



Understanding Iowa's Manufacturing/Processing Fuel Tax Exemption

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Note to Iowa Manufacturers

You may be overpaying hundreds, even thousands, of dollars on Iowa sales tax!

The Iowa Department of Revenue and Finance has recently adopted expanded definitions of processing activities that are now considered exempt from state sales taxation. These changes can mean big savings for most manufacturing processors. The effective date for these new exemptions was July 1, 1997.

Previously most manufacturers were allowed fuel tax exemptions only for the energy used to transform a raw material into a product. Now exempt energy use covers activities ranging from the receipt of the raw material to the handling of the finished product.

This booklet provides examples of how these rules apply to different manufacturing situations. If you have never applied for an exemption, it shows you how. If you have never attempted to document your electrical use, it provides you with appropriate examples and formulas.

If you want to insure that you are not being over-charged, here are some things you should do:

Calculate your fuel exemption using the new processing definitions. If you are a contract manufacturer this will be the first time you have documented your exempt use.

- **Take those exemptions back to the time they were enacted (you can recover up to three years prior to the current year).**
- **File a new tax exemption certificate and a refund claim.**

This booklet will show you how to determine your exempt electric use, describe the forms you will need to complete and where to file them.

A Brief History of the Fuel Sales Tax Exemption for Processing

The State of Iowa has had a sales tax exemption on processing fuel use since the 1950's. This exemption was established by the Iowa legislature, because it was deemed unfair to tax a processor for the value added to a raw material, when the retail purchaser of the product was also paying a sales tax.

In 1985, the definition of processing was expanded for manufacturers of food products. This was the first time fuel use exemptions held that the processing of food products did not cease once the food product was in marketable form. Energy used to maintain the integrity and quality of the product was now exempt, as was any energy used in handling and packaging inside the facility.

The definition of manufacturer changed after June 30, 1997 to include contract manufacturers and businesses that are engaged in quarrying and mining. The definition of processing also was expanded for all manufacturers to reflect the broader working definition previously only applied to food processors.

Table 1 shows how the definition of exempt processing activities has expanded. Now processing is considered to begin immediately after a raw material is removed from its natural setting. If you are accepting raw material for further processing, it begins the moment you accept it.

Table 1

Exempt Processing Activities (Except Food Processing) Before and After July 1, 1997	
Before July 1, 1997	On or After July 1, 1997
Transformation of Raw Material into Product	Transformation of Raw Into Product
	Receipt of Raw Material
	Maintaining a Product's Integrity
	Maintaining any Unique Environmental Conditions Required for the Process Machinery
	Quality Control
	Research and Development
	Recycling and Reprocessing Waste
	TD Pollution Control Equipment
	Storage Area
	Handling for Shipment

Note: You can recover overpayments back until the time of their enactment; in the case above, July 1, 1997. Other overpayments can be claimed up to three years prior to the current year.

Tax Exempt Energy Use Examples

We have identified 12 typical situations in which manufacturers can save money when they apply the manufacturing/process exemption for fuel use:

1. Processing After Severance of Raw Material
2. Receipt of Raw Material or Product
3. Transformation of Raw Material Into Value-Added Product
4. Maintaining a Products Integrity
5. Maintaining Any Unique Environmental Conditions Required For Processing Machinery
6. Process Lights
7. Quality Control
8. Research and Development
9. Recycling and Reprocessing Waste Products
10. Pollution Control
11. Packaging and Storing for Shipment
12. Handling for Shipment

1. Processing After Severance of Raw Material

Processing of raw material does not occur until immediately after it is removed from its natural setting. The act of severance is not exempt, but subsequent processing activities are exempt.

Example: A furniture manufacturer in Iowa owns a grove of walnut trees that it periodically harvests to replenish its walnut stock. Any electricity used to convey, store or saw the logs is exempt. Note: Energy used to cut down the trees is not exempt. Processing of the wood begins only after they have been severed from the ground and transformed into logs.

