Quick PEP Summary Report

Report Type: Energy Analysis

Case Information

Case Case1

Industry Wood Products, Pulp and Paper

Contact

Purchased Energy Summary

Energy Source	kWh	MMBtu	Equivalent MMBtu	Cost/Equivalent MMBtu	Total Annual Cost
Electricity	250,000,052		853,036	$12.895	$11,000,000
Fuel		25,000	25,000	$10.000	$250,000
Steam		0	0		$0
Total	250,000,052	25,000	878,036		$11,250,000

Unit of Production Information

Total Annual Production: 39,600 Tons of Pulp				
Energy Source	Annual Use	Energy Use/Tons	Equivalent Energy Use/Tons (MMBtu/Tons)	Cost/Tons
Electricity, kWh	250,000,052.32	6,313.133	21.541	$277.778
Fuel/Steam, MMBtu	25,000.00	0.631	0.631	$6.313
		Totals:	22.173	$284.091

Energy Savings Potential

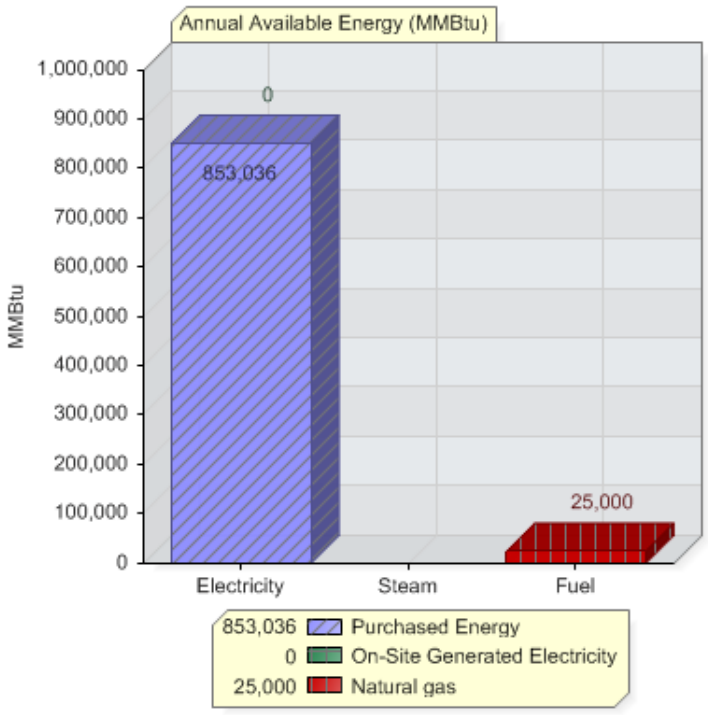
Energy Source	Total Energy Savings Potential	Energy Savings/Tons	Total Cost Savings	Cost Savings/Tons
Electricity, kWh	22,947,467.13	579.481	$1,009,800	$25.500
Fuel/Steam, MMBtu	2,400.00	0.061	$23,900	$0.604
Totals: (Equivalent Savings in MMBtu)	80,700.00 Equivalent MMBtu	2.038 Equivalent MMBtu	$1,033,700	$26.104

Please refer to the Energy Intensity Spreadsheet for details on Mutiple Units of Production and/or Energy Intensity for this plant.

Annual Available Energy

The following chart and data table summarize the average annual energy that is available to your plant's systems. This includes purchased energy and energy that is generated on site.

