# INOV8

International, Inc.

*Innovators in*
*Waste to Energy*
*Products*

# About INOV8

*"INOV8 was founded in the State of Wisconsin in 1990. The company manufactures a line of products that utilize patented burners that are fueled by nearly any type of fuel. The core products have been furnaces and boilers. INOV8 was the first in the industry to pair its burner with a boiler in 1992 and has successfully marketed this product since that time. Recent developments include a line of waste water evaporators capable of being fueled by natural or propane gas alone or in combination with a watery oil mixture or just waste oil, to eliminate or reduce volumes of dirty water. The latest product is a water heater capable of using fryer oil as its fuel and has an automatic backup to natural gas. INOV8 clearly produces a superior product in the areas of safety, clean burning, serviceability and overall quality and in the industry is recognized as the leader in the technology of waste oil combustion."*

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# Background

- **History**
  - Founded in 1990 in La Crosse, Wisconsin
  - Developed & now manufactures a variety of heating appliances capable of burning waste petroleum or vegetable oil
- **Products**
  - all products are fully tested & listed to US & Canadian safety standards
    - 4 sizes of furnaces
    - 12 waste crankcase fueled boilers
    - 4 waste fryer space heating boilers
    - 2 waste fryer domestic water boilers
    - 3 waste water evaporators
    - 2 sizes of waste oil burners
    - 4 sizes of gas-oil combination burners
    - 2 sizes of steel oil storage tanks (any custom size available)
    - A PLC (programmable logic control) for automation of fuel options
- **Expertise** - combustion technology involving alternative fuels

# Products Sold & Their Uses

- Thousands of furnaces burning waste lubricating oil, hydraulic & transmission fluids, gear lube, diesel, mineral oil, solvents, jet fuel, fuel oil, gasoline & natural gas or propane.
- Hundreds of boilers burning all of the above waste petroleum oil, or gas-oil in combination.
- Many customers burning waste fryer oils for heat or hot water for over ten years in furnaces & boilers.
- Evaporator customers burning waste coolant oil, marine bilge water with oil, waste lubricating oils eliminating disposal costs.

# Since 1990 INOV8 Has Developed Many "Firsts" in our Industry

- First to use aluminized steel, ceramic target, hinged burners, digital temperature control, first with a website, extended warranties
- High BTU Burners (up to one million)
- Hot water & Steam boilers burning waste oil
- Make-up Air Furnace
- High efficiency waste oil furnaces (83 to 85%)
- Waste Water Evaporator fueled by waste oil
- Specially designed oil storage tanks (to provide best oil to burner)
- Using Vegetable Oil as fuel
- Dual fuel Burner for water-based oil
- Dual fuel Burner for fryer oil
- Controls to provide automatic backup
- Water heater fueled by fryer oil

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# Safety Certifications & Approvals

Multi fuel Oil Burners

Model S200 & S700 Burners Tested & Listed by Intertek ETL-Semko, Test Report #3120734 CRT dated March 7, 2008, to: ANSI UL296, Issue 1994/06/01, Ed:10 Rev:2006/02/24, Standard for Safety Oil Burners; CSA B140.0, Issue: 2003/10/01, Ed:3, General Requirements for Oil Burning Equipment General Instruction No 2-4 (R1991).

Gas-Waste Oil Series: G200, G400, G750 & G900 Tested & Listed by Intertek ETL-Semko, to ANSI Z21.17*AEI Domestic Gas Conversion Burner Issue: 1998/01/01, CSA 2.7-M98, UL296A*AEI UL Standard for Safety Waste Oil-Burning Air-Heating Appliances – Issue: 1995/10/31 Ed:2 Rev: 2006/03/08, CSA B140.0*AEI – General Requirements for Oil Burning Equipment General Instruction No 2-4 (R1991) – Issue: 2003/10/01 Ed: 3, CSA C22.2#3*AEI – Electrical Features of Fuel-burning Equipment General Instruction No 1-2 (R1999) – Issue: 1988/01/09 Rev: 1999/01/01.

PLC Control Panel – Tested & Listed by Intertek ETL-Semko, to UL873 Temperature Indicating & Regulating Equipment.

