

Building your business
on energy efficiency



Building Up

June 2008



Rising energy prices and building costs have more people looking for energy- and resource-efficient homes. One of the more cost-effective energy-saving technologies you can offer customers is a drain water heat recovery (DWHR) system.

Recovering heat from residential drain water is a relatively new strategy in the United States but is becoming common in Canada. The concept is similar to a heat recovery ventilation system that recovers heat from air exhausted from the home. Coils capture heat from household wastewater and use it to preheat incoming cold water feeding the water heater. It can save up to 40 percent on water-heating costs.

It is likely that DWHR systems soon will become standard in energy-efficient homes, just as we've seen with air-to-air heat exchangers. Twenty years ago, no one thought twice about exhausting warm, stale air out of a home without recovering the heat energy and returning it to the building. Now, every new home built to Minnesota Power's Triple E New Construction standards has a mechanical ventilation system that recovers more than 76 percent of the heat from exhausted air. Drain water heat recovery may see similar growth.

Minnesota Power is offering a new rebate along with installer training to advance this exciting energy-saving technology. Use these tools to build your business on energy efficiency.

Dean Talbott
Residential Program Manager

Drain Water Heat Recovery

Stop Pouring Money Down the Drain

Houses being built today are more energy efficient than ever. Yet one area remains largely untapped—recovering the heat from drain water.

Water heating is one of the largest energy costs in most cold-climate homes, second only to space heating. It accounts for about 21 percent of residential energy costs. That's because it takes a lot of energy to heat water. Unfortunately, much of that energy is money down the drain.

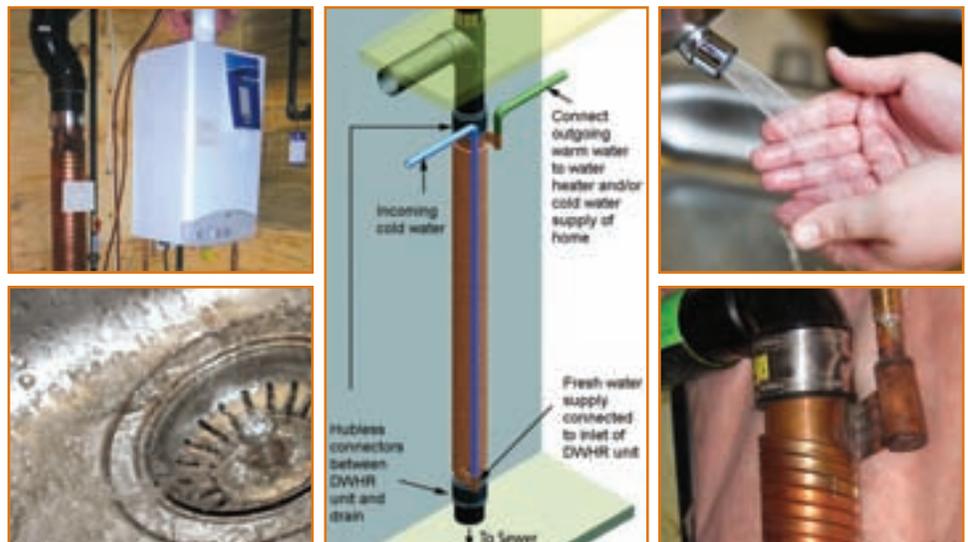
Think about it. Water from showers, dishwashers and washing machines often is still warm when it goes down the drain. The U. S. Department of Energy estimates that up to 90 percent of the

energy poured into home water heating is wasted in this way. For homeowners, this can add up to hundreds of dollars per year.

"People don't realize the potential. Every home has outgoing warm drain water. That's a lot of valuable heat."

Drain water heat recovery (DWHR) reclaims much of this wasted energy and reuses it to preheat cold freshwater as it enters the home. The technology is simple. Multiple copper tubes are tightly wrapped around a larger copper drainpipe that takes wastewater out of the home. As warm drain water flows down the drainpipe, its heat is transferred to incoming cold water that flows through the copper tubes on its way to the water heater and some cold water fixtures. (cont.)

Gerald Van Decker
President
RenewABILITY Energy Inc.



Drain water heat recovery units, such as the Power-Pipe™ by RenewABILITY Energy Inc., are easy to install and can save about 40 percent on home hot water heating costs. Minnesota Power is offering installer training and a \$350 rebate on qualified systems.

Minnesota Power Offers \$350 Rebate (cont.)



"It allows you to heat less water and heat water less," said Gerald Van Decker of RenewABILITY Energy Inc., an Ontario-based company that specializes in DWHR systems. "The water heater doesn't have to work so hard or use as much energy."

The result is up to a 40 percent reduction in water heating costs and a payback of two to seven years depending on how much hot water is used. DWHR systems can be installed in new or existing homes, just by replacing a portion of the drainage stack with a heat-exchanging unit. The cost ranges from \$600 to \$1,200.

"This is a practical technology that is easily incorporated into most homes with a great return on investment," Van Decker said. "It saves energy, cuts greenhouse gases, adds value and is cost effective."

Minnesota Power is partnering with RenewABILITY Energy Inc. to train regional plumbers and installers about DWHR systems and benefits. Webinar sessions are being planned, and Minnesota Power is offering a \$350 rebate to customers with electric hot water heating who have DWHR units installed by trained providers. Register for this training at <http://www.renewability.com/Signupform.aspx> and tap the potential of DWHR.

"People don't realize the potential," Van Decker said. "Every home has outgoing warm drain water. That's a lot of valuable heat." 🏠

House as a System

Energy-Efficient Water Heating

- Triple E Home
- Energy-Efficient Construction
- ENERGY STAR® Lighting
- ENERGY STAR® Appliances
- High performance HVAC
- Energy-Efficient Water Heating
- Renewable Energy
- House as a System



A high performance water heater, low flow faucets and fixtures, and ENERGY STAR®-qualified kitchen and laundry appliances all support the energy- and cost-saving goals of drain water heat recovery. Solar thermal heating is the next step in making your system highly efficient. Solar thermal installer training has been taking place throughout Minnesota and incentives are expected to be available in 2009. Minnesota Power is playing an active role in advancing solar thermal technologies in the state.



Check out past issues of Building Up online at www.mnpower.com/powerofone in the New Construction (Triple E) section under One Home.

Triple E Trend

Heat Recovery Ventilation

When Minnesota Power's Triple E New Construction program began in 1991, air-to-air heat exchangers were just coming on the market. Triple E helped introduce this new technology, prove its effectiveness and advance its use in our region. Program standards now require new homes to include whole house mechanical ventilation systems that recover more than 76 percent of the heat or energy in air before it is exhausted.

Contact Information



30 West Superior Street
Duluth, MN 55802-2093
Toll-Free 800-228-4966
218-722-2641
www.mnpower.com

Featured Incentives

EDUCATE YOUR CUSTOMERS about Minnesota Power's conservation incentives and build your business on energy efficiency.

Drain Water Heat Recovery: \$350 rebate for Minnesota Power customers who heat their water with electricity for installation of a DWHR system by a trained provider. Unit must have heat recovery efficiency of 42 percent or higher (*begins July 2008*).

Air Source Heat Pump: \$250 for furnace-integrated systems (ductwork) and \$500 for mini-split ductless systems (*begins July 2008*).

Triple E New Construction: Up to \$2,000 in rebates based on specific Triple E standards for thermal integrity, airtight construction, moisture control, ventilation, heating and cooling, water heating and inclusion of ENERGY STAR®-qualified lighting and appliances.

Visit www.mnpower.com/powerofone for details on these offers and other rebate specials.

