

U.S. Department of Energy
45Z Emissions Value Request Process
OMB No. 1910-NEW
Approval Expires: XX/XX/XXXX

Department of Energy's Emissions Value Request Process

Privacy Act Notice

As part of the Inflation Reduction Act of 2022 (Public Law 117-169), Congress enacted section 45Z, creating a tax credit for clean fuel production. The amount of the credit is based on the lifecycle greenhouse gas emissions rate of the transportation fuel. The U.S. Department of the Treasury (Treasury) issued a notice of proposed rulemaking on how to claim the credit on **XX**, requiring transportation fuel producers that intend to claim the tax credit must obtain the emissions rate of the fuel from an emissions rate table published by Treasury, or by petitioning the Secretary of the Department of Energy (DOE) for an emissions rate (PER). For transportation fuel types and categories for which the table does not provide an emissions rate, producers may apply to the Department of Energy (DOE) for a PER. Transportation fuel producers may use this emissions value to file a petition with the DOE for a PER. The DOE's authority to collect information from transportation fuel producers to determine an emissions value arises under section 45Z.

Requests for an emissions value and related information are owned by the DOE. This information may be shared with or disclosed to various parties, including: (1) The DOE's employees and contractors for review and assessment of an emissions value by the DOE and updates to the 45ZCFR table; (2) Treasury and IRS personnel for tax administration. For a full accounting of routine uses of this information pertaining to the DOE's management of records for this program, see DOE SORN DOE Records for Research Projects, Science Education, and Related Activities, published in the Federal Register (January 9, 2009).

A transportation fuel producer whose transportation fuel type or category (i.e., primary fuel type) is not included in emissions rate table is not required to request an emissions value from the DOE if an emissions value is necessary for such producer to claim a section 45Z tax credit. Failure to provide information may delay or prevent review of a request for an emissions value. Providing false information may subject the provider to penalties.

Paperwork Reduction Act Burden Disclosure Statement

An agency may not conduct or sponsor, and persons are not required to respond to, a collection of information that is subject to the Paperwork Reduction Act unless the collection displays a valid OMB Control Number for this collection of information is 1910-NEW.

The time needed to complete and submit a request will vary depending on individual circumstances. **estimated average time is 40 hours**, including the time for reviewing instructions, gathering the necessary data needed, and submitting the request.

Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington, DC 20503.

Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Enterprise Information Management Office, IM-22, Information Collection Management Program (**OMB Control Number** 0470-0047), U.S. Department of Energy, 1000 Independence Ave., SW, Washington, DC 20585; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project (**OMB Control Number** 0704-0188), Washington, DC 20503.

and Internal Revenue Code is determined, in part, by the Department of the Treasury **XX, 2025**. Transportation air transportation fuel from the Treasury for a provisional published table does not have an emissions value. The Secretary of the Treasury is requesting an emissions

This information may be used by contractors for purposes of the E-GREET model; and (2) to collect and other information from DOE-82, Grant and Contract at 74 Fed. Reg. 994

any feedstock and pathway) is not in the DOE, but an effort to provide complete and accurate information is required to avoid false or misleading

a collection of information from DOE Control Number. The

circumstances. The gathering and entering the

of information, including

on information, including
prise Policy Development &
ontrol Number 1910-NEW),
and to the Office of
I Number 1910-NEW),

Contact information

DOE and supporting national laboratory contractors may need to follow up on this application. Please provide contact information of individuals that DOE or support

Name of Contact at Organization**Name of Organization****Email address of Contact at Organization****Telephone number of Contact**

Does this workbook contain confidential business information (CBI)? Please respond with Yes/No

tion with clarifying questions about the information provided. Within this section, ting lab staff could contact for more information as needed.

The following example is for illustrative purposes to inform applicants a

Example 1: Hydrogen Production via Steam Methane Reforming with CCS

Key

Fields marked in orange are areas for user entry.

Examples of content requested are depicted below in italicized text. Itali

All instructions are in bold text.

