



**Save 50% on
your heating
costs!**



**NEW! - WORLD PREMIER
Renewable BIOMASS Fuel
Air Heating System**

Ag waste, screenings, wood chips, etc

**Dryer air = Healthier Birds
Healthier Birds = Increased Profits!**

**Designed for: - Poultry barns
- Farm Shops - Greenhouses
- Grain Drying**

**GreenAirHeat sizes range from
500,000 - 2,000,000 BTU**

FEATURES:

Fully automated system
Auto Ash Removal System
World class combustion system with proven
Chain Grate Design Technology
More than 120 North American installations
Refractory lined fire chamber burns any biomass
fuel with 25% plus fuel moisture
Can burn wood pellets and multiple fuels
including: Wood Chips, Shavings, screenings, etc.

Auto ignition system
VFD Fully modulating control system
Reliable low maintenance proven product
Reliable fuel handling systems
Dust collector and spark arrester optional
Made In CANADA

SAVE more than 50% of the cost of fuel with
readily available wood chips and other biomass

FOR MORE INFORMATION PLEASE CONTACT:

PHONE: 204-883-2378

EMAIL: Info@TripleGreenEnergy.com

www.TripleGreenEnergy.com

Healthier birds = Increased Profits



TripleGreenEnergy.

Renewable - Sustainable

Locally Grown Energy

www.TripleGreenEnergy.com

TripleGreen Systems

Sales &
marketing

Service &
Maintenance



Patented
Products

TripleGreenEnergy.

Design &
Installation

Quality
Manufacturing

LOCALLY GROWN ENERGY



Locally grown
Locally processed



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Biomass is biological material obtained from living or recently living plant material that can be processed into electricity, fuel and heat.

TYPES OF BIOMASS FUEL

Wood chips



Wetland invasive plants e.g. phragmites



Straw & screenings



Paper Waste
landfill diversion



Purpose grown
Crops - Miscanthus



Pelletized waste



BIOMASS INDUSTRY

“The global biomass market has tripled in the last 10 years. Led by Western Europe and China” (2002-2012)



Europe alone will use 10,000,000 Tons of wood pellets this year.

1.7 million tons of wood pellets are exported out of Canada each year.



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COST OF FUEL

Cost Per 1,000,000 BTUs:

Least Expensive



Most Expensive

Wood Chips	\$ 2.50
Cord Wood	\$ 5.50
Natural Gas	\$ 9.20
Wood Pellets	\$ 13.60
Propane- .45	\$ 20.00
Fuel Oil	\$ 30.00
Electric	\$ 50.00



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Biomass Heating Energy Savings Example



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Average Poultry Barn

- 50,000 litres of propane annually
- \$0.45 a litre
- \$22,500 annual costs

Equivalent Costs

- Wood Pellets - \$14,000.00 @ \$200 a ton
- 70 Tons Annually
- Wood Chips - \$2760.00 @ \$30 a ton
- 92 tons annually



CONSISTENT ENERGY PRICES

Wood pellet costs have been very consistent over the last 10 years.
Wood chips are very in-expensive – makes an economical heat source – pellets are as much as 5 times as expensive



Locally Grown Energy

Say goodbye to the fuel companies



**Save 50% on
your heating
costs!**

Poultry Barn

Typical Heating Systems



Unhealthy Environment

MOISTURE — Limited or No Humidity Control

Wet Litter

- Toxic air quality
 - High Ammonia
 - Carbon Monoxide
- Inconsistent temperatures
- Higher fuel costs
 - Heating moist air
 - Increased ventilation
- Less than optimal growing environment



Products of Combustion

Released inside the barn



ONE Litre of Propane

- **Consumes 15.5 litres of fresh air (oxygen)**
- **Generates 3.4 lbs of CO- Carbon Monoxide**
- **Generates .81 litres of water**

**Poultry Farm Example – 50,000 litres
annual propane consumption**

- **Consumes 775,000 litres of fresh air (oxygen)**
- **Generates 85 tons of CO (Carbon Monoxide)**
- **Generates 40,500 litres of water (1.25 tanker trucks)**

