

# Energy Self Assessment

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## Step 3: Analysis

If you provided "Production and Energy Use" data, the table "Summary of Your Current Operation" is a comparison of your dryer to typical efficiencies recorded in university studies of grain dryers. The efficiency of grain dryers is reported as Btu per pound of water evaporated from the grain. The estimated baseline energy use and cost to dry the grain in an average year is listed in the lower part of the first table along with the total energy use in British Thermal Units (Btu's) and the estimated carbon dioxide (CO<sub>2</sub>) emissions from combusting fuels to produce electricity and heat for drying.

The second table, "Energy and Cost Comparison Summary", summarizes the energy and cost savings of all dryer types known to be commercially available in North America. If the value in this table is positive, then using that dryer type with **all** energy efficiency options would be expected to result in lower energy costs. If the value is negative, then the dryer type is expected to use more energy than the dryer you've selected. [Click here](#) for a bar graph that illustrates a general comparison of all the dryer types without optional heat recovery or energy saving cooling processes.

Click on the dryer type in the summary table to display a detailed summary for each dryer. Each summary includes estimated differences in fuel consumption and the cost savings from the dryer options such as in-bin cooling, dryeration, heat recovery and stirring devices, if applicable. At the bottom of the table is the expected increase or decrease in carbon dioxide emissions, the principle greenhouse gas causing global warming.

<b>Summary of Your Current Operation</b>	Your dryer is less efficient than a typical dryer of the same type	
<b>Dryer type Selected</b>	<a href="#">Continuous Flow In-Bin Dryer</a>	
<b>Estimated efficiency of your dryer</b>	16,914	Btu/#H2O
<b>Typical efficiency for dryer type selected</b>	2,000	Btu/#H2O
<b>Energy Type</b>	<b>Estimated Baseline energy usage</b>	
<b>Energy Use Based on Drying</b>	50,000	bushels of corn
<b>Water Removed</b>	69,000	pounds
<b>Propane</b>	12,500	Gallons
<b>Electricity</b>	6,839	kWh
<b>Average Annual Drying Cost</b>	\$15,821	\$
<b>Total Energy Use</b>	1,167,091,837	Btu
<b>Greenhouse Gas Emissions</b>	169,628	lbs. / yr.

### Energy and Cost Comparison Summary

For each dryer listed below, the savings indicated is for the dryer type configured with best possible energy efficiency measures.

Click on Dryer Name (below **Dryer Type**) for more detailed analysis.

Dryer Type	Potential Cost Savings	Potential Energy Savings (Btu)
<a href="#">Natural-Air Bin Dryer with stirring device</a>	\$12,909	1,084,291,837
<a href="#">Low-Temperature Bin Dryer with stirring device</a>	\$12,618	1,076,011,837
<a href="#">High Temperature Batch Bin Dryer with stirring device</a>	\$14,116	1,041,339,337
<a href="#">Roof Batch Dryer with aeration</a>	\$13,716	1,011,841,837
<a href="#">Continuous Cross-Flow Dryer with dryeration (full heat mode)</a>	\$13,856	1,022,191,837
<a href="#">Cross-Flow Batch Dryer with dryeration</a>	\$13,987	1,031,851,837
<a href="#">Mix-flow dryer with dryeration (full heat mode)</a>	\$14,383	1,061,004,337
<a href="#">Continuous-Flow In-Bin Dryer with dryeration</a>	\$15,532	1,145,801,020
<a href="#">Combination High/Low Temperature Drying</a>	\$14,278	1,084,291,837

[How can a dryer use more energy but save money?](#)

[What does a negative number mean?](#)

<a href="#">Natural-Air Bin Dryer</a>		
<b>Annual Energy Cost Savings</b>		
Propane	12,500	Gallons
Electricity	-23,486	kWh
Energy Savings - Dryer Only	1,063,591,837	Btu
Percentage of Energy Savings	91%	%
Annual Potential Cost Savings	\$12,182	\$
<b>Optional Equipment/Process</b>		
<a href="#">With Stirring Device</a>	20,700,000	Btu
Cost Savings for Optional Equipment/Process	\$728	\$
<b>Energy Savings</b>		
Max. Total Energy Savings	1,084,291,837	Btu
Percentage of Energy Savings	93%	%