Provide a brief description below of the transportation fuel production f

Steam methane reforming with carbon capture and sequestration (CCS): Nat

Insert a process block diagram for the transportation fuel production fa

Please depict all major equipment or sets of equipment (i.e. "unit proces

Please label each piece of equipment or set of equipment with a distinct

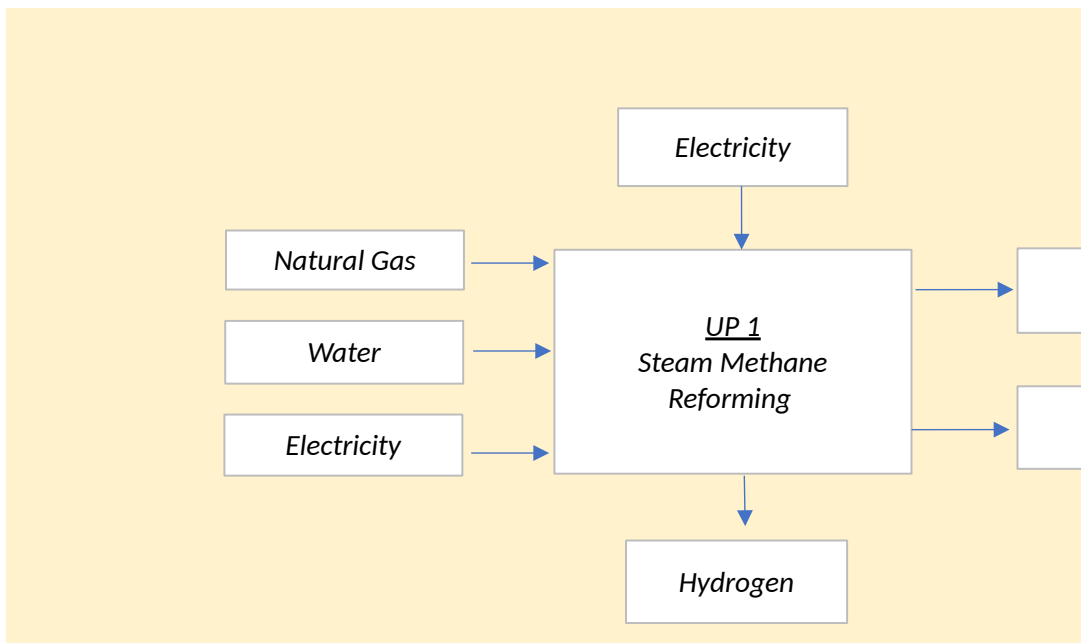


Table 1. Unit Process (UP) Mapping Table

Please itemize all UPs and all flows of raw or transformed feeds corresponding to a scenario where input/output values differ from t

UP Number	UP Name	Input Flows
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1	Steam Methane Reforming	Natural Gas
		Water
		Electricity
2	CO ₂ capture and compression for transportation for subsequent sequestration	Electricity
		Steam
		CO ₂

Table 2. Total Annual Consumption of Feedstock

Please list all feedstock expected to be used by the transportation fuel Alternate Scenario if desired. Feedstock refers to energy/materials that (e.g., natural gas, electricity) and/or require replenishment.

Feedstock Type	Annual Consumption-Expected Scenario	Annual Consumption-Alternate Scenario
Natural Gas	25,000,000	
Electricity	447,000	
Water	1,420	

Table 3A. Source of Electricity Verified

Please itemize the source and quantity of all electricity expected to be used by the transportation fuel Alternate Scenario if desired. Electricity source refers to the source of electricity (e.g., nuclear, wind, solar, natural gas with CCS) issued by the IRS or Treasury.

Annual Consumption-Expected Scenario (Megawatt-Hours Per Year)	Annual Consumption-Alternate Scenario (Megawatt-Hours Per Year)	Type of Power Generators (e.g. nuclear, wind, solar, natural gas with CCS)

N/A	N/A	N/A

Table 3B. Source of Electricity

Please list the quantity of electricity expected to be used in a year with production take place. Please use grid region of facility.

Annual Consumption- Expected Scenario (Megawatt-Hours Per Year)	Annual Consumption- Alternate Scenario (Megawatt-Hours Per Year)	Grid region of Facility, as defined in 45VH2- GREET
447,000		SERC

Table 4. Total Transportation Fuel

Please list the quantity of transportation fuel expected to be produced.

