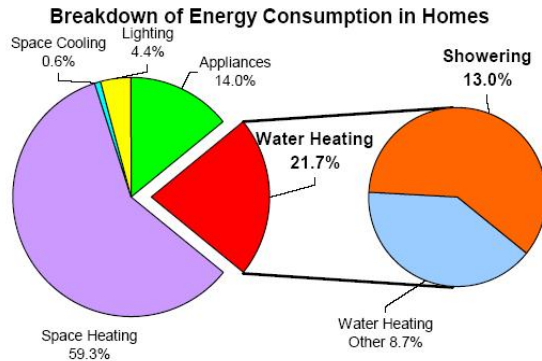




Backgrounder: For Homes

Water heating is the second most costly energy demand in homes, accounting for 20-30% of energy consumption. Furthermore, showering is typically the highest hot water load and about 90% of the energy used to heat water in a home is wasted out to the sewer.

Drain Water Heat Recovery (DWHR) units such as the Power-Pipe® recapture some or most of this valuable energy and use it to heat cold fresh water. The result is savings on your energy costs.



What does the Power-Pipe® look like?

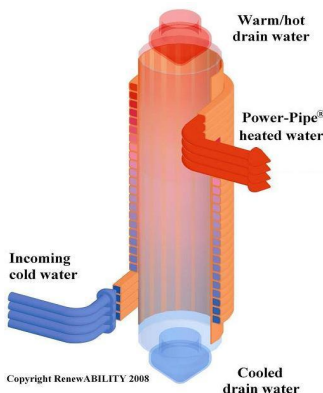
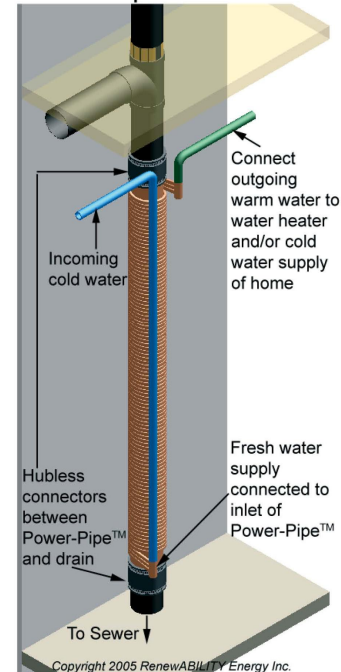
Falling Film Heat Exchangers like the Power-Pipe have copper tube wrapped very tightly around an inner copper drainpipe. Our competitors' "First Generation" units consist of a single tube wrapped on the drainpipe resulting in high pressure loss in freshwater supply thereby causing flow problems in homes. Their "Second Generation" units have 2 or more "single" tubes wrapped at a time on the drainpipe thereby making them non-counter flow heat exchangers that result in low performance. Independent testing* has proven that the patent-pending Power-Pipe design is far superior because it has multiple coils

wrapped together around the inner pipe thereby achieving the highest efficiency and very low pressure loss.

Power-Pipe® Installation is Simple:

The Power-Pipe becomes a part of your drainage stack, usually in your basement, by cutting your drainpipe and using the supplied connectors. The coils become a part of your freshwater supply line by diverting it to the Power-Pipe. For more information please download the Power-Pipe Installation Manual from our website www.renewability.com.

Power-Pipe™ Installation



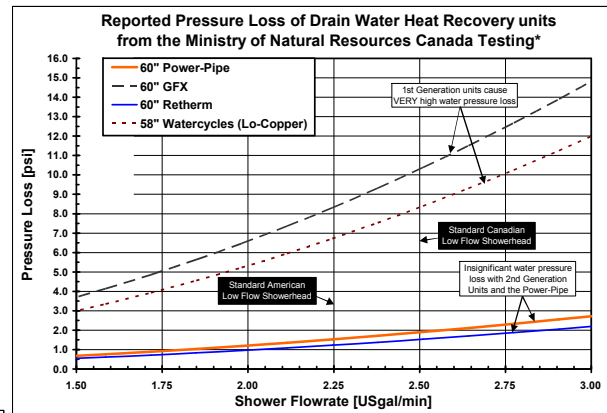
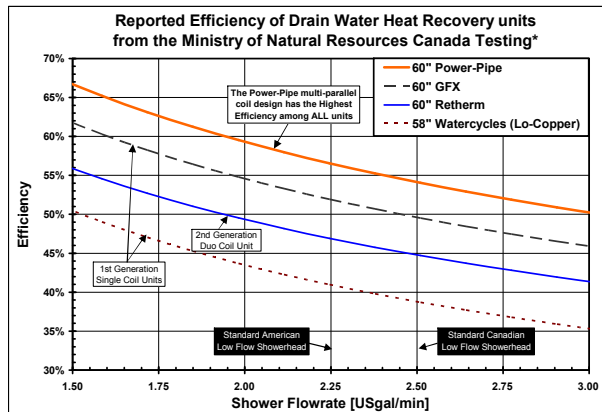
How Does the Power-Pipe® Work?