Example: A quarry crushes, washes, sizes and blends aggregate material. Any electricity used to process the aggregate is exempt. Note: Any electricity or other fuel used to remove the rock from the quarry walls is not exempt.

2. Receipt of Raw Material or Product

An Iowa manufacturer that receives a raw material or product for transformation, can begin processing the moment the material is transferred to their possession. This is also true for *contract manufacturers*.

Example: A resin manufacturer supplies boxes of plastic pellets to a plastics products manufacturer. The manufacturer signs for the material and begins to unload the tractor trailer with an electric forklift when it arrives at their loading dock. The energy used to unload the trailer is exempt. Any electric energy used to convey material and store it until it is transformed is exempt.

3. Transformation of Raw Material Into Value-Added Product

Any Iowa manufacturer that holds personal property for the purpose of adding value by any process of manufacturing, refining, purifying, combining different material, or by packing (such as meats) with an intent to sell at a gain or profit is exempt from sales tax on electricity purchased for this purpose. This is not true for companies that do construction contracting, remanufacturing or rebuilding of tangible personal property (such as automobile engines), farming, and restaurants. They are not considered manufacturing processors.

Example: The plastic bottle manufacturer has electric forklifts that move boxes from a storage area to each of the injection molding machines. A vacuum system extracts the pellets from the boxes and feeds it to the injection molder. The injection molder heats the pellets and injects the hot plastic into the mold cavity. The mold is then cooled and the product still attached to runners is ejected from the mold. The runners are removed then the product is ready for inspection, packaging and shipment. The raw plastic pellets are transformed into a product. All of the energy used to facilitate this transformation is exempt from sales tax.

4. Maintaining A Product's Integrity

The electrical energy used by an Iowa manufacturer to maintain the integrity of their product is exempt.

Example: A frozen food manufacturer must freeze their product and hold it until it can be delivered by common carrier. Freezing permits the product to retain its processed value and is considered an important step in the processing of the product. Therefore, it is an exempt activity.

5. Maintaining Any Unique Environmental Conditions Required for Processing

The electrical energy used to maintain environmental conditions required for a process is exempt.

Example: An injection mold machine has to be properly cooled to operate effectively. If it operates outside the temperature parameters, the thermoset product could be ruined. The energy used to cool the mold machine is thus exempt.

6. Process Lights

The electricity used in any lighting that is integral to processing or product integrity is exempt.

Example: A bottled water manufacturer uses an ultra-violet lighting system to destroy harmful bacteria in the water. Electrical energy is used to improve the value of the water being processed. Therefore the electricity consumed by the process lighting is exempt.

7. Quality Control

The electrical energy used to enable quality control of a process is exempt.

Example: A plastic bottle maker uses an optical scanner to test whether labels are properly affixed. If they are not, they are rejected. The energy used to convey the bottles, observe defects, remove rejects and send the bottles to further processing is exempt.

8. Research and Development

Electrical energy used to design, build and test new products or ways of processing are exempt to Iowa manufacturers.

Example: A customer has asked the above bottle maker to redesign their product to hold more volume. The design and development of this new bottle will require a change over of the molds and the conveyer lines, as well as modifications of the quality control point. All of the electrical energy directly and primarily used to develop this new product is exempt.

9. Recycling and Reprocessing Waste Products

The electric energy used by an Iowa manufacturer to recycle and reprocess its waste products is exempt. Electric energy used for compacting, baling, crushing, grinding, cutting or shearing wastes to be recycled or reprocessed and the energy required to move the waste would also be exempt.

Example: The scrap plastic bottles that are rejected are reground for reuse. The energy required to move the bottles and regrind them is exempt. Even if the company just ground the bottles for recycling by someone else, the energy used to grind it, package it and move it would still be exempt.

10. Pollution Control Equipment

Electricity used by pollution control equipment, whether directly used in any kind of processing or not, is exempt.

Example: A manufacturer of coated metal parts recovers the solvents from its painting operations with a steam condenser. The purchased energy used by the entire solvent recovery system is exempt.

11. Packaging and Storing for Shipment

Electricity used by packaging and/or bagging equipment--including conveying equipment--is exempt.

