



Biomass CHP systems

PROJECT PRELIMINARY INFORMATION

Contact Information

Mr. Ms. Mrs. Dr.

Name: _____

Organization: _____

Address: _____

City: _____

State/Province: _____

ZIP/Postal Code: _____

Country: _____

Phone: _____

Fax: _____

E-mail: _____

Website: _____

How did you learn about WTE s.r.l. (Internet search, personal referral, publications/articles, conferences, other) ?

Purpose of the inquiry:

What role do you play in the project (developer, finance, broker, industry, principal, other) ?

Do you currently have or have you ever owned/operated a power plant or a waste processing plant? Yes No

Is this an investigative/academic inquiry? Yes No

Is a feasibility study envisaged? Yes No

Project general information

Has a Contract Agreement or Memorandum of Understanding been drawn up for this project? Yes No

Has the availability of biomass in the area been investigated? Yes No

Has provision been made for gathering and transporting the feedstocks to the site? Yes No

Project foreseen start date: _____ Required completion date: _____

Please add any other information relevant to the project:

Biomass availability and characterization

	Material	Availability (Tonnes/year)	Bulk density (kg/m ³)	Calorific content (MJ/kg)	
				HHV	LHV
1					
2					
3					
4					
5					
6					
7					
8					

	Proximate analysis (wt %)				Carbon, Hydrogen and Nitrogen			Chlorine and Sulphur	
	Moisture (wb)	Ashes (db)	Volatile (db)	FC (db)	C (% daf)	H (% daf)	N (% daf)	Cl (% daf)	S (% daf)
1									
2									
3									
4									
5									
6									
7									
8									

Abbreviations:

wb wet base daf dry - ash free HHV Higher heating value
db dry base FC Fixed Carbon LHV Lower heating value

Please complete the above tables supplying as more information as possible.

A correct characterization of biomass is of primary importance in the design of a customized CHP energy system. Design and sizing of furnace, boiler and flue gas treatment system are significantly influenced by the characteristics of materials to be used as combustible.

Analysis of combustible required at the beginning of the engineering aim to determine: bulk density, calorific value, proximate analysis (moisture, ashes, volatile and fixed carbon as wt %). Ultimate analysis (to determine content of C,H,N; S,Cl), elemental analysis, biochemical composition and ash composition/characteristics are or might be required in further stages of the project.

If complete data are not available at the beginning of the project, data from available Literature will be used instead. In any case, a complete analysis of materials to be used as combustible will be requested further on.

The table to the right summarizes the most relevant technical standards that define terminology, measurement methods and sampling methods, as approved by CEN/TC 335, the technical committee developing the draft standard to describe all forms of solid biofuels within Europe.

CEN/TS 14778-1:2005	Solid biofuels - Sampling - Part 1: Methods for sampling
CEN/TS 14778-2:2005	Solid biofuels - Sampling - Part 2: Methods for sampling particulate material transported in lorries
CEN/TS 14780:2005	Solid biofuels - Methods for sample preparation
CEN/TS 15103:2005	Solid biofuels - Methods for the determination of bulk density
CEN/TS 14918:2005	Solid Biofuels - Method for the determination of calorific value
CEN/TS 14774-1:2004	Solid biofuels - Methods for determination of moisture content - Oven dry method - Part 1: Total moisture - Reference method
CEN/TS 14774-2:2004	Solid biofuels - Methods for the determination of moisture content - Oven dry method - Part 2: Total moisture - Simplified method
CEN/TS 14774-3:2004	Solid biofuels - Methods for the determination of moisture content - Oven dry method - Part 3: Moisture in general analysis sample
CEN/TS 14775:2004	Solid biofuels - Method for the determination of ash content
CEN/TS 15148:2005	Solid biofuels - Method for the determination of the content of volatile matter
CEN/TS 15104:2005	Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen - Instrumental methods
CEN/TS 15105:2005	Solid biofuels - Methods for determination of the water soluble content of chloride, sodium and potassium
CEN/TS 15289:2006	Solid Biofuels - Determination of total content of sulphur and chlorine
CEN/TS 15297:2006	"Solid Biofuels – Methods for the determination of the content of minor elements (As, Cd, Co, Cr, Cu, Hg, Mo, Mn, Ni, Pb, Sb, Se, Sn, V and Zn)"
CEN/TS 15290:2006	"Solid Biofuels – Methods for the determination of the content of major elements (Al, Si, K,Na, Ca, Mg, Fe, P and Ti)"
CEN/TS 15370-1:2006	Solid Biofuels - Method for the determination of ash melting behaviour - Part 1: Characteristic temperatures method

