

"NY Thermal is receiving the eKOCOMFORT Award  
in recognition of their innovative, energy-efficient,  
world-class, all-in-one HVAC system."

*Wajid Khan, Member of Parliament on behalf of the  
Honorable Gary Lunn, Minister of Natural Resources*



Winner of Natural Resources  
Canada's new eKOCOMFORT  
Award

# THE MATRIX

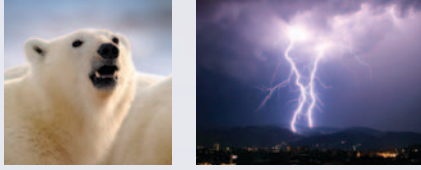
*Total Home System*

Saving our planet  
for children we'll  
never meet



# THE PROBLEM

## GLOBAL WARMING



Global warming is the gradual increasing of the Earth's surface temperatures that is caused by Greenhouse Gas (GHG) emissions being trapped in the Earth's atmosphere. This warming effect is most commonly associated with human interferences such as the burning of fossil fuels and release of industrial pollutants.

The effects of this warming are already being felt: Arctic ice is disappearing with polar bears and indigenous cultures already suffering from the sea-ice loss; glaciers and mountain snows are rapidly melting; we are experiencing an increase in the amount of extreme weather events, such as wildfires, heat waves and strong tropical storms.

## GREENHOUSE GASES



During the past 20 years, levels of GHGs in the atmosphere, including carbon dioxide, have increased by about 25%, and three-quarters of the human-made carbon dioxide emissions are from burning fossil fuels.

In 2005, global atmospheric concentrations of CO<sub>2</sub> were 35% higher than before the Industrial Revolution. Present CO<sub>2</sub> concentrations are higher than at any time in at least the last 650,000 years. It is estimated that without preventative measures, GHG emissions will increase by an additional 16% by 2012.

## ELECTRICITY GENERATION

The generation of electricity is a complex process that produces GHG emissions from beginning to end. More than 27% of all GHG emissions in North America are caused by the generation of electricity and its transportation to your home.



*Conservation is key* – GHGs and pollution are borderless issues – what one town or country does, positively or negatively, can affect everyone. Power conservation in areas where electricity generation is more efficient (hydro, solar, wind, etc.) is still important, as this efficient power can be sold to other states, provinces or countries. This "sold power" can offset the generating of power that is less environmentally-friendly.

## YOUR CHOICE

Many builders and contractors have been using new products and techniques to improve energy efficiency, and reduce heating and cooling costs. Although these products reduce GHGs by burning less fuel, many still rely heavily on electricity to operate. Electrical generation is the single largest contributor to GHGs in North America.

You now have the opportunity to choose the most environmentally-efficient integrated appliance, reducing GHG emissions while increasing your comfort.

## EFFICIENT APPLIANCES

Over the past 10 years condensing furnaces, boilers and heat pumps have increased in efficiency, however the reduction of GHG for these products is small, as they depend very heavily on electricity.

The Matrix provides tremendous GHG savings compared to the most efficient condensing furnace, heat pump, and geothermal heat pump. You're not only saving fuel bills, you're saving the planet.

***Make the right choice for your comfort, wallet, and for the planet. It doesn't cost more to be environmentally-friendly when heating or cooling your house, so why not make the green choice now?***

Be informed. For a listing of related websites on GHGs and global warming, please visit [www.NtiMatrix.com](http://www.NtiMatrix.com).



[www.NtiMatrix.com](http://www.NtiMatrix.com)

# THE TOTAL SOLUTION

For our planet and our children, NTI has spent almost 10 years developing, testing and perfecting the technology of **The Matrix** to deliver a premium system that incorporates a Condensing Water Heater, Condensing Furnace, Condensing Boiler and Heat Recovery Ventilator, and which is already pre-wired for air conditioning. All of these functions are contained in one powerful system that requires less energy to operate than competing products.

A world-class energy device that delivers reliable heating to keep your family comfortable, **The Matrix** will also help you to decrease your carbon footprint.

Hundreds of inefficient systems in use at this very moment are consuming large amounts of electricity generated through the burning of fossil fuels.

***The Matrix from NTI produces fewer tons of GHGs than any other integrated home heat product***

- The Matrix requires less electrical energy to operate than any other equivalent system.
- The Matrix uses a patented high-efficiency heat exchanger to reduce gas consumption by as much as 30% when compared to a conventional system.
- The Matrix uses extremely powerful microprocessor electronics to analyze the home environment and produce only the energy needed to increase comfort.
- The Matrix controls and optimizes heating, cooling and ventilation. This eliminates the need for separate appliances and their redundancies and additional energy usage.



THE **MATRIX**  
*Total Home System*

*For your planet  
and for your  
children's planet.*



Builders have been increasingly improving their methods of construction to tighten the “building envelope” of homes and eliminate air leaks. However, if these homes do not use a heat recovery ventilator (HRV), there is no ability for oxygen to efficiently enter a home, which can decrease comfort and increase energy usage. **The Matrix** HRV will increase the comfort, safety and efficiency of your home by providing fresh air. An energy efficient home with the ultimate indoor air quality – why settle for less?