Example: A plastics manufacturer uses a mechanical sorter which places the part into plastic containers and then conveys the packaged parts to the storage area or directly to shipping. Any electricity used in packaging is exempt.

12. Handling for Shipment

Activities that use electricity during the handling of the product for shipment are exempt.

Example: A vegetable processor has already packaged the cans in cardboard boxes and placed the boxes on pallets in a storage area. The pallets are later moved from the shipping area by a forklift and then placed inside a common carrier's trailer. Any energy used in the movement of the product within the plant is exempt.

Non-Tax Exempt Energy Use Examples

Even if you are a manufacturer engaged in processing, there are some energy uses that are not viewed by the Iowa Department of Revenue and Finance as exempt. The following are not exempt uses of fuel:

1. Shipment In A Vehicle Subject To Registration
2. Cooling, Ventilation and Heating for Employee Comfort
3. Lighting for Employees
4. Machine Shop
5. Office, Security, Safety, and Communications, Etc.

1. Shipment in a Vehicle Subject to Registration

The fuel used in registered vehicles (or vehicles subject to registration) to ship raw material, semi-finished product or finished goods is not exempt.

Example: A canning company has a fleet of trucks to deliver their product. The energy used to move the can goods from their facility to any other facility via these vehicles is not exempt. This is true, even if they were just moving it across their own property.

2. Cooling, Ventilation and Heating for Employee Comfort

Any electricity used for employee comfort or safety is not exempt.

Example: The plastics manufacturer uses ventilating fans to vent the heat and gases from the injection mold machines to protect the workers from excessive heat and a build-up of VOC gases. Although this use of energy keeps the employees more comfortable and productive, it is not considered as a processing activity.

3. Lighting for Employees

Any electricity used for employee lighting or safety is not exempt.

4. Machine Shop

An in-house machine shop in which a company's production machinery is repaired or assembled is not exempt, so the electricity used in these areas are also not exempt.

Example: A metal stamping company makes the dies for its machinery in its machine shop. The electricity used to develop the dies is not exempt, because the dies are not for sale.

Questions and Answers About the Tax Exemption Certificate for Electrical Use

Question 1: How do I apply for an exemption?

Answer: As your electric cooperative, you can ask us to help you file for an exemption (See Appendix A). Twelve months of electric bills and an energy study will be needed to support your claim. We have copies of the required sales tax exemption certificate that will be filed with us. [You can also request a form from the Iowa Department of Revenue and Finance, P.O. Box 10457, Des Moines, 50306 or call them at 515-281-7591 or 515-281-3114].

Question 2: Do I need to file a certificate every year?

Answer: You must file a new certificate if your exempt use of electricity diminishes materially for any sustained period of time. It is to your advantage to file a new certificate if your exempt use of electricity increases for any sustained period of time. Otherwise, you must update it every three years.

Question 3: What if I have more than one meter?

Answer: You will need to fill out a form for each meter that registers exempt electrical use.

Question 4: Can we report the exempt Use of all fuels on one form?**Answer:** No. However, those fuels may also be exempt. You will need to file certificates with these suppliers to receive the exemption.

Question 5: How many years back can we go for an exempt sales tax refund?

Answer: You can recover up to three years previous to the current year. However, you can not make claims for recovery before the date of their enactment. You must fill out a Claim for Refund Form (See Appendix B) and file it with the Iowa Department of Revenue.

Question 6: What are we expected to document?

Answer: You will be asked to calculate and document the percentage of exempt consumption to your total consumption and attach it to your exemption certificate. As mentioned before, copies of invoices and a schedule of electricity used are part of the documentation. You are also expected to describe how the electricity is used in your manufacturing process and the products produced for sale from this process.