<b>Total Estimated Cost Savings</b>	\$12,909	\$
<b><u>Greenhouse Gas Emissions Reduction</u></b>		
<b>Carbon Dioxide - Dryer Only</b>	119,733	lbs.
<b>Carbon Dioxide w/Energy Saving Options</b>	129,712	lbs.
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<b><u>Low-Temperature Bin Dryer</u></b>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	12,500	Gallons
<b>Electricity</b>	-26,519	kWh
<b>Energy Savings - Dryer Only</b>	1,053,241,837	Btu
<b>Percentage of Energy Savings</b>	90%	%
<b>Annual Potential Cost Savings</b>	\$11,818	\$
<b>Optional Equipment/Process</b>		
<b><u>With Stirring Device</u></b>	22,770,000	Btu
<b>Cost Savings for Optional Equipment/Process</b>	\$801	\$
<b>Energy Savings</b>		
<b>Max. Total Energy Savings</b>	1,076,011,837	Btu
<b>Percentage of Energy Savings</b>	92%	%
<b>Total Estimated Cost Savings</b>	\$12,618	\$
<b><u>Greenhouse Gas Emissions Reduction</u></b>		
<b>Carbon Dioxide - Dryer Only</b>	114,743	lbs.
<b>Carbon Dioxide - Dryer w/Energy Saving Options</b>	125,720	lbs.
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<b><u>High Temperature Batch Bin Dryer</u></b>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	10,704	Gallons
<b>Electricity</b>	5,857	kWh
<b>Energy Savings - Dryer Only</b>	999,421,837	Btu
<b>Percentage of Energy Savings</b>	86%	%
<b>Annual Potential Cost Savings</b>	\$13,548	\$
<b>Optional Equipment/Process</b>		
<b><u>With Stirring Device (Bin Dryer)</u></b>	41,917,500	Btu
<b>Cost Savings for Optional Equipment/Process</b>	\$568	\$
<b>Energy Savings</b>		
<b>Max Estimated Energy Savings</b>	1,041,339,337	Btu
<b>Max Percentage of Energy Savings</b>	89%	%

<b>Total Estimated Cost Savings</b>	\$14,116	\$
<b><u>Greenhouse Gas Emissions Reduction</u></b>		
<b>Carbon Dioxide - Dryer Only</b>	145,258	lbs.
<b>Carbon Dioxide - Dryer w/Energy Saving Options</b>	151,350	lbs.
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<b><u>Combination High/Low Temperature Drying</u></b>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	11,821	Gallons
<b>Electricity</b>	774	kWh
<b>Energy Savings - Dryer Only</b>	1,084,291,837	Btu
<b>Percentage of Energy Savings</b>	93%	%
<b>Annual Potential Cost Savings</b>	\$14,278	\$
<b><u>Greenhouse Gas Emissions Reduction</u></b>		
<b>Carbon Dioxide - Dryer Only</b>	151,050	lbs.
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<b><u>Roof Batch Dryer</u></b>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	10,837	Gallons
<b>Electricity</b>	5,929	kWh
<b>Energy Savings - Dryer Only</b>	1,011,841,837	Btu
<b>Percentage of Energy Savings</b>	87%	%
<b>Annual Potential Cost Savings</b>	\$13,716	\$
<b><u>Greenhouse Gas Emissions Reduction</u></b>		
<b>Carbon Dioxide - Dryer Only</b>	147,063	lbs.
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<b><u>Continuous Cross-Flow Dryer</u></b>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	10,431	Gallons
<b>Electricity</b>	5,707	kWh
<b>Energy Savings - Dryer Only</b>	973,891,837	Btu
<b>Percentage of Energy Savings</b>	83%	%
<b>Annual Potential Cost Savings</b>	\$13,202	\$
<b>Optional Equipment/Process</b>		
<b><u>With In-bin cooling (Full heat dryer)</u></b>	28,980,000	Btu
<b><u>With Dryeration (Full heat dryer)</u></b>	48,300,000	Btu