VICIOUS CYCLE

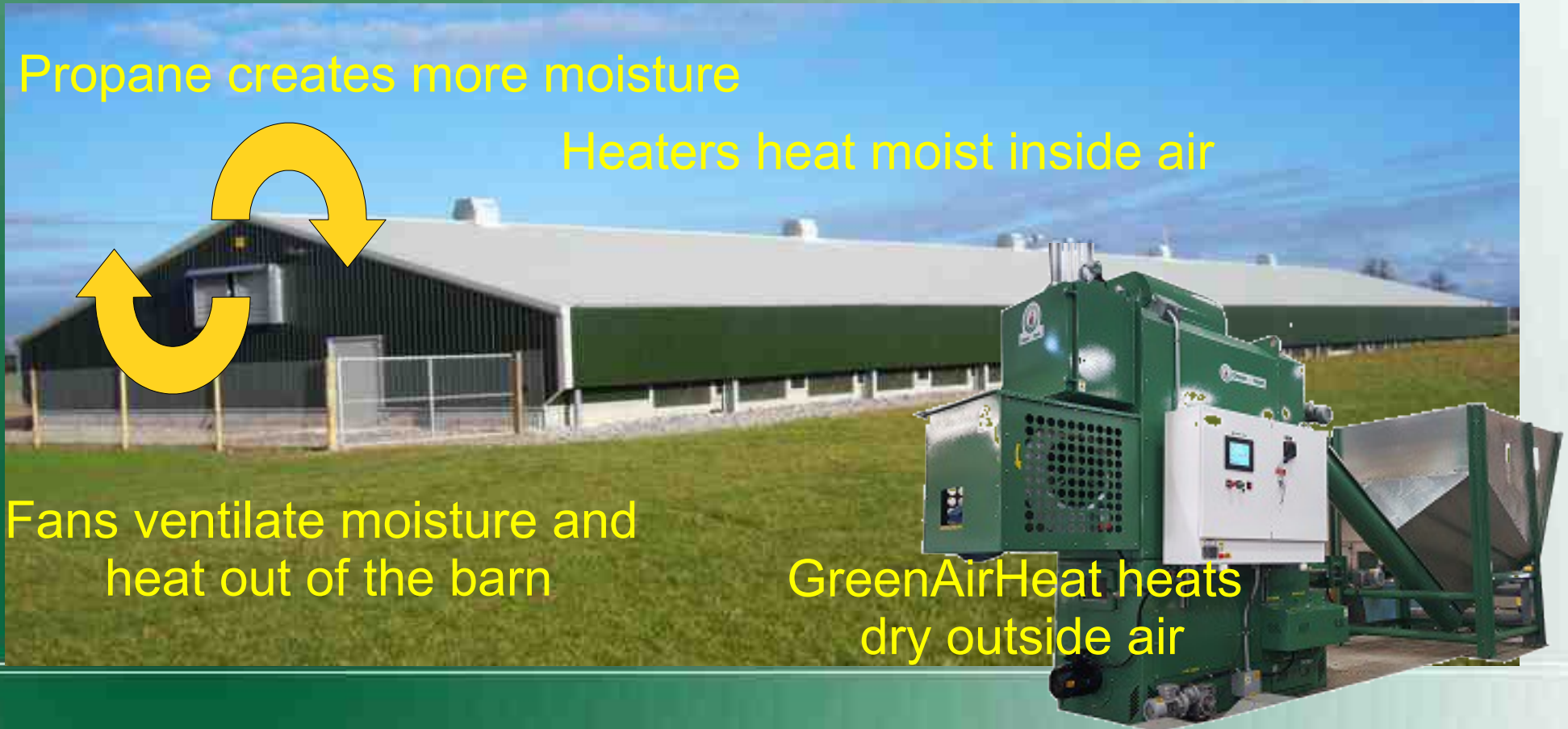
Ventilation systems should be set to service the birds needs rather than compensate for the heaters.

Propane creates more moisture

Heaters heat moist inside air

Fans ventilate moisture and heat out of the barn

GreenAirHeat heats dry outside air



Poultry Health



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“Wet litter can be one of the most costly environmental conditions... both a financial and a bird comfort / animal welfare standpoint.”



Increased litter moisture negatively impacts air quality and can impact bird health as they reduce feed intake.

“Improved air quality enhances bird performance.”