Fresh water from the city supply is quite cold and a lot of energy is required to heat that water to the comfortable temperature required for showering. Without the Power-Pipe you are wasting all of that valuable energy down the drain. Drain water naturally clings to the inner wall of the Power-Pipe in a very thin film that falls quickly. As you take a shower this thin film of warm drain water readily transfers its heat energy to the inner wall of the Power-Pipe. The Power-Pipe safely transfers that heat energy to the cold freshwater flowing through the outer tubes. No pumps are needed, no maintenance is required, and the Power-Pipe will have a very long service life in your home.

Should we be concerned about a Loss of Water Pressure when using the Power-Pipe®?

No. The Power-Pipe was specifically designed to cause an insignificant loss in water pressure in a typical home. Before developing the Power-Pipe, we sold a 1st Generation single coil DWHR unit but quickly stopped as customers were not able to attain sufficient flow in their homes.

Measurements undertaken by the Canadian Government illustrate the huge gap in pressure loss between DWHR unit designs.



How Efficient is the Power-Pipe®?

Efficiency at a given equal flowrate is the standard for comparison between units. Heat exchanger effectiveness is used by some of our competitors and misrepresents performance.

The Power-Pipe is second to none in efficiency (according to a study* completed by the Government of Canada) primarily because it is a counter-flow heat exchanger.

It should be mentioned that efficiency is also dependent upon the length, the diameter, and the water flowrate. The shortest unit that should be considered is 30in, however we suggest that you consider installing the longest Power-Pipe that you can fit into your home (up to 6 feet in length). Large sizes are also available. A 60in (152cm) long Power-Pipe unit can bring the cold water temperature from 50°F (10°C) up to about 77°F (25°C) under equal flow conditions. If connected to only the water heater or only the cold side of the water fixtures (unequal flow conditions), the savings are less, but the temperature of the cold water is brought up to about 82°F (28°C).

How Much Does the Power-Pipe® Cost and How Much Does it Save?

The total installed cost for a Power-Pipe is normally between \$600 and \$1,200. With an annual "return on investment" in the range of 15-50%, the Power-Pipe is normally at least 4x more cost effective than solar water heating. In a typical home the Power-Pipe will save 25%-40% on water heating. This primarily depends upon the efficiency of the unit, how it is installed (refer to our Installation Manual), and how hot water is used.

There are many other benefits from owning a Power-Pipe®, including:

- you will likely never run out of hot water because your hot water capacity will be much greater (it takes less energy and time to heat the water since the incoming water is preheated by the Power-Pipe).
- a Power-Pipe will reduce your family's greenhouse gas emissions by up to 1 ton/year
- the Power-Pipe works great in combination with "instantaneous" (on demand) water heaters which sometimes have difficulty in meeting demand either in the winter or when two showers are running
- the Power-Pipe reduces "sweating" on your cold water pipes in your home
- the Power-Pipe looks great!

RenewABILITY Energy: We design, manufacture and sell the patent pending Power-Pipe® Drain Water Heat Recovery system and are the recognized leader in this field. There are Power-Pipes installed in many homes and apartment buildings in Canada, the U.S., Europe and Asia. The company was founded in July 2000.

*Reference: "Drain Water Heat Recovery Characterization and Modeling", Charles Zaloum et al, Sustainable Buildings and Communities Group, Natural Resources Canada, Ottawa, July 19, 2007