg/Nm³

COMPOSITION

C *Carbon*	%weight	
H *Hydrogen*	%weight	
S *Sulphur*	%weight	*0.1 %weight or less*
O *Oxygen*	%weight	
N *Nitrogen*	%weight	
V *Vanadium*	ppm weight	*0.5 ppm weight or less*
Na + K *Natrium + Kalium*	ppm weight	*1 ppm weight or less*
Pb *Lead*	ppm weight	*2 ppm weight or less*
Ashes	%weight	*0.01 %weight or less*

Flashpoint	°C	*40 °C or higher*
Kinematic Viscosity (K)	mm^2s	*1 ≤ K ≤ 10 mm^2s at 50 °C*
Carbon content at 10 % distillation residuum	%weight	*0.7 %weight or less*
Distillation temperature at 90 %	°C	*300 °C or less*
Clouding point	°C	*0 °C or less (*)*
Residuum whilst suction	mg/100 ml	*1 mg/100ml or less (**)*

NOTE

* Between -5 and ~5 °C a preheater will be necessary.

** If the residuum content is higher, the fuel filters must be replaced more frequently.