Car example



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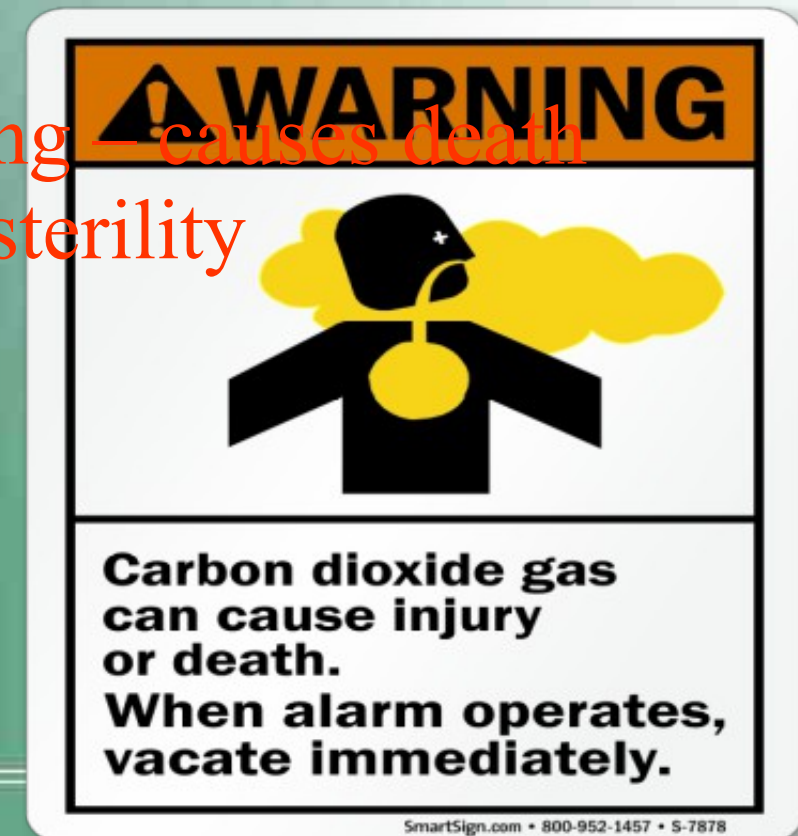
How would a car like this work?



- Tailpipe inside the car
- Windows open to ventilate the toxic CO
- Increase heating to replace escaping heat

Farmer Worker Health

- Ammonia – studies have shown that 50 ppm and higher can cause respiratory and intestinal tract issues.
- CO – Carbon Monoxide poisoning – causes death
- N₂O – Nitrous Oxides – causes sterility



Greenhouse ECO System



Greenhouse requires **TripleGreenEnergy.**
very sensitive ecosystems.
Conditions have to be perfect -
Temperature, light, humidity,
nutrients, water
Chickens need a perfect environment
For maximum productivity



Forced Air GreenAirHeat.com



TripleGreenEnergy.

- Forced air economical biomass heat
- Manufactured in Canada
- 1000s of installations of similar systems around the world
- Proven and effective



GreenAirHeat.com Highlights



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- 240,000 Btu – 4,000,000 per unit
- Fully Automatic – Wi-Fi Capable
- Easy Maintenance – Plans available
- Ties easily into barn environmental controls
- Fuel Savings – 88% efficiency
- Combustion outside the barn
- Flexible fuel sources - wood chips, pellets, sawdust
- Proven technology

