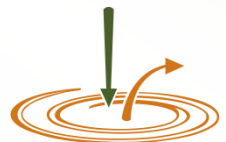


Lesson 10: Composting Economic Fundamentals

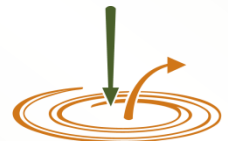
Learning Objectives:

- Understand basic business financial principles and terms
- Know major revenue sources and expenses of composting
- Realize the importance of unit costs for evaluating operations
- Be familiar with concept of a pro-forma



Business Finance Fundamentals

- Balance Sheet:
 - A snap shot of the financial health of an operation
- Income Statement (Profit & Loss):
 - Shows income, expenses and profit/loss
- Retained Earnings Statement (Equity):
 - Shows change in equity held in the business
- Cash Flow Statement:
 - Shows the impact of cash in and cash out on balance sheet



Balance Sheet

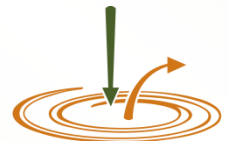
Snapshot at a given point in time of:
(e.g. end of fiscal year)

■ Assets:

- Land
- Buildings
- Equipment
- Contracts
- Accounts Receivable
- Product

■ Liabilities:

- Loans
- Accounts Payable
- Leases
- Buildings & Equipment Depreciation



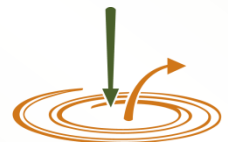
Income Statement

■ Revenues:

- Tip Fees
- Compost Sales
- Grants
- Equipment Sales

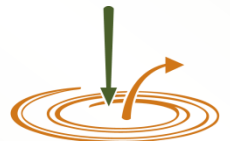
■ Expenses:

- Labor
- Fuel
- Equipment M&R
- Lease Payments
- Contract Services
- Debt Service
- Insurance



Full Cost Accounting

- Expands the Income Statement to include indirect costs and benefits:
 - Indirect Costs: administrative overhead, city services, etc.
 - Indirect Benefits: avoided landfill tip fees, avoided soil purchase, carbon credits, etc.
- Provides a more complete picture of costs and benefits of compost



Importance of Unit Costs

- Determine the unit cost (\$ per ton) for each stage of the operation
- Example – Grinding

Front End Loader:

Annual Lease / Debt Service \$23,000

Annual Fuel and O&M \$39,000

Grinder:

Annual Lease / Debt Service \$32,000

Annual Fuel and O&M \$109,000

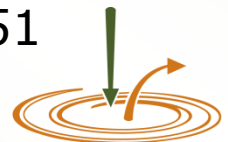
Labor:

Equipment Operator \$32,000

Total Annual Cost \$235,000

Annual Throughput (tons/year) 93,600

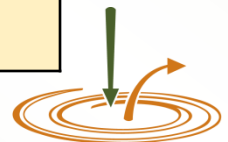
Average Cost/Ton \$2.51



Unit Revenue(Cost) by Activity

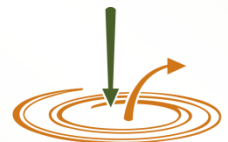
Facility Scenario:
Receives 24,000 CY of YT and 6,000 CY of VW annually
Sells 15,000 CY/year of compost

Activity	Annual Revenue (Cost)	Per CY of Feedstock	Per CY of Compost
Tip Fee	\$82,500	\$2.75	\$5.50
Receiving & Grinding	(\$75,000)	(\$2.50)	(\$5.00)
Windrow Construction	(\$10,000)	(\$0.33)	(\$0.67)
Active Composting	(\$33,000)	(\$1.10)	(\$2.20)
Curing	(\$5,000)	(\$0.17)	(\$0.33)
Screening	(\$35,000)	(\$1.17)	(\$2.33)
Compost Sale Revenue	\$90,000	\$3.00	\$6.00
Net Revenue (Cost)	\$14,500	\$0.48	\$0.97



Composting Facility Pro-Forma

- Pro-Forma:
 - Estimates revenue and expenses based on anticipated feedstocks, capital costs, operating costs, and revenue
 - Projects future cash flow
 - Assesses business viability, e.g. profit, return on investment, and net present value
 - Allows one to conduct sensitivity (“what if”) analyses based on differing assumptions, e.g. throughput, tip fees, compost sales, fuel cost, etc.



Components of Pro-Forma

- Assumptions:
 - Financial, materials flow, technology, equipment & labor inputs, capital & operating unit costs, growth factors
- Capital Cost Estimate:
 - Site development, structures, equipment, engineering, permitting & contingency
- Annual Cost Estimate:
 - Labor, O&M, cost of capital, taxes, etc.
- Annual Revenue Estimate:
 - Tip fees, compost sales, grants
- Financial Analysis
 - Projected cash flow, net income, net present value, rate of return, return on investment, etc.

