TECHNICAL QUESTIONNAIRE FOR SIZING AND PROCESSING FUEL TO BE USED IN WASTE-TO-ENERGY SYSTEMS

Description of Material to Grind

Date: …...../...../.....

Customer: _____

Address: _____

_____

Phone No: _____

E-mail address: _____

1. Projected components of the system:

- q Shredding and grinding technology
- q Conveyor technology
- q Separation technology
- q Storage & unloading technology
- q Metering technology
- q Complete boiler feed system

2. Description of feedstock material:

2.1. Type of feedstock:

- q **Biomass**
  - o Industrial wood scraps
  - o Pallets
  - o Bark
  - o Green waste
- q **Post consumer plastic**
- q **Rubber tires**
- q **MSW - RDF (refuse derived fuel)**

2.2. Unprocessed feedstock specification (as received or generated):

size: from ..... in. up to ..... in.

oversize material: to ..... in. .....% max.

humidity of material: .....% mc.

gross average density: .....lbs/yd^3

2.3. Composition of feedstock (wood, bark, plastic, glass, ferrous, nonferrous, organic, fabric, electronic, hazardous, polycoat, demolition, appliances, special):

.....%...

.....%...

.....%...

.....%...

.....%...

.....%...

.....%...

.....%...

Other.....

2.4. Separation / diversion of materials for recycling:

Materials to be diverted .....

.....

.....

recycled onsite ..... **or offsite** .....

equipment required .....

.....

.....

Equipment positioning within the system .....

.....

Manual sort line(s) planned?: yes _____ or no _____

3. Logistics:

3.1. How is the material delivered?

- q **Automatic infeed**
- q **By front-end loader (outdoor storage)**
- q **Grapple / crane from bunker**
- q **By truck**
- q **Others: .....**

Flow requirements:

Input quantity = ... tons per year.

The material will be brought in / processed ..... days per week with a daily operation time of ..... hours.

Output quantity: to the combustion system or final down stream processing equipment =.....tons per hour.

- q **Continuous**
- q **Intermittent**

Number of the infeed intervals =..... per hour.

Period of the infeed interval =..... minutes.

3.3. Volume of storage =.....yds^3.

Preferred storage / unloading technology:

.....

.....

4. Process technology:

4.1. Reception of the materials according to specification of:

- **Reception station**
  - Discharge system
  - Loading conveyor
  - Multiple screws
- **Outdoor storage**
- **Existing conveyor systems**
- **Others:** .....

4.2. Discharge from the reception station:

discharge capacity: ..... **yds³ / hr**.....

lbs. / hr.....

Will the material be discharged / blended from different sources?

Yes..... **No**.....

4.3. Shredding / grinding requirements:

batch.....**or continuous**.....

Resulting material consistency specification, if shredded:

Chip or particle size: ..... in. minus

Special considerations:

.....

.....

Type and dimensions of possible contaminants or foreign parts (tramp metal, dirt, rocks, hazardous materials):

.....

.....

4.4. Separation

- q Ferrous separation
- q Non-ferrous separation
- q Density separation (air classification of: stones, glass, paper, plastic, etc.)

  .....
- q Size classification (screening types: oscillating, trommel, vibration)

  ……

4.5. Preferred conveying technology

- q To be chosen by Biofuel Boiler Technologies LLC
- q Drag chain (paddle) conveyors
- q Belt conveyor
- q Vibration conveyors
- q Screw conveyors
- q Pneumatic conveyance

4.6. Intermediate storage required?

Yes, storage volume ..... yds^3

Discharge capacity ..... yds^3/hr.

No.....

Type:

- q Block bunker with manual unloading
- q Pit with walking floor
- q Cylindrical silo with sweep arm

4.7. Safety / code requirements:

- q Extinguishing devices
- q Dust exhaust
- q Other emissions
- q Ground water
- q Enclosures
- q Electrical / switches
- q Structural / seismic
- q Other environmental
- q Alarms

4.8. Electrical controls

- q Customer specifications
- q Visualization
- q Conductive systems
- q Interlocks within system:

5. Planning:

5.1. Do preliminary designs, layouts, conceptual sketches, etc., exist?

(If yes, please forward them to us) Yes..... No.....

5.2. Does a performance specification (bid specs) exist?

(if yes, please forward them to us) Yes..... No.....

5.3. Interface with other suppliers?

.....

.....

.....

5.4. Budget status, project timetable, miscellaneous customer desires?

.....

.....

.....

6. Project status:

Preliminary design phase, submit:

- q Budget proposal / offer
- q Flow diagram
- q Descriptive materials & dimension sheets
- q Draft drawing

OR

Final design phase, submit:

- q Detailed proposal / offer
- q Detailed drawings
- q Arrange meeting

7. Miscellaneous data:

System voltage: ..... **V/** ..... **ph/** ..... **Hz.**

Existing facility: **yes** ..... **or no**.....

Climatic conditions: .....

Installation: **yes** ..... **or no**.....