

Technical Questionnaire for MRF (Material Recovery Facility) Recycling

Waste Separation, Shredding & Conveying Technologies

Material Recovery Facility ("MRF") - "... a facility where recyclables are sorted into specific categories and processed, or transported to processors, for remanufacturing." (U.S. EPA, 1994)

Date:.....

designer initials: (*Vecoplan use*)..... project: (*Vecoplan use*).....

customer: location:

address..... phone no.....

..... e-mail address.....

name of responsible person / *customer proj. mgr.*.....

1. Projected components of the system?:

- reception technology
- shredding and grinding technology
- conveying technology (sorting & transport)
- separation technology
- baling technology
- storage & unloading technology
- metering technology

2. Recovery criteria?:

2.1. Types of recovery at the MRF:

- single- stream curbside** (glass, plastics, aluminum, steel, fiber)
- co-mingled** (glass, plastic, aluminum, steel)
- unsorted MSW** (combination transfer station, with high organic content)
- secondary fiber** (OCC, ONP, high grades, mixed paper)
- construction & demolition debris** (treated/non-treated wood, gypsum, glass, ceramic, masonry, asphalt, wire/cable, metal, paper)
- containers** (#1 #2 #3 #4 #5 #7 plastics, ferrous, non-ferrous, glass)
- infectious waste** (sterilized, regulated medical waste)
- other**.....

2.2. General objectives of recovery (check all that apply):

- recycling / reprocessing / remanufacturing**
- reuse**
- waste-to-energy (RDF – refuse derived fuel)**
- composting**
- destruction**
- recirculation to landfill**

2.3. Composition of stream, specific objectives & percentages (list materials in sequence of separation / processing within the operation):

ex: (.....*PETE*.....**objective:**.....*recycling*.....%.17.5.)

.....**objective:**.....%.....
.....**objective:**.....%.....
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residual.....

2.4. On-site processing:

..... manual sort line	materials
..... shredding	materials
..... baling	materials
..... ferrous separation	materials
..... non-ferrous	materials
..... screening	materials
..... disc	materials
..... air classification	materials
..... storage	materials

3. Logistics?:

3.1. How is the material delivered?

- automatic infeed**
- by front-end loader (outdoor storage)**
- grapple / crane from bunker**
- by truck**
- others:**

3.2. Throughput 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 storage, transport or down stream
processing equipment =tons per hour.

- continuous**
- intermittent**

number of the infeed intervals = per hour.
period of the infeed interval = minutes.

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.....or no.....

4.3. Shredding / grinding requirements:

materials requiring shredding / size reduction
.....
.....
batch.....or
continuous.....
resulting material consistency specification, if shredded:
chip or particle size: in. minus

4.3. Shredding / grinding requirements: (cont.)

special considerations:

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.....

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

.....
.....

4.4. Separation

- ferrous separation**
- non-ferrous separation**
- density separation** (air classification of: stones, glass, paper, plastic, etc.).....
- size classification** (screening types: disc, star, oscillating, trommel, vibration)
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4.5. Preferred conveying technology

- to be chosen by Vecoplan**
- drag chain (paddle) conveyors**
- belt conveyor**
- vibration conveyors**
- screw conveyors**
- pneumatic conveyance**

4.6. Intermediate storage required?

yes, storage volume yds³
discharge capacity yds³/hr.

No.....

type:

- std. metal bin / platform / material flow config.**
- block bunker with manual unloading**
- pit with walking floor**
- cylindrical silo with sweep arm**

4.7. Termination of Vecoplan-supplied system – transition to / integration with:

- Other downstream equipment**.....
- Required control interlocks**.....

4.8. Safety / code requirements:

- extinguishing devices
- dust exhaust
- other emissions
- ground water
- enclosures
- electrical / switches
- structural / seismic
- other environmental
- alarms

4.9. Electrical controls

- to be designed by Vecoplan
- customer specifications
- visualization
- conductive systems
- interlocks within system:

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5. Planning?:

5.1. Do preliminary designs, layouts, conceptual sketches, etc., exist? (if so, please forward them to us)

Yes..... no.....

5.2. Does a performance specification (bid specs) exist, if so, please forward to us.

Yes..... no.....

5.3. Interface with other suppliers?

.....
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.....

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

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6. Project status?:

Preliminary design phase, submit:

- budget proposal / offer
- flow diagram
- descriptive materials & dimension sheets
- draft drawing

OR

Final design phase, submit:

- detailed proposal / offer
- detailed drawings
- arrange meeting

7. Miscellaneous data?:

System voltage.....V/.....ph/.....Hz.

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

Climatic conditions:.....

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

Type of organization:

- private
- municipal
- insitutional
- military
- other.....

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