Product	Value Produced Per year- Expected Scenario	Value Produced Per year- Alternate Scenario
Hydrogen	175	

as to the type of information and degree of detail needed for an application

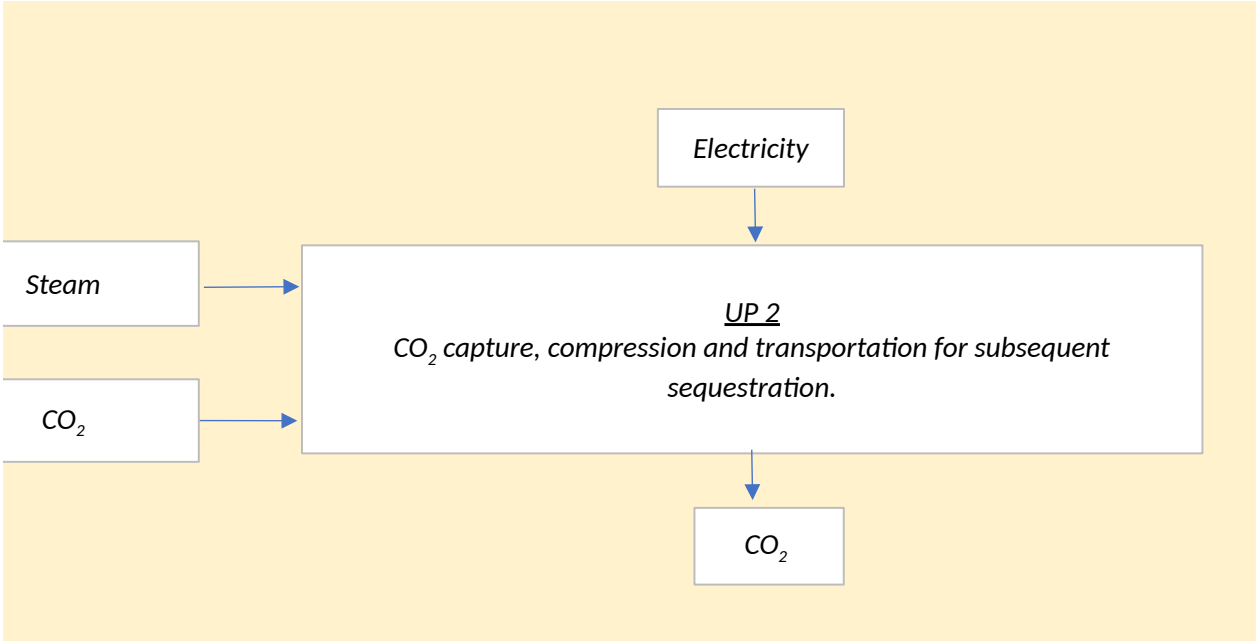
icized text is purely illustrative. Please insert any additional rows to tables below if

acility.

atural gas is reformed using steam to produce hydrogen with CO₂ capture for subsequent s

cility's pathway.

sses" (UPs)) that receive raw feedstock (e.g. methane) or transformed feedstock (e. t UP number. Please also depict all flows of raw or transformed feedstock in and ou



tock in and out of each UP. For each input/output flow please state the annual quar the expected values (i.e. Alternate Scenario). If values for the Alternate Scenario are Scenario and one corresponding to the Alternate Sc

Annual Values of Input Flows in Expected Scenario	Annual Values of Input Flows in Alternate Scenario	Units for Input Flows	Output Flows
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25,000,000		<i>mmBtu</i>	<i>Hydrogen</i>
1,420		<i>million gallons</i>	<i>CO₂</i>
152,000		<i>Megawatt-hour</i>	<i>Steam</i>
295,000		<i>Megawatt-hour</i>	<i>CO₂</i>
4,260,000		<i>mmbtu</i>	
1,650		<i>thousand tonnes</i>	

at Transportation Fuel Production Facility

production facility in a year for the Expected Scenario, and the are transformed by the facility (e.g. gasification of coal, use of ment at least once per year

Units for Annual Consumption
<i>MMBtu</i>
<i>Megawatt-hour</i>
<i>million gallons</i>

via Qualifying Energy Attribute Certificates (EACs)

used by the facility and verified via qualifying EACs consistent with any guidance Department with respect to section 45V.

Electricity Not Verified via EACs

Without qualifying EACs, and the corresponding grid region where consumption will be in regions defined within 45ZCF-GREET.

Fuel Generated by Production Facility

Produced in the Expected Scenario, and the Alternate Scenario if desired.

