



Conversion of Diesel Power Plants for operation on Vegetable Fuel

QUESTIONNAIRE FOR CONVERSION OF DIESEL POWER PLANT TO VEGETABLE FUEL

LOCATION: _____
CAPACITY: (MW TOTAL) _____
QTY/ TYPE OF ENGINES _____
RATING _____
CURRENT FUEL: _____

1. General

1.1 Type of project

Is the project:

- a new plant? Yes/No
- an extension of an existing plant? Yes/No
- a reconstruction of an existing plant? Yes/No

Will the plant supply:

- the utility grid? Yes/No
- a captive customer? Yes/No

1.2 Site location

State _____
Nearest large town _____
Exact location (address or map reference) _____

Elevation above sea level _____

2. Cogeneration

2.1 In case of a plant extension, please provide a heat flow diagram including the design data of the existing plant components, mechanical and electrical documentation, drawings of buildings, photographs (if available), etc.

2.2 Power plant data

Type of the engine

Current general setting of the engine

Throughputs (consumption / flow) of fuel, lubricating oil, cooling water

Voltage supply (V; Hz)

Analysis/type of the vegetable oil

Required damping capacity to the inject of the fuel (Representation in cSt or mm²/s)

Pressure of the fuel before engine

Fuel Schematic of the existing fuel systems

Schematic of the cooling water systems

Layout of the installation of the power plant

Current Layout and capacity of tank farm (main storage, settling tank service tank, mixing tank)

2.3 Fuel

Which type(s) of fuel is (are) currently used?

Please provide a batch certificate.

What is the fuel price delivered (\$/ton)?

2.3.1 What alternative fuel will be/ is available?

What is the fuel price delivered (\$/ton)?

2.3.2 Analysis batch certificate



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2.3 Description of the current Power Plant

- 2.4.1 Please provide layout drawings of fuel system and electrical wiring diagram of the current auxiliaries such as fuel treatment pumps, clarifier, purifier centrifuge, viscosity control, capacity and rating of fuel delivery pumps, current fuel farms set up with tank capacity.
- 2.4.2 Please indicate the typical operation mode such as total operation per day and operation hour/ year and load factor (MW) single largest load (MW) of consumer which will be disconnected or connected while one load pattern.
- 2.4.3 Please provide all information, layout, tech. data if the current plant is equipped with heat recovery (hot water (m3 and temp. or Steam kg, temp and pressure) from the exhaust gas of the engine(s) or oil fired boiler.
- 2.4.4 In case of Boiler please indicate how many tons of fuel per year are being used to produce hot water/Steam .
- 2.4.5 Please let us know if there is a hot water or steam requirement.

3. Transportation

Where is the nearest airport?
(location/distance from site)

Where is the nearest/most convenient port for the import of plant components?
(location/distance from site)

Which means of transportation are available for the movement of plant components from the port to site?

Are there restrictions on the transportation route with respect to weight, dimensions (packaging) including bridge weight limits, road widths, bridge/tunnel clearances?
(Please explain)

What transportation time is expected from port to site?
(hours/days)



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4. Commercial

4.1 Authorities responsible for the implementation of the project and the application of the Kyoto Co2 Credit.

- a) Federal government _____
Responsible Ministries/Departments _____
- b) Regional/State government _____
Responsible Ministries/Departments _____
- c) Local government _____
Responsible Departments _____
- d) Other agencies (development agencies) _____
Responsible Departments _____
- e) Environmental approval -----
- f) Local rules, requirements -----

5. Economic Factors

5.1 What prices can be obtained or have to be paid for:

- Electricity (capacity & Energy Tariff ?) _____ US\$/kWh
- Heat? (hot water, steam) _____ US\$/MWh
- Water? _____ US\$/m³
- Other _____

5.2 Which fuel prices must be expected for:

- | | |
|-------------------------------|----------------------------------|
| Gas _____ US\$/m ³ | Property _____ kJ/m ³ |
| LDO _____ US\$/t | Property _____ kJ/m ³ |
| HFO _____ US\$/t | Property _____ kJ/m ³ |
| Lube oil _____ US\$/t | |
| Vegetable oil -----US\$/t | Property ----- kJ/m ³ |

Date: _____

Signature: _____



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Please note that all of this information is required to give you a tailor-made conversion proposal at the least cost and in the shortest time possible, free of charge and with no obligations to you. In addition we will use your input to run your numbers and prepare a computerized Return on Investment (ROI) Calculation to demonstrate the payback time.

Return on Investment for a conversion of Diesel Power Plant Projects

This ROI enables you to compare the capital Investments for the conversion of your current fuel (Diesel) to Vegetable fuels and will be mainly based on the savings on the cost of fuel, as well as the extended time between overhaul (TBO) which will save you a also expenses in respect to spare parts consumption and down time, while operating on the much cleaner vegetable fuel. We will also consider Carbon Credits as part of the Kyoto Protocol, if you are eligible.

The more details we thus know, the more accurate will be our analysis for your benefit.

Please state units of measurement as mentioned above or give conversion factors if applicable.

Please send this questionnaire by mail or email to:

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