Project requirements on Electric and Thermal Power

Required electric power (MWh) _____

Is the electric power to be delivered to the National Grid Operator?

Yes No

If the electric power will be delivered to the grid, it will be in Medium or High Voltage?

MV HV

List here any relevant information concerning the electric power (internal use, regulations concerning connection with NGO, etc.)

Required thermal power (MW_{th}): _____ Demand of thermal power (hours/year): _____

Use of thermal power:

Steam, industrial process Hot water, industrial process District Heating District Cooling

List here any relevant information concerning the use of thermal power (for industrial processes, DH, DC):

Project site

Has the plant site been selected?

Yes No

In case, please indicate here site's location

Available indoor surface: _____ Available outdoor surface: _____

Site

characteristics:

- | | | | |
|--|---|--|---|
| <input type="checkbox"/> Greenfield | <input type="checkbox"/> Power plant retrofit/rebuild | <input type="checkbox"/> Municipal DH | <input type="checkbox"/> Forestry/Wood industry |
| <input type="checkbox"/> Brownfield | <input type="checkbox"/> Pulp&paper plant | <input type="checkbox"/> Industrial site | <input type="checkbox"/> Distillery |
| <input type="checkbox"/> Other (specify) | | | |

Site

access:

- Rail spur
- Highway
- National/State Road
- To be realized

Availability of Plant

Utilities:

- | | | |
|---|---|---------------------------------------|
| <input type="checkbox"/> Industrial water | <input type="checkbox"/> Natural gas pipeline | <input type="checkbox"/> Landfill gas |
| <input type="checkbox"/> Drinkable water | <input type="checkbox"/> Propane | <input type="checkbox"/> Diesel oil |
| <input type="checkbox"/> Electric Power | <input type="checkbox"/> Butane | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Sanitary sewer | <input type="checkbox"/> Biogas | |

Constraints on the site area:

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Need for clearing areas | <input type="checkbox"/> Methane pipeline | <input type="checkbox"/> Acqueduct or water lines | <input type="checkbox"/> Building height _____ |
| <input type="checkbox"/> Power lines | <input type="checkbox"/> Oil pipelines | <input type="checkbox"/> Sewers | <input type="checkbox"/> Other _____ |

Site and area plan, geology, orography and meteorology

- Is a detailed site plan available? Yes No
- Is a map reporting the area orography available? Yes No
- Are data about the site area geological characterization relevant and available? Yes No
- Are data about the terrain or the existing building floor maximum load available? Yes No
- Are data about site area seismicity relevant and available? Yes No
- Are data about snow falls and building amximum snow load relevant and available? Yes No
- Are data about building wind load relevant and available? Yes No
- Is the plant area subject to any hydrogeological risk? Yes No
- Are yearly statistics on rainfall rate relevant and available? Yes No
- Are yearly statistics on wind profile available for the area? Yes No
- Are yearly statistics on daily temperature available for the area? Yes No
- Are yearly statistics on moisture in the air available for the area? Yes No

Project financing

- Has private funding been secured? Yes No
- Is Regional/State or EU funding available? Yes No
- Is equity participation (Joint Venture, partnership) desired? Yes No
- Do you require a Build/Operate/Transfer or a Build/Own/Operate/Maintain model? Yes No
- Is a Public Private Partnership (PPP) envisaged for this project? Yes No
- Has the potential for CDM/JI funding of the project been explored ? Yes No
- Will the project be put up for bid? Yes No

Remarks