Units	Product Purity (mol. %)	Pressure (MPa)	List of impurities and amount of each impurity (mol %)
<i>thousand tonnes</i>	99	2	0.5% CH4, 0.5% N2

needed to completely itemize parameters requested.

sequestration

.g. syngas).
t of each UP.

ntity of flow expected in a year (i.e. for the "Expected Scenario"). If desired
e provided , DOE will develop two values of well-to-wheels emissions- one
enario.

Annual Values of Output Flows in Expected Scenario	Annual Values of Output Flows in Alternate Scenario	Units for Output Flows	Receiving UP Number
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175		<i>thousand tonnes</i>	<i>n/a</i>
1,650		<i>thousand tonnes</i>	2
4,260,000		<i>mmbtu</i>	2
70		<i>thousand tonnes</i>	<i>n/a</i>

l, please also provide values
corresponding to the Expected

Receiving UP Name	Optional Comments
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<i>CO₂ capture and compression for transportation for subsequent sequestration</i>	
<i>CO₂ capture and compression for transportation for subsequent sequestration</i>	
	<i>CO₂ output flow from UP2 refers to CO₂ that is not sequestered</i>

The following example is for illustrative purposes to inform applicants and

Example 2: Lignocellulosic Ethanol Production from Corn Stover

Key
Fields marked in orange are areas for user entry.
Examples of content requested are depicted below in italicized text. Italics are not required.
All instructions are in bold text.

Provide a brief description below of the transportation fuel production facility.
Lignocellulosic ethanol production via dilute acid pretreatment of corn stover,

Insert a process block diagram for the transportation fuel production facility.
Please depict all major equipment or sets of equipment (i.e. "unit processes") in the production process.
Please label each piece of equipment or set of equipment with a distinctive name and number.

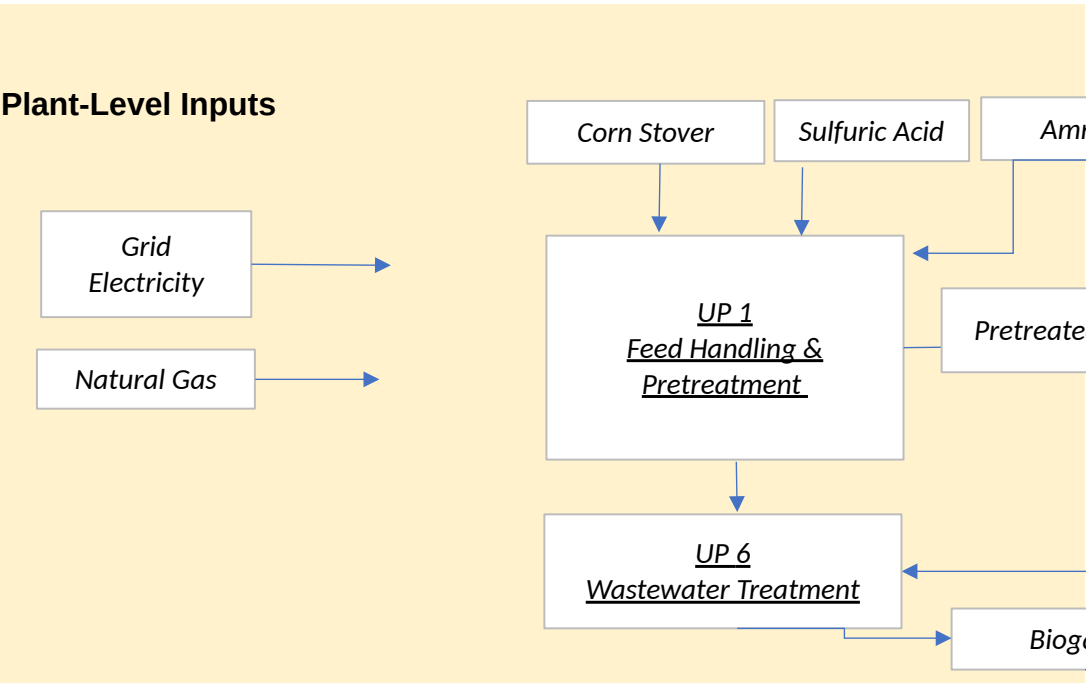


Table 1. Unit Process (UP) Mapping Table
Please itemize all UPs and all flows of raw or transformed feedstock in the production process to a scenario where input/output values differ from the expected values.