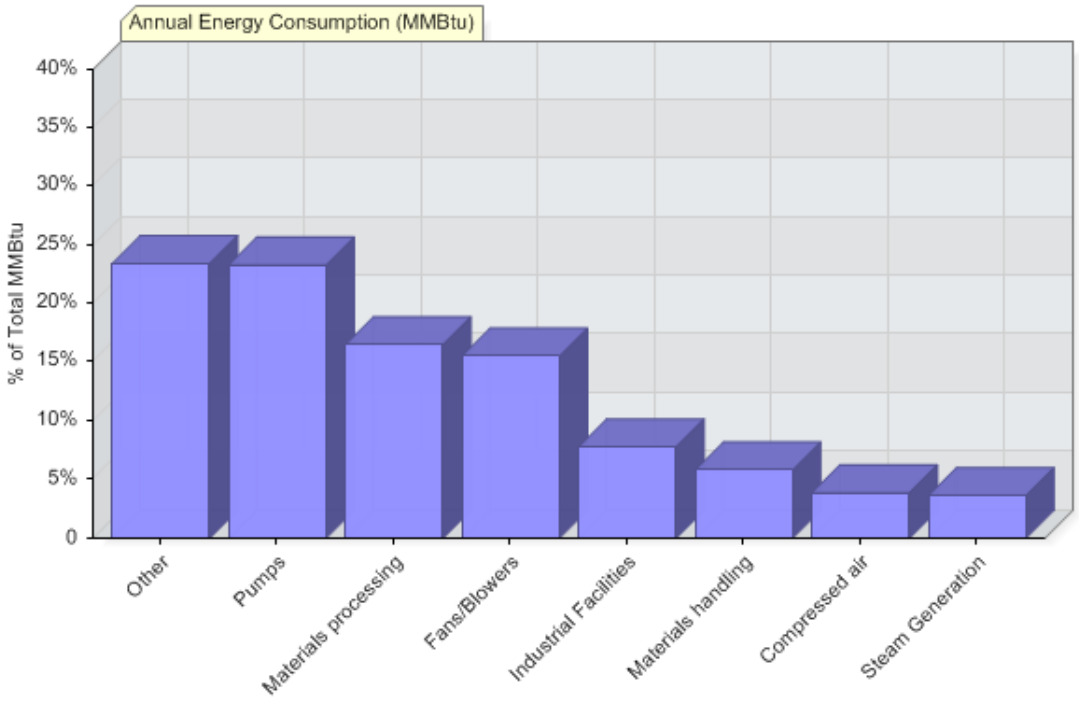
Energy Type	Energy (kWh)	Energy (MMBtu)	Cost/Value	$/MMBtu	$/kWh
Electricity	250,000,052	853,036	$11,000,000	$12.895	$0.044
Fuel/Steam		25,000	$250,000	$10.000	



Annual Energy Consumption

The following chart and data table summarize your plant's average annual energy consumption by plant system.

System	Annual Energy Consumption (kWh)	Annual Energy Consumption (MMBtu)	Annual Cost
Other	60,366,351	205,979	$2,652,500
Pumps	60,000,013	204,729	$2,640,000
Materials processing	42,500,009	145,016	$1,870,000
Fans and Blowers	40,000,008	136,486	$1,760,000
Industrial Facilities: (Lighting, HVAC, and Facility Support)	20,073,272	68,493	$882,500
Materials handling	15,000,003	51,182	$660,000
Compressed air	10,000,002	34,121	$440,000
Steam Generation Equipment	9,387,171	32,030	$345,000
Total		878,036	$11,250,000

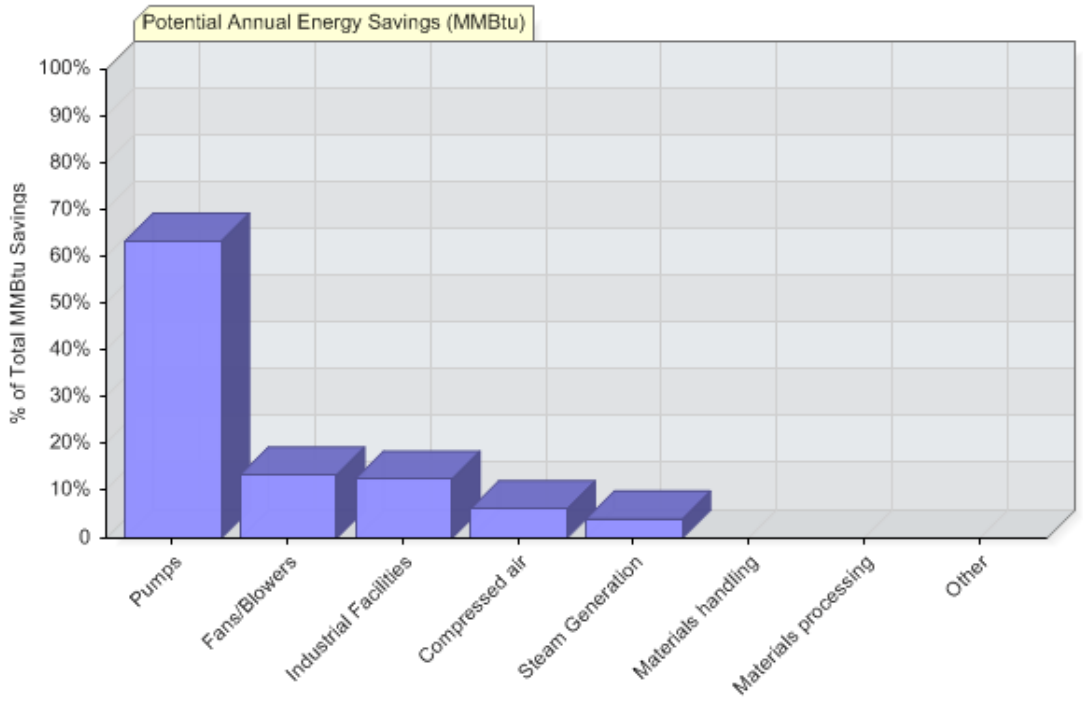


Potential Annual Energy Savings

The following chart and data table summarize your plant's potential annual energy energy savings by plant system.

