

Waste Oil To Energy Converter (WOTEC)

WOTEC systems are perhaps more appropriately called Used Oil/Diesel Fuel Blenders. They essentially clean used oil and used diesel (with filters) and then blend the oil/diesel with new fuel. The result is totally cleaned, precisely blended, water-free fuel that can be used in a diesel engine, furnace, or other such fueled device.

They are becoming more and more popular in Alaska and if your budget can afford the purchase, they can actually save you a lot of money in the long run.

The WOTEC systems essentially turn used oil into brand new fuel that you can use right then and there!



WOTEC model 15s (smallest size and appropriate for most communities).



Close-up of control panel

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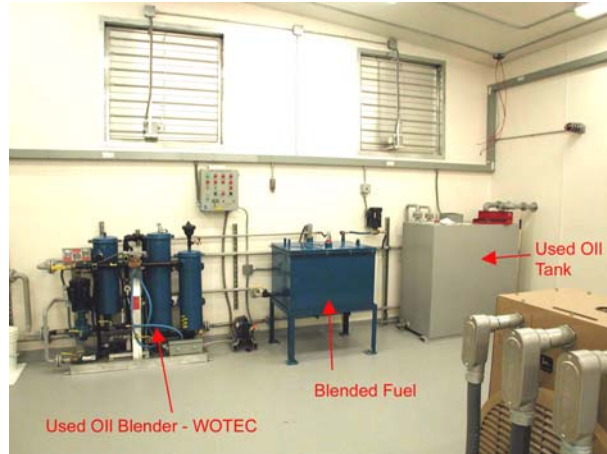
I'm interested in a WOTEC system. Where do I start?

1. **Read** through the information here to learn more about WOTEC's.
2. **Call Les Roe at Arctic Industrial.** Les is extremely knowledgeable about WOTEC systems and has helped several communities purchase their systems. Les can answer any questions you have and can also send you additional information. Les's contact details are as follows:

Les Roe, Arctic Industrial and Automotive Supply
360 E. International Airport Rd #10
Anchorage, AK 99518
Phone: 1 (800) 770 7075
Email: arcticindustrial@yahoo.com

More about how WOTEC's work

WOTEC units filter used oil and diesel fuel to remove any contaminants that are four microns or larger, and then blend the processed oil/diesel with new fuel (that you supply) at an operator selectable percentage. The blend ratios that you can select vary from 0.5% to 5% and 0.5 to 10%. The blend ratios are monitored with an automatic electronic control panel and the fuel that comes out of the WOTEC is a precise mixture of used oil-to-fuel blend. The units operate at a flow rate of 15 gallons per minute.



This is a picture of the largest size WOTEC model (15xdc). The initial used oil tank and final blended fuel tank are shown here.

How much do they cost?

WOTEC systems come in three different sizes and the costs range from **\$24,000 to \$54,000**. Although this may seem like a lot of money, WOTEC's can save you a great deal of money in the long term (see below). Many communities have also purchased WOTEC's through leasing programs, which involve paying small monthly costs spread out over a few years. If you would like information on how to lease equipment, you can contact the following leasing companies:

Information for Leasing Equipment

Tribal/Federal	Leasource http://www.leasource.com 1 (800) 991 0099 (ask for Larry Kennedy at ext. 16)
Municipal/ Village/City	Baystone Financial http://www.baystone.net 1 800 752 3562 (ask for Linda Piers) This link has good information about leasing http://www.baystone.net/Programs/Municipal/LesseeQA.cfm

The vendors are listed here as a directory to assist people in identifying and locating the resources they need to apply to their individual, company, or community situations. CCTHITA neither endorses nor underwrites any of the vendors listed here and is not in any financial relationship with any vendor listed here. CCTHITA does not portray this vendor list as a final or complete list. CCTHITA invites vendors whose products and/or services fit the category of Solid Waste Management to contact Ray Paddock, Environmental Technician, 1-800-344-1432 x7184, about inclusion on the vendor resource web list.

Can a WOTEC save my community money?

Yes! Reusing your used oil for new fuel can save your community money in several ways:

- ✓ Less new fuel will need to be purchased
 - ✓ Disposal costs will be reduced or avoided
 - ✓ Cleanup and liability costs for improper disposal will be reduced or avoided
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Which size should I get?