<a href="#">With Heat Recovery (Heat/Cool dryer)</a>	28,980,000	Btu
<b>Cost Savings for Optional Equipment/Process</b>	\$655	\$
<b>Energy Savings</b>		
<b>Total Energy Saved</b>	1,022,191,837	Btu
<b>Percentage of Energy Savings</b>	88%	%
<b>Total Estimated Cost Savings</b>	\$13,856	\$
<a href="#">Greenhouse Gas Emissions Reduction</a>		
<b>Carbon Dioxide - Dryer Only</b>	141,547	lbs.
<b>Carbon Dioxide - Dryer w/Energy Saving Options</b>	148,568	lbs.
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<a href="#">Cross-Flow Batch Dryer</a>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	10,689	Gallons
<b>Electricity</b>	5,848	kWh
<b>Energy Savings - Dryer Only</b>	998,041,837	Btu
<b>Percentage of Energy Savings</b>	86%	%
<b>Annual Potential Cost Savings</b>	\$13,529	\$
<b>Optional Equipment/Process</b>		
<a href="#">With In-bin cooling (Full heat dryer)</a>	16,905,000	Btu
<a href="#">With Dryeration (Full heat dryer)</a>	33,810,000	Btu
<b>Cost Savings for Optional Equipment/Process</b>	\$458	\$
<b>Energy Savings</b>		
<b>Total Energy Saved</b>	1,031,851,837	Btu
<b>Percentage of Energy Savings</b>	88%	%
<b>Total Estimated Cost Savings</b>	\$13,987	\$
<a href="#">Greenhouse Gas Emissions Reduction</a>		
<b>Carbon Dioxide - Dryer Only</b>	145,057	lbs.
<b>Carbon Dioxide - Dryer w/Energy Saving Options</b>	149,972	lbs.
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<a href="#">Mixed-flow dryer</a>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	10,985	Gallons
<b>Electricity</b>	6,010	kWh
<b>Energy Savings - Dryer Only</b>	1,025,641,837	Btu
<b>Percentage of Energy Savings</b>	88%	%
<b>Annual Potential Cost Savings</b>	\$13,903	\$

<b>Optional Equipment/Process</b>		
<a href="#">With In-bin cooling (Full heat dryer)</a>	21,217,500	Btu
<a href="#">With Dryeration (Full heat dryer)</a>	35,362,500	Btu
<b>Cost Savings for Optional Equipment/Process</b>	\$479	\$
<b>Energy Savings</b>		
<b>Total Energy Saved</b>	1,061,004,337	Btu
<b>Percentage of Energy Savings</b>	91%	%
<b>Total Estimated Cost Savings</b>	\$14,383	\$
<b>Greenhouse Gas Emissions Reduction</b>		
<b>Carbon Dioxide - Dryer Only</b>	149,069	lbs.
<b>Carbon Dioxide - Dryer w/Energy Saving Options</b>	154,209	lbs.
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<b><a href="#">Continuous-Flow In-Bin Dryer</a></b>		
<b>Annual Energy Cost Savings</b>		
<b>Propane</b>	11,022	Gallons
<b>Electricity</b>	6,030	kWh
<b>Energy Savings - Dryer Only</b>	1,029,091,837	Btu
<b>Percentage of Energy Savings</b>	88%	%
<b>Annual Potential Cost Savings</b>	\$13,950	\$
<b>Optional Equipment/Process</b>		
<a href="#">With Dryeration (Full heat dryer)</a>	116,709,184	Btu
<b>Cost Savings for Optional Equipment/Process</b>	\$1,582	\$
<b>Energy Savings</b>		
<b>Total Energy Saved</b>	1,145,801,020	Btu
<b>Percentage of Energy Savings</b>	98%	%
<b>Total Estimated Cost Savings</b>	\$15,532	\$
<b>Greenhouse Gas Emissions Reduction</b>		
<b>Carbon Dioxide - Dryer Only</b>	149,570	lbs.
<b>Carbon Dioxide - Dryer w/Energy Saving Options</b>	166,533	lbs.
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