U.S. Patents: #5,149,260 & #5,341,832 & other patents pending

**Furnaces Models: F125, F240, F240SC & F450**

Tested & Listed by Intertek ETL-Semko, Test Report #3120671 CRT-001 dated July 16, 2007, to:

For *United States installations*: Underwriters Laboratory 296A Waste Oil Burning Air Heating Appliances 2nd edition dated October 31, 1995 with revisions through and including March 8, 2006.

For *Canadian installations*: B140.0-03 Oil Burning Equipment: 3rd edition General Requirements published in October 2003, and

B140.4-04 Oil fired Warm Air Furnaces published in September 2004, 3rd edition, and

Oil Burners: Atomizing-Type CSA B140.2.1-M90 Dated July 1990.

Tested by PFS Corporation, Test Report #90-39 dated March 6, 1991 and #93-10 dated February 24, 1993, to Underwriters Laboratory Standard 296A "Waste Oil-Burning, Air Heating Appliances" (now expired).

Tested by Underwriters Laboratories of Canada, File #CMP239 to CSA Standard B140.4-1974, "Oil Fired Warm Air Furnaces and the CSA Interim Requirements for Appliances Burning Used-Oil in an Atomizing Burner (T.I.L.) No. R-1 and CAN/CSA Standard B140.2.1-1987, General Requirements for Oil Burning Equipment (now expired).

Registered with European Economic Community under Registration No. 3884/1997

Wisconsin Material Approval File No. FN-91-129 (now expired)

Energy Star Rating on Model F125 Furnace

Tank(s)

Tested & Listed by Intertek ETL-Semko, Test Report #3120672 CRT-002 dated May 2, 2007, to:

For *United States installations* to UL Standard 80 for Steel tanks for oil burner fuel, eleventh edition dated August 19, 2004, and

For *Canada installations* to CAN/ULC-S602-03 Aboveground steel tanks for storage of combustible liquids intended to be used as heating and/or generator fuels.

PFS Listing #92-37 dated 2/22/1993 – Above Ground Steel Bench Tank – tested to UL 142 Standard, "Steel Above Ground Tanks for Flammable and Combustible Liquids" (now expired)

**Buderus, Viessmann & Triad Boilers**

Built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code

IBR Listed

Energy Star Approved (when appropriate)

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# Competitive Advantage

- Unblemished safety performance record
- Unlimited fuel options
- Clean combustion
- Options for type of heat: hot water or domestic or space heating
- Options for configuration & BTUs
- Patented technology

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# Some Benefits of Used Oil as Fuel versus New Fuels…

- Reduces customers energy costs for heating facility,
- Reduces consumption of foreign fuels,
- Reduces greenhouse emissions by reducing use of fossil fuels,
- Eliminates messy storage & disposal costs,
- Emissions from biofuels are carbon neutral with reduced CO, CO2, NOx & no SO2,
- All equipment has a short pay-back period, and
- Most equipment has 20 year (or more) expected life.






INOV8 Products: Furnaces, Boilers, Evaporators & Water Heaters – all fueled with used oil.

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# Customer Testimonies

**From:** Parchert, Jim [mailto:JPARCHERT@pac-power.com]
**Sent:** Monday, May 10, 2010 12:08 PM
**Subject:** another heating season over.

Another heating season is now behind us and I just wanted to let you know that the boiler system worked without a single problem. We have found that we need to have the boiler cleaned of ash twice a season. During the last cleaning it was noted that the door insulation needed to be patched as it had begun to break on the edges so I had that done but beyond that we had no additional repair costs beyond normal cleaning and service. The switch to the dual fuel gas/oil burner made all the difference in the world as far as reliability is concerned.