Question 7: How can we calculate electric use for unmetered equipment?**Answer:** It is usually the case that manufacturing equipment is not on separate meters, so some form of calculation has to be made. We can help you as your energy supplier or you may want an independent energy consultant to calculate usage. It is possible to secure the average kWh a processing machine uses per hour of operation from the manufacturer of the equipment. Sometimes this is listed on the equipment nameplate or the users manual. If it only lists the watts, divide the watts by 1,000 to obtain the approximate kWh rating. You then need to calculate the hours of use and multiply it times the rating to determine kWh usage for each piece of exempt equipment. For example, you have a computer numerical controlled (CNC) lathe that is rated at 1700 Watts and it was used an average of 173 hours a month. Its estimated usage of kWh per month would be:

$$(1700 \text{ Watts})/1000 \times 173 = 294.1 \text{ kWh per month}$$

Ordinarily you would use the previous 12 months as the basis for filing an exemption certificate. However, individual circumstances can dictate that the period be longer or shorter than 12 months.

Remember that you can also claim an exemption for up to five years previous, but you must apply the rules that were applicable during that time period when you file a refund claim. For example, prior to July 1, 1995, the fuel used for heating or cooling of a greenhouse used in the commercial production of

flowering, ornamental, or vegetable plants were not exempt. If you operate a commercial greenhouse, you are not eligible to receive an exemption prior to July 1, 1995. Another example would be a manufacturer who did both direct (non-contract) and contract manufacturing. A claim for the period prior to July 1, 1997 could only be based on direct processing activities, while the exemptions after July 1, 1997 would be much expanded to include their contract manufacturing activities as well as other activities now considered exempt under the new definition of processing. Table 2 provides typical and high-efficiency motor energy use to aid your calculations. Table 3 is an example of how you would use this information to complete the documentation of exempt and non-exempt electrical usage.

Table 2

kWh Per Hour of Use for Typical and High Efficiency Motors

Motor Size (in HP)	Typical Motor Single Phase	Typical Motor 3-Phase	High Efficiency Single Phase	High Efficiency 3-Phase
1/20	.11	-	-	-
1/12	.15	-	-	-
1/8	.23	-	-	-
1/6	.27	-	-	-
1/4	.38	-	-	-
1/3	.50	-	-	-
2	.60	-	-	-
3/4	.80	-	.68	-
1	1.0	1.0	.85	.85
1.5	1.5	1.5	1.27	1.2
2	2.0	1.9	1.70	1.7
3	3.0	2.8	2.55	2.4
5	5.0	4.6	4.25	4.2
7.5	7.5	6.7	6.37	6.3
10.0	10.0	8.8	8.50	8.4
15.0	15.0	13.0	12.75	12.4
20.0	20.0	17.0	17.00	16.5
25.0	25.0	21.2	21.25	20.4

Example

<u>1/4 HP motor used 4 hours/day</u>
<u>1/4 HP motor uses .38 kWh/ hour</u>
<u>0.38 kWh/hr H 4 hr/day H 200days/yr = 304 kWh/yr</u>

Table 3

Sales Tax Exemption Percentage Calculation Documentation

Exempt Equipment/Activity	Rating (kWh)	Hours Usage of Use (Per Month)	
	A	B	A x B
Lee Grinder	0.085	173	147.050
Chip Wringer	2.550	173	441.150
Cut Off	0.638	173	110.374
Wells Saw	0.638	173	110.374
Mazak I	17.000	173	2,941.000
Mazak II	17.000	173	2,941.000
Shuttle	17.000	87	1,470.500
Okunata	12.750	173	2,205.750
Mayano	6.375	173	1,102.875
J&L Lathe	2.550	173	441.150
Amer Lathe	12.750	173	2,205.750
LeBlond Lathe	1.700	173	294.100
Lathe	1.700	173	294.100
Burgmaster	1.275	173	220.575
Belt Sander 3"	0.850	173	147.050
Belt Sander 1"	0.570	173	98.610
Buffer	0.638	173	110.374
Drill Press 1	0.425	173	73.525
Gang Drill Press	2.975	173	514.675
Rad Arm Drill	2.550	173	441.150
Bracket Rivet	1.870	173	323.510
Drill Press II	0.425	173	73.525
Mill	0.956	173	165.388
Compressed Air	4.250	173	735.250
Baler	0.425	17	7.225
Coating Booth	2.750	93	225.750
VOC Incinerator	2.975	93	276.675
Conveyor	10.675	173	1,846.775
Chiller	22.550	173	3,901.150
Charging Forklifts	9.792	42	411.254
		Totals	24,304.644

Question 8: Would our family-run grain elevator be eligible for the fuel tax exemption?