UP Number	UP Name	Input Flows
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1	Feed Handling & Pretreatment	Corn Stover
1	Feed Handling & Pretreatment	Sulfuric Acid
1	Feed Handling & Pretreatment	Ammonia
N/A	Plant-Level Inputs	Natural Gas
N/A	Plant-Level Inputs	Grid Electricity
6	Wastewater Treatment	Wastewater
4	Burner/Boiler & Turbogenerator	Solids
5	Ethanol Storage	Ethanol

Table 2. Total Annual Consumption of Feedstock

Please list all feedstock expected to be used by the transportation fuel Alternate Scenario if desired. Feedstock refers to energy/materials that (e.g., natural gas, electricity) and/or require replenishment.

Feedstock Type	Annual Consumption-Expected Scenario	Annual Consumption-Alternate Scenario
Natural Gas	-	
Electricity	-	
Corn Stover	322,154	

Table 3A. Source of Electricity Verified

Please itemize the source and quantity of all electricity expected to be generated by the Alternate Scenario and issued by the IRS or Treasury.

Annual Consumption-Expected Scenario (Megawatt-Hours Per Year)	Annual Consumption-Alternate Scenario (Megawatt-Hours Per Year)	Type of Power Generators (e.g. nuclear, wind, solar, natural gas with CCS)
97,500		Biomass/biogas-fired BTM power

N/A	N/A	N/A

Table 3B. Source of

Please list the quantity of electricity expected to be used in a year with place. Please use grid r

Annual Consumption- Expected Scenario (Megawatt-Hours Per Year)	Annual Consumption- Alternate Scenario (Megawatt-Hours Per Year)	Grid region of Facility, as defined in 45ZCF- GREET
-		SERC

Table 4. Total Transportatic

Please list the quantity of transportation fuel expected to be

Product	Value Produced Per year- Expected Scenario	Value Produced Per year- Alternate Scenario
<i>Ethanol</i>	25	

as to the type of information and degree of detail needed for an application

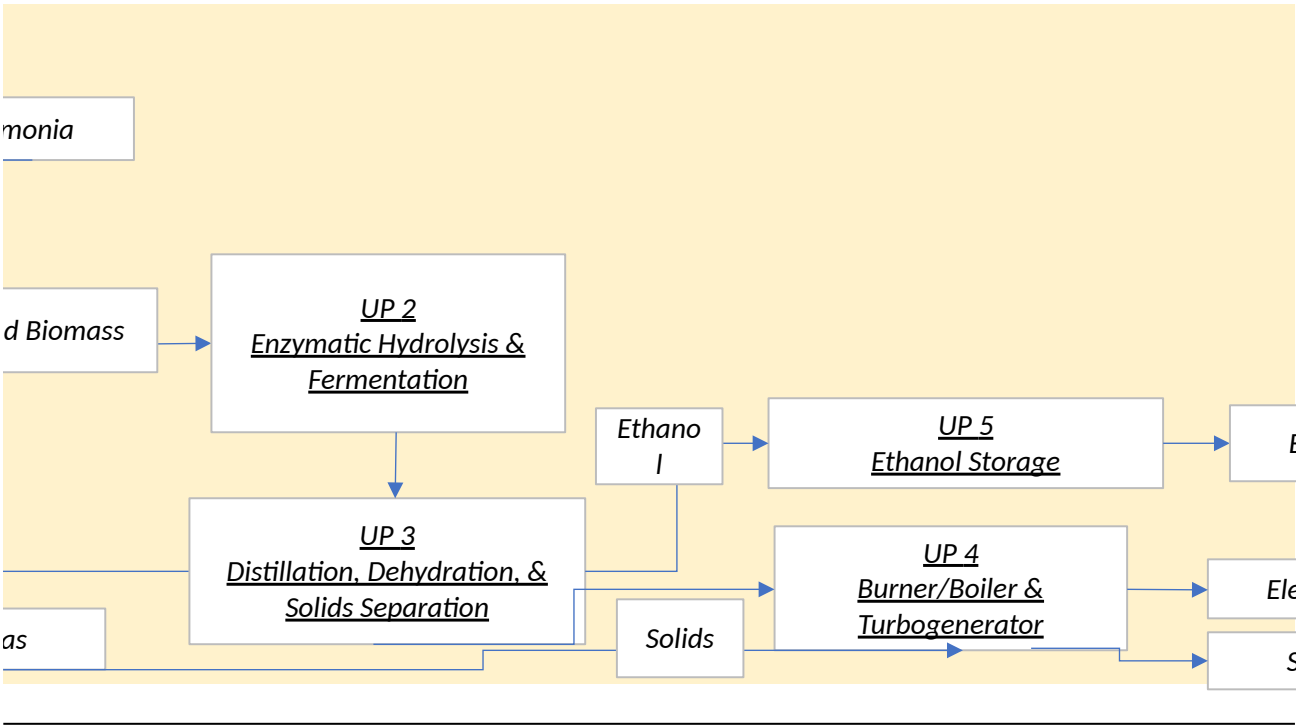
icized text is purely illustrative. Please insert any additional rows to tables below if ne