## SAVE ON INSTALLATION AND OPERATION

**The Matrix** is a single appliance, which means it can be installed much more quickly than conventional heating systems that can be complicated to integrate. In fact, the initial purchase cost of **The Matrix** is typically offset by the reduction in installation time. And with **The Matrix** you have only one appliance, and not five, to service and warranty.

**The Matrix** is so efficient that massive GHG savings are realized when comparing it to competing condensing furnaces, and air source and geothermal heat pumps. A two-ton CO<sub>2</sub> reduction realized by **The Matrix** is equal to the planting of more than 280, or two acres, of trees.



# A DEDICATION TO INNOVATION

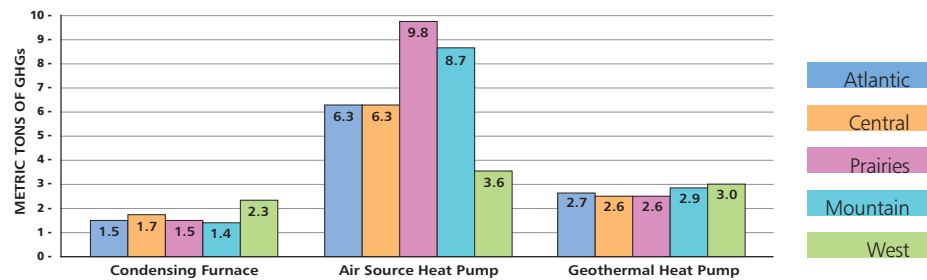
NTI has been working closely with the Canadian Department responsible for Energy Efficiency (NRCan) to develop a new CSA performance standard called the P.10-07 for Integrated Mechanical Systems (IMS). Through independent laboratory testing, NTI is currently the only company in the world to meet the P.10-07 performance standard. In addition, **The Matrix** so far exceeds this new standard that an elite classification of "Premium Performance" has been added. **The Matrix** has already exceeded this standard as well.

## THE MATRIX Total Home System



See [www.NtiMatrix.com](http://www.NtiMatrix.com) for certification specifics.

### Estimated Matrix Annual Tons of GHG Savings – North America (tn CO<sub>2</sub> Equiv.)



Data source for The Matrix, Bodycote testing to P.10-07, and simulation to NRCan Hot2000 software. GHG calculations are done using National GHG emissions, which represent a minimum national standard. In Canada, the GHG rate is .05 tons equiv. CO<sub>2</sub>/kWh and .15 tons equiv. CO<sub>2</sub>/kWh for the United States. Your province or state may significantly exceed these numbers (CO<sub>2</sub>/kWh in Atlantic Canada is .221, Saskatchewan is .74 and Alberta is .88) and accordingly your GHG savings would increase to that magnitude.

#### General Specifications

|                                |             |
|--------------------------------|-------------|
| Input (MBH)                    | 25-150      |
| DOE Heating Capacity (MBH)     | 136         |
| Net I=B=R Rating (MBH)         | 118         |
| DOE AFUE (%)                   | 95.1        |
| Weight (lbs.)                  | 300         |
| Dimensions H-W-D (inches)      | 53-28-38    |
| Supply Plenum (inches)         | 22.5 x 18.5 |
| Return Plenum (inches)         | 18 x 18     |
| Furnace Filter (inches)        | 20 x 20 x 2 |
| Vent / Air-inlet size (inches) | 3           |

#### Forced Air Specifications

|                           |          |
|---------------------------|----------|
| Heat Output Range (MBH)   | 12-105   |
| Heating Air Flow (CFM)    | 400-1200 |
| Cooling Air Flow (CFM)    | 400-1600 |
| Continuous Air Flow (CFM) | 400-1600 |

#### Domestic Hot Water Specifications

|  |        |
|--|--------|
| Heat Output Range (MBH)                  | 23-138 |
| Minimum Flow Rate (gpm)                  | 0.4    |
| Continuous Recovery Rate at 115°F (gph)* | 255    |
| Continuous Recovery Rate at 140°F (gph)* | 184    |

\* With inlet water temperature of 50°F

#### Integrated Mechanical System Performance Ratings (CSA P.10-2007)\*

|                                       |         |
|---------------------------------------|---------|
| Annual Electrical Consumption (kWh/y) | 1826    |
| Overall Thermal Performance           | 0.91    |
| Performance Level                     | Premium |

\* Only model M100V has been evaluated to the CSA P.10-2007 standard

#### Heat Recovery Ventilator Specifications\*

|  |              |
|--|--------------|
| Ventilation Range (CFM)                | 40-150       |
| Sensible Recovery Efficiency @ -25°C   | 59% @ 67 CFM |
| Sensible Recovery Efficiency @ 0°C (%) | 66% @ 68 CFM |

\* Only model M100V is equipped with a Heat Recovery Ventilator (HRV)

NTI reserves the right to change specifications without notice.



For more information on The Matrix and how you can *increase your comfort*, and *reduce your carbon footprint*, visit [www.NtiMatrix.com](http://www.NtiMatrix.com)

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