Most communities in Alaska use the smallest size WOTEC which is the **model 15s**. This is also the least expensive model. The larger models (15xd and 15xdc) are generally used by larger industrial operations.

Where can I purchase one?

The company that makes WOTEC's is Global Energy Recovery Corp. You can check out their website to view the WOTEC's and to read more about them. Their website is:

<http://www.globalenergycorp.com>

You can purchase the WOTEC's through their Alaska distributor, Les Roe. His details are:

Les Roe, Arctic Industrial and Automotive Supply
360 E. International Airport Rd #10
Anchorage, AK 99518
Phone: 1 800 770 7075
Email: arcticindustrial@yahoo.com

Give Les a call! He can answer many of your questions. (And he's nice too 😊)

Does my community produce enough oil/diesel fuel to run a WOTEC?

There is no magic number of gallons of oil/diesel your community produces to warrant getting a WOTEC. It will often depend on your specific community's situation. Les Roe at Arctic Industrial says "If your community runs a power plant, it will be worthwhile to run a WOTEC." Give Les a call and talk to him about your community's oil and fuel usage and he can give you some good advice.

What types of oil are acceptable to use in a used oil burner?

😊 What you can use in a WOTEC:

- ✓ used engine oils
- ✓ gear oils
- ✓ hydraulic oils
- ✓ T04 specification oils
- ✓ synthetic oils
- ✓ flush oils
- ✓ diesel fuel
- ✓ automatic transmission fluids
- ✓ cooking oils

☹️ What you **CAN'T** use in a WOTEC:

- ✗ Gasoline (Can cause explosions!)
- ✗ Coolant
- ✗ Water

What about operation and maintenance?

WOTEC's are known to have great maintenance records. People that we have talked to that run WOTEC's have said that they've had **very little to no breakdowns**. If you purchase a WOTEC, it will come with a guide/manual with information about how to operate and maintain the unit. You can always call the company you purchased it from to ask operation and maintenance questions.



Gauges built into the machines will let you know when the filters need to be replaced. There are three filters in the WOTEC's. The 2 front filters usually only need to be replaced every 65,000 gallons of fuel and the filters cost approximately **\$100 each**. The final polishing filter usually only needs to be replaced every 285,000 gallons of fuel and they cost approximately **\$200 each**. The filters can be purchased from the same company that you purchased the WOTEC from.

Installing a WOTEC unit

When you purchase a WOTEC system, you will be connected with Otto Jacoby, the man who created the original WOTEC system. Otto will talk to you about the layout of the building you will be installing the WOTEC in and will advise you on where best to put it and tell you what you need to know for installation. Installing a WOTEC system is fairly straightforward and is not even as complicated as installing a used oil burner. Feel free to contact the communities listed below that are currently using WOTEC's to find out how their installation process went and anything they'd recommend or suggest.



Who else in Alaska is using WOTEC's?

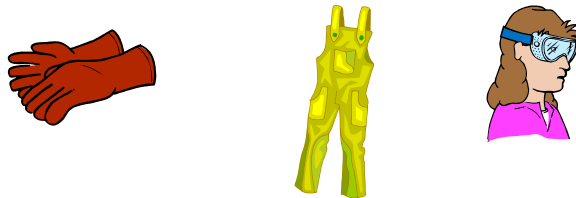
There are several communities in Alaska using WOTEC units. Below is a list of a few of them and their contact information. Give them a call to find out how they like their WOTEC's!

Community	Contact Information
Tuntutuliak	Robert Enoch 256 2529
Yakutat	Scott Newlun 784 3242
Deering	Bruce Barr 363 2138
Shaktoolik	955-3441
Mountain Village	David Peterson 591 2745
Also the State of Alaska, Division of Energy is operating several WOTEC's successfully	Bruce Tiedeman, 269 4641



Safety precautions

When working with used oil, avoid prolonged or repeated skin contact with the oil. It's a good idea to thoroughly wash oil exposed areas with soap and water. Also, it is a good idea to avoid smelling the oil as there may be fumes present. When handling used oil, it is a good idea to wear rubber gloves and Tyvek coveralls to protect your self from being splashed.



You should also have spill cleanup materials available in the event of a spill, such as absorbent pads. Peat moss and cat litter can also be used as a cheaper alternative to absorb spills. For information about safety and where you can purchase safety products, see our safety gear webpage.

Storing used oil

For information about how to properly store used oil, see our storing hazardous wastes webpage.