acility.

enzymatic hydrolysis, and fermentation: Corn stover is pretreated and deconstructed to sug

cility's pathway.

sses" (UPs)) that receive raw feedstock (e.g. methane) or transformed feedstock (e.g. t UP number. Please also depict all flows of raw or transformed feedstock in and out c



and out of each UP. For each input/output flow please state the annual quantity of fl
lues (i.e. Alternate Scenario). If values for the Alternate Scenario are provided, DOE w
corresponding to the Alternate Scenario.

Annual Values of Input Flows in Expected Scenario	Annual Values of Input Flows in Alternate Scenario	Units for Input Flows	Output Flows
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322,154		<i>metric tons at 12% moisture content</i>	<i>Pretreated Biomass</i>
7,621		<i>metric tons</i>	<i>Wastewater</i>
1,180		<i>metric tons</i>	<i>Wastewater</i>
-		<i>MMBtu</i>	<i>CO2</i>
-		<i>MWh</i>	<i>N/A</i>
567		<i>million gallons</i>	<i>Biogas</i>
113,398		<i>metric tons</i>	<i>Electricity</i>
25		<i>million gallons</i>	<i>Ethanol</i>

at Transportation Fuel Production Facility

production facility in a year for the Expected Scenario, and the are transformed by the facility (e.g. gasification of coal, use of ment at least once per year

Units for Annual Consumption
<i>MMBtu</i>
<i>MWh</i>
<i>metric tons</i>

l via Qualifying Energy Attribute Certificates (EACs)

used by the facility and verified via qualifying EACs consistent with any guidance / Department with respect to section 45V.

Electricity Not Verified via EACs

out qualifying EACs, and the corresponding grid region where consumption will take regions defined within 45ZCF-GREET.

on Fuel Generated by Production Facility

produced in the Expected Scenario, and the Alternate Scenario if desired.

Units	Product Purity Prior to Denaturing (weight %)
<i>million gallons</i>	98

needed to completely itemize parameters requested.

gar monomers, which are fermented to ethanol

syngas).
of each UP.

Ethanol

electricity

steam

now expected in a year (i.e. for the "Expected Scenario"). If desired, please also provide information on how you will develop two values of well-to-wheels emissions- one corresponding to the "Expected Scenario" and one corresponding to the "Alternative Scenario".

Annual Values of Output Flows in Expected Scenario	Annual Values of Output Flows in Alternate Scenario	Units for Output Flows	Receiving UP Number
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DRAFT

322,154		<i>metric tons</i>	2
7,621		<i>metric tons</i>	6
1,180		<i>thousand tonnes</i>	6
		<i>metric tons</i>	N/A
			N/A
1,092,000		<i>MMBtu</i>	4
97,500		<i>MWh</i>	N/A
25		<i>million gallons</i>	N/A

**also provide values corresponding
the Expected Scenario and one**

Receiving UP Name	Optional Comments
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<i>Enzymatic hydrolysis & fermentation</i>	
<i>Wastewater treatment</i>	
<i>Wastewater treatment</i>	
<i>N/A</i>	
<i>N/A</i>	
<i>Burner/Boiler & Turbogenerator</i>	
<i>N/A</i>	<i>BTM electricity used entirely on-site</i>
<i>Final sale (prior to denaturing)</i>	