NOTE: The energy and money savings listed below are only estimates based on the data you entered and U.S. national average savings for industrial plants with characteristics similar to your plant. Your actual savings will vary.

System	Potential Annual Energy Savings (kWh)	Potential Annual Energy Savings (MMBtu)	Potential Annual Cost Savings
Pumps	15,005,240	51,200	$660,000
Fans and Blowers	3,194,475	10,900	$140,800
Industrial Facilities: (Lighting, HVAC, and Facility Support)	2,989,325	10,200	$132,400
Compressed air	1,494,663	5,100	$66,000
Steam Generation Equipment	967,135	3,300	$34,500
Materials handling	0	0	$0
Materials processing	0	0	$0
Other	0	0	$0
Total		80,700	$1,033,700



Potential Annual CO_2 Emissions Savings

Based on the potential energy savings identified above, your plant may be able to reduce emissions of CO_2. The following potential annual CO_2 emission savings numbers are broad estimates based on industry averages and are not meant to reflect actual realized savings at your plant. Factors such as CHP system or steam generator efficiency and primary fuel source for energy use systems such as furnaces and boilers make a large difference in the actual amount of CO_2 emission saved. These numbers are presented as a broad estimate based on estimated savings and industry averages only.

NOTE: Actual CO_2 savings from fuel/steam energy savings are based on the primary fuel source. The exact breakdown of the individual primary fuels that are used at your plant for process heating, power generation and steam generation is beyond the scope of this tool. The table below shows a range of potential CO_2 savings from fuel/steam use in your plant. The low end of the range is based on the use of fuels that contain relatively low amounts of carbon such as natural gas. The high end of the range is based on fuels that have a high amount of carbon such as coal (anthracite, bituminous or lignite). Your actual CO_2 emission reduction will depend on the actual primary fuels that are used at your plant.

Potential Annual CO_2 Savings From Electricity	30,750,000 lbs.
Potential Annual CO_2 Savings From Fuel/Steam	281,000 - 546,000 lbs.

Suggested Next Steps

Plants with characteristics similar to your plant have found that following these types of next steps can help them save money and energy.

1. General Energy Next Steps
    - Promote use of life cycle cost analysis to evaluate economics of energy efficient equipment or system for all purchases that consume significant amount of energy.

2. Pumps - (Potential Annual Savings = $660,000) *
    - Turn pumps ON and OFF to match needs
    - Explore the potential for using a fixed speed pump to supply base load and a smaller, properly sized fixed speed pump for trim
    - Evaluate the use of adjustable speed drives on pumps that have variable flow and are being throttled
    - Use the DOE PSAT software tool & other resources to identify and quantify energy saving opportunities Learn More
    - Perform a detailed Pumping System Assessment at your site

3. Fans and Blowers - (Potential Annual Savings = $140,800) *
    - Minimize leakage and perform tightness tests, if needed
    - Improve O&M practices such as belt tightening, cleaning fans and changing filters regularly
    - Replace dampers, variable inlet vanes with electronic variable speed drives for meeting variable loads
    - Evaluate and reduce "system effect" through better inlet and outlet designs and duct sizing
    - Use the DOE FSAT software tool & other resources to identify and quantify energy saving opportunities Learn More
    - Perform a detailed Fan and Blower System Assessment at your site

4. Industrial Facilities: (Lighting, HVAC, and Facility Support) - (Potential Annual Savings = $132,400) *
    - Shut-off steam / chilled water flows to air handlers that are not needed or are out of service
    - Implement night setback and weekend/vacation temperature / ventilation controls
    - Install occupancy sensors
    - Evaluate lighting upgrades that includes implementing group relamp & maintenance programs
    - Perform a detailed Lighting & HVAC System Assessment at your site to identify and quantify energy saving opportunities

5. Compressed air - (Potential Annual Savings = $66,000) *
    - Reduce compressor operating pressure with or without controls
    - Eliminate inappropriate uses of compressed air
    - Implement air leak management program
    - Use the DOE AirMaster+ software tool & other resources to identify and quantify energy saving opportunities Learn More
    - Perform a detailed Compressed Air System Assessment at your site Learn More

6. Steam Generation Equipment - (Potential Annual Savings = $34,500) *
    - Perform a detailed Steam Energy System Assessment at your site Learn More
    - Improve thermal insulation of the overall steam system
    - Improve condensate recovery
    - Implement a BestPractices based steam trap maintenance program Learn More
    - Implement a BestPractices based leak management program Learn More
    - Improve boiler efficiency by proper blowdown management
    - Improve boiler efficiency by proper air/fuel control
    - Use the DOE Steam BestPractices Tools to identify and quantify energy saving opportunities Learn More

* - High Energy/Cost Savings Opportunity