Pro Forma Design Services

engineered COMPOST systems

The operating realities of each composting facility are unique; a site-specific study is the best way to anticipate the implications of developing a new facility, or installing a different processing technology in an existing facility. This study should overlay the proposed technologies to the operational, commercial, and regulatory conditions at the target facility. At ECS, the outcome of this study is "pro forma" analysis and a design review report that provides the client with solid data. From this report, they can base a business decision on the viability of the proposed facility, or facility upgrade.

ECS is very efficient at developing Pro Forma Design Reports. We have well-developed analytic and cost models; a broad range of existing designs; updated equipment prices; and excellent working relationships with compost analysis laboratories and product vendors. Our Pro Forma Design clients who decide to continue with the development or modification of their compost facility, do so with better planning and greater confidence. The clients who find out that owning and operating a compost facility would not have met their goals, are happy to figure this out during the early planning stage.

When clients decide that the project will meet their goals, and decide to move ahead, the next step is permitting and construction design. The role of ECS in this phase is to develop the detailed process design in conjunction with their civil engineer who develops the construction package required for construction permitting. In addition, ECS frequently works in support of consultants who are charged with environmental permitting.

Once a construction begins, ECS coordinates the delivery of equipment to the site and works closely with the contractor to ensure the installation is efficient. Once the facility begins operations, ECS provides start-up, training, and long-term technical and maintenance support.

ECS Pro Forma Design and Analysis Outline

ECS regularly provides Pro Forma Design Services for compost facility planning and business forecasting. We work with clients and their consultants to identify their primary areas of concern and opportunity, and to help them analyze an approach to best match their goals.

The actual analysis and design tasks vary considerably from one facility to the next. These tasks range from a simple facility sizing and construction cost estimation (~20 hours); to much more in-depth facility planning and cost analysis (up to 160 hours). The pro forma tasks carried out are selected, in consultation with the client, from the following list:

1. **Facility Operation Goal Definition**
2. **Feedstock Analysis** (laboratory assays, theoretical mix, and mass-balance calculations)
3. **Initial Process Design**
   a. Processing alternatives
   b. Operational description
   c. Material flow diagram (feedstock requirements, water use, air handling volumes)
   d. Process & instrumentation diagram
   e. Preliminary facility layout – land requirement
   f. Equipment list and specifications (material handling & time-motion models)
   g. Staff skill requirements and labor estimations
4. **Environmental Compliance Assessment**
   a. Odors
   b. Air emissions
   c. Surface water
5. **Facility Cost Analysis**
   a. Budgetary capital and financing costs (land, design and permitting, equipment budget, construction cost)
   b. Operation & maintenance costs (labor, power, fuel, water and sewer, G&A costs, bulking agent requirements, equipment O&M costs)
6. **Revenue and Profit Models**
   a. Tip fees (Tip fee market analysis)
   b. Product sales (market analysis, quality requirements, product options)
   c. Carbon and pollution credits
   d. Sensitivity analysis

- **Facility Design**
- **In-Vessel**
- **ASP**
- **Automated Controls**
- **Client Support**

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