Answer: Grain Drying, providing heat for livestock buildings and fuel consumed in agricultural production is considered to be exempt from sales tax.

Question 9: Would our commercial greenhouse be eligible for a fuel tax exemption?

Answer: Commercial greenhouses were given an exemption for fuel used in heating and cooling starting on July 1, 1995.

Question 10: Would a food store that processes meat be considered a manufacturer?

Answer: A retail grocery store, a commercial bakery, and restaurants may engage in processing activities such as meat cutting, baking, etc., but they are only incidentally engaged in the processing activities and so they are not considered to be manufacturers. Never-the-less, there is a sales tax exemption for incidental processing for persons engaged in processing but are not defined as manufacturers as described in ' 422.42(14) of the 1997 Iowa Administrative Code Supplement.

Question 11: Wouldn't the electricity used to develop internal tools be exempt from sales taxes?

Answer: No. If you do not sell these tools and the equipment in that part of your operation is used for no other purpose than to design tools for internal use, the energy used is not exempt.

Question 12: Is the electricity used by this pollution control device exempt from sales tax?

Answer: Yes. Under the new provisions of the sales tax exemption, fuel used to control pollution is exempt.

Question 13: Is the fuel used by our own trucks on our property exempt from sales tax?

Answer: Fuel used by vehicles that can be or are registered is not exempt.

Question 14: Is there any way we can benchmark our ratio of exempt to non-exempt electrical uses in our facility?

Answer: Although using an industry segment benchmark is not sufficient documentation, it can tell you whether you are in the right ballpark. The electrical usage for processes of the average manufacturer in the US is 82.5%. Our FREE Questline® HOTLINE service has compiled the percent of electrical energy use for processing compared to total use. (See Table 4).

Table 4

Processing and Non-Processing Electric Consumption by Selected Industries Based on EIA Monthly Energy Consumption Survey		
Industry Description	Percent of Electrical Use That is Processing Exempt (Exempt)	Percent of Electrical Use That Is Not Processing (Not Exempt)
Wet Corn Milling	96.8	3.2
Soybean Oil Mills	93.2	6.8
Malt Beverages	79.1	20.9
Furniture and Fixtures	68.4	31.6
Industrial Organic Chemicals	92.9	7.1
Leather and Leather Products	68	32
Industrial Machinery and Equipment	60.7	39.3

Check with your electric utility's Questline® at 1-800-824-0488 to receive comparable numbers for your industry. Questline® has information on Food and Kindred Products; Meat Packing Plants; Canned Fruits and Vegetables; Frozen Fruits and Vegetables; Beet Sugar; Apparel and Textile Products; Lumber and Wood Products; Paper and Allied Products; Pulp Mills; Paper Mills; Paperboard Mills; Printing and Publishing; Chemicals and Allied Products; Plastic Materials and Resins; Synthetic Rubbers; Cellulose Man-Made Fibers; Organic Fibers; Cyclic Crudes and Intermediates; Nitrogenous Fertilizers; Petroleum Refining; Tires and Inner Tubes; Miscellaneous Plastic Products; Stone, Clay and Glass; Flat Glass;

Glass Containers; Pressed and Blown Glass; Cement--Hydraulic; Lime; Blast Furnaces and Steel Mills; Electrometallurgical Products; Gray and Ductile Iron Foundries; Primary Copper; Primary Aluminum; Primary Non-Ferrous; Aluminum Sheet, Plate and Foil; Fabricated Metal Products; and Computer and Office Equipment.

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Appendicies

Appendix I: Iowa Sales Tax Exemption Certificate (Page 11-12)

Appendix II: Iowa Claim for Refund and Instructions (Page 13-14)

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