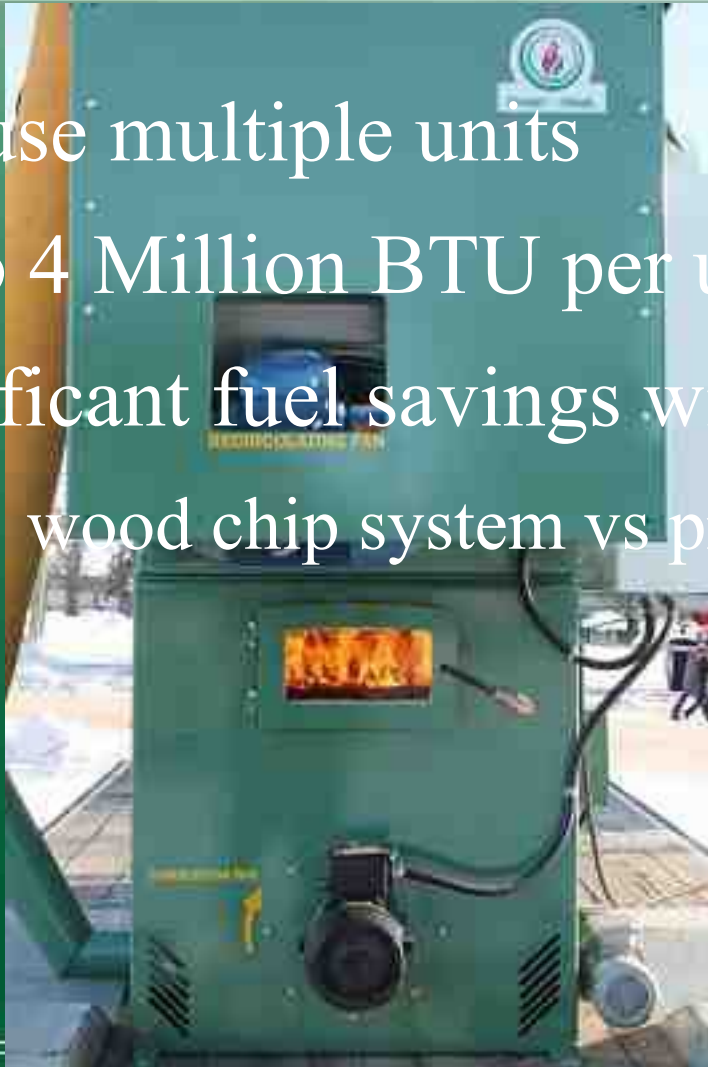


Grain Drying - GreenAirHeat.com



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- Can use multiple units
- Up to 4 Million BTU per unit
- Significant fuel savings with automated
 - wood chip system vs propane



Humidity Control = Healthy Environment



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- Dry Litter
- Clean air
- Reduce Ammonia
- No CO (Carbon Monoxide)
- Optimal Growing environment
- Reduced Heat Usage
- Reduced ventilation rates
- Healthy Birds → (Higher Profits)



GreenAirHeat.com

Combustion Outside the barn



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- Leave CO and Moisture Outside
- Favorable with Insurance companies
- No “open” flame in barn



Recap - GreenAirHeat.com



TripleGreenEnergy.

- Total Humidity Control
- Reduced Ammonia
- No Open Flame in the barn
- No CO and Nitrous Oxides
- Fresh Air Exchange
- Better Weight gain to feed ratio
- Healthier birds = Increased Profits
- Over 160 Installations in Canada
- 5 year – bumper to bumper warranty



Antibiotic Free



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- The market is changing



- Premium Prices - \$0.08 a kg extra
- Tyson Foods – USA's largest chicken supplier will be 100% antibiotic free by 2017

Next Steps



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- Presentation
- Feasibility study
- Sales proposal
- Payment Plan Options
 - ◆ Leasing plans available
- Installation
- Maintenance and Service
- Fuel Supply



TripleGreenEnergy.com Products

- TGE series 2 stage all biomass hydronic thermal conversion systems designed to deal with silica containing bio-fuel (post harvest waste, tree bark)
- TripleGreenFlame.com hydronic chain grate stokers
- DGE hydronic cast grate stokers for chips or pellets
- GreenAirHeat.com air heaters use chips or pellets
- ORC electric power generators
- BioRoter.com compost digester





TripleGreenEnergy.

Renewable BioMass Hydronic Heat and Power.

Why TripleGreen?

• **Innovative** • **Environmentally Sustainable** • **Renewable BioHeat**

Patented **TGE Series** up to 10 Million BTU

10 Year Cast refractory lining, patented silica removal system

- BioChar soil amendment production, carbon sequestration, landfill diversion
- Optional Patented straw shredder - straw handling systems
- Wood chips handling systems

TripleGreenFlame up to 20 Million BTU

Chain Grate Stoker

100 + Units Installed

DoubleGreenEnergy up to 1.5 Million BTU

Cast Iron Stoker

SolidAirHeat Forced Air up to 2 Million BTU

Popular system for poultry producers



NEW!

SolidAirHeat

Healthier Birds = Increased Profits!



Up to
11,000,000 BTU

BioRoter.com COMPOST DIGESTER

- Heavy duty steel construction: 1/4" wall steel drum,
- Expandable to meet future needs
- Power Coated for Durability
- Automated continuous processing (24/7, 365 days)
- Reduces bio-security risks, destroying pathogens during the composting process



Wood chips fuel feeding

Ontario • Manitoba • Saskatchewan • Alberta • Quebec • Pennsylvania • North Dakota • Minnesota

1-855-373-2378 | www.TripleGreenEnergy.com | www.bioroter.com