Jim Parchert
Corporate Facility and Environmental Mgr
Pacific Power Products
Ridgefield, Washington 98642

# Customer Testimonies

December 15, 2009

Hi Rebecca,
This is Mark Uher from the Ridgetown College.
Stu Porter had said that you had a couple of questions about the boiler fuel and approval. The fuel that we are using is biodiesel that we have produced ourselves at the plant. It seems to be working very well in our boiler (other than the start-up draft issues which we're working with a local HVAC group to remedy). The approvals are going well. We had a couple of people from the Ministry of Environment give us a temporary work order to use our boiler until our Certificate of Approval gets approved. They saw no issues with using it and the dispersion modeling that we had done for it (as well as other reasons) showed that everything was just fine, which is what we expected. So we are happy with the boiler as well as with Inov8 and really appreciate all your help. If there is anything else please don't hesitate to get in touch.
Thanks and have a great day,
Mark Uher
Ridgetown College
University of Ontario
Guelph, Ontario

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# Readers Digest – September 2004

playing this more demure version of dress-up!

THE BIG IDEA

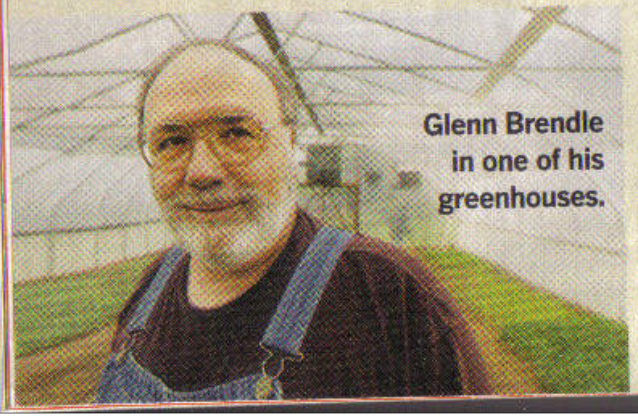
## Fuel for Thought

GLENN BRENDLE was delivering vegetables to a Philadelphia café when several tubs of used fryer oil fired his imagination. Cheap fuel, he recalls thinking.

The café's owner gave the oil to Brendle, who adapted a commercial waste-oil burner to handle it. Now, he burns it to heat two greenhouses on his Gap, Pennsylvania, farm, growing summer produce all winter. The best part: The 5,000 gallons of peanut, soybean and vegetable oil he collects each year from a half-dozen Philadelphia eateries is free.

It's a homespun take on biodiesel, an alternative fuel that's fast gaining converts like country star Willie Nelson, who plans to run his new Mercedes on it. (Like diesel, biodiesel gets better mileage than standard gas, but often costs more.)

Biodiesel emits less greenhouse gases and carbon monoxide than petroleum fuel, but more nitrogen oxide. It also emits a French fry odor. That's fine with Brendle, who'd like to see all fryer oil reused. "It smells like savings to me," he says.



Glenn Brendle in one of his greenhouses.

PHOTOGRAPHED BY MICHAEL T. REGAN

Glenn has heated his house, several greenhouses, and his shop with used fryer oils from Philadelphia restaurants since 2003. He claims that he wouldn't be in his business without this energy savings.

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# Customer Testimonies

Dear Rebecca,

I am writing to you on the morning after a terrible snow storm hit Toronto. We recieved 15-20 cm (almost 2 feet) of snow accompanied with high winds. Currently the temperature this morning is -13 degrees celcius (with the wind chill it feels like -23).

Despite the above mentioned inclemental weather, it is my pleasure to report that your product is functioning absolutley perfectly. The new system that you sent us has surpassed all of our expectations and put to rest any fears that I personally may have had about the reliability and quality of your product.

Not only does the furnace run beautifully. It is more effeciant in the consumption of oil as well as the consumption of propane.

Currently, as I'm writing this email, while sitting at my desk. The temperature in my shop is at a toasty warm 24 degrees celius. The current temperature outside feel like -23 degrees celius.

You will be happy to hear that this new system has made me swallow my words. This new system truley is 'the Mercedes of waste oil burning furnaces'

Amer Nijjar
Total Automotive

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# INOV8's Vision

- To provide consumers options for energy savings.
- To fully utilize energy from waste products.
- To produce products that reduce greenhouse emissions.
- To continue the development of alternate fuels until they are no longer considered alternates.
- To reduce US dependency on foreign fuels.
- To produce the safest, most reliable, 'innovative' heating systems available.

# INOV8 Burners Provide Solutions to Pollution

- Eliminate wastes
- Eliminate or reduce heating costs
- Reduce consumption of new fossil fuels