

US EPA ARCHIVE DOCUMENT

CO-DIGESTION ECONOMIC ANALYSIS TOOL (CoEAT)

INFORMATION CHECKLIST



The Co-Digestion Economic Analysis Tool (CoEAT) assesses the **initial** economic feasibility assessment of food waste co-digestion at wastewater treatment plants for the purpose of biogas production.

In order to optimize the accuracy of CoEAT, community-specific information should be used. *This checklist includes the information you need to complete your analysis.* All information provided in this checklist (except those marked "Optional") is required. When available, a default is indicated. For best results, some research may be needed.

Note: Corresponding cell numbers (in the User Inputs page) from the tool are indicated in the right-most column.

FOOD WASTE FEEDSTOCK ESTIMATE

-- Estimates quantity of household and non-household food waste and fats, oils, and grease (FOG) available in the service area --

Population of Service Area	Only if sourcing residential waste Note: Do not need if you performed a custom feedstock audit	[people]	Cell E31
Quantity of Non-Household Fats, Oils, and Grease (FOG) Available for Biogas Production	Only if sourcing non-household FOG Note: Do not need if you performed a custom feedstock audit	[tons/day]	Cell E34
Number of Food Waste Generators in Service Area (OPTIONAL)	Note: Do not need if you performed a custom feedstock audit Determine the number of each type of facility in your community:		
	<i>Manufacturers/Processors</i>	[# of facilities]	Cell J63
	<i>Wholesalers/Distributors</i>	[# of facilities]	Cell J64
	<i>Hospitals</i>	[# of facilities]	Cell J65
	<i>Nursing Homes and Related</i>	[# of facilities]	Cell J66
	<i>Colleges and Universities</i>	[# of facilities]	Cell J67
	<i>Schools (K-12)</i>	[# of facilities]	Cell J 68
	<i>Correctional Institutions</i>	[# of facilities]	Cell J69
	<i>Resorts/Conference Facilities</i>	[# of facilities]	Cell J70
	<i>Supermarkets</i>	[# of facilities]	Cell J72
	<i>Grocery Stores</i>	[# of facilities]	Cell J73
	<i>Restaurants</i>	[# of facilities]	Cell J74
Custom Feedstock Audit (OPTIONAL)	Use if the amount of feedstock to be co-digested is known. Note: If you have more specific feedstock data, enter data into Worksheet 1 – Feedstock Parameters, cells C28-C39.	[tons/day]	Cell G81
Potential Contamination Rate (OPTIONAL)	What percentage of contamination do you expect? Contamination often ranges from 5-20%.	[%]	Cell E89

EXISTING ANAEROBIC DIGESTERS

-- Calculates existing excess capacity --

Existing Digesters	Do you have existing digesters? If yes, complete information below. Note: Contact your local wastewater treatment plant for this information.		
	<i>Size- Diameter</i>	[ft]	Cell E107
	<i>Size - Height</i>	[ft]	Cell G107
	<i>Effective Operating Capacity</i>	[%]	Cell J107

	<i>Number of Digesters</i>	[# of digesters]	Cell L107
	<i>Amount of Wastewater Treated Per Day</i>	[million gallons/day]	Cell E110
AVOIDED GHG EMISSIONS AT THE LANDFILL -- Calculates avoided methane emissions from landfills due to organic waste diversion --			
Methane Emissions Reductions	Does your food waste currently go to a landfill?	[Y or N]	Cell E114
	Is there a landfill gas collection system in place? If yes, is landfill gas flared or used for energy?	[Y or N]	Row 120
FEEDSTOCK COLLECTION & MANAGEMENT COSTS -- Calculates costs and revenues associated with disposal, access, collection, processing, labor, and transportation of food waste and biosolids --			
Collection Bins for Residences	Do you need to provide collection bins to residences? If yes, complete information below.	[Y or N]	Cell E133
	<i>Cost per Bin for Each Household</i>	[\$/bin]	Cell G133
Collection Bins for Non-Household Generators of Food Waste	Do you need to provide collection bins to non-household generators of food waste? If yes, complete information below.	[Y or N]	Cell E139
	<i>Total Cost of Supplying Bins to Commercial Establishments</i>	[\$]	Cell G139
Collection Vehicles	Do you need to purchase any collection vehicles for this program? If yes, complete information below.	[Y or N]	
	<i>Total Capital Cost of Feedstock Collection Vehicles</i>	[\$]	Cell E146
	How many tons does your typical food waste collection vehicle hold?	[tons/truck]	Cell E150
Tipping Fees & Access Costs	Current landfill tipping fee	[\$/ton]	Cell E154
	Proposed tipping fee at digester	[\$/ton]	Cell E157
	Feedstock Access Costs (Cost of obtaining food waste) – may not be applicable	[\$/ton]	Cell E173
Transportation	Average number of miles for each truck to complete food waste pickup and delivery to digester (round trip)	[miles/roundtrip]	Cell E160
	Average number of miles to dispose or land apply biosolids (round trip)	[miles/roundtrip]	Cell E163
Feedstock Pre-Processing Costs	Cost of pre-processing food waste prior to addition to digester. Note: Can include grinding and contaminant removal.	[\$/ton]	Cell E176
Labor	Average labor cost in your area	[\$/hr]	Cell E184
	Number of personnel needed	[# of personnel]	Cell E187
	Consumer Price Index(CPI) in your area Note: Can be found at http://www.bls.gov/cpi/	[%]	Cell E190
DIGESTER COST -- Calculates cost of any additional digesters and operation and maintenance --			
Operational and Maintenance Costs of the Digester	This includes cleaning and repair of the digester.	[\$/yr]	Cell E196
Digester Cost (Choose 1 of Two Options in Calculating Cost)	Option 1: Use cost estimation (either low or high) to estimate cost Note: Digester costs can vary widely depending on a variety of factors.		
	Option 2: Enter your own digester cost based on	[\$]	Cell G257

	research. Note: Digester costs can vary widely depending on a variety of factors.		
FINANCIAL DATA -- Calculates fixed and recurring costs as well as Net Present Value (NPV) --			
Guidelines for Evaluating Investments	Discount rate for investments	[%]	Cell E280
	Finance rate for investments	[%]	Cell E281
ENERGY COSTS -- Calculates potential energy offsets from biogas use --			
Current Electricity Costs	Price per kWh of electricity	[\$/kWh]	Cell E284
	Expected annual increase	[%]	Cell E285
Current Natural Gas Costs	Price per MMBtu of natural gas	[\$/MMBtu]	Cell E288
	Expected annual increase	[%]	Cell E289