

Zen and Hot Water Heating!

By Rod Fraser



Zen is a state of calm attentiveness in which one's actions are guided by intuition.

Sometime last year, Don told me his hot water tank was 19 years old. He estimated he had paid \$4,000 in rental charges over the years. I was surprised. Renting a hot water tank didn't make much sense in such circumstances. Why not buy out the contract?

After 19 years, the buy-out would be less than \$100. Once he did this, he would own his tank. Then he could replace it—or keep it until it leaked all over the basement floor.

Don looked a little dismayed at the suggestion that his 40 gallon hot water tank might not last forever. I laughed and told Don,

"Let's face it: hot water tanks have useful lives of ten to twelve years. It's pushing things to keep them 19 years in a house with a finished basement. The cost of a flood might be substantial."

"Why not replace the tank for an upfront cost of \$1,000 to \$1,500? If the new tank lasts ten years, you will save somewhere between \$900 and \$1,400, compared to paying current monthly rental rates."



The following week, while having lunch, Don confided he had done some homework. He thought the current forty gallon tank was a good size (with just him and his wife at home). He also concluded the gas hot water tank had to go. He would replace it with an electric hot water tank.

Don mentioned gas hot water tanks were only 60% energy efficient. The design consists of a tank

with a chimney in the middle and a gas flame at the bottom to heat the water. As natural gas is fed into the gas flame, CO₂ emissions and most of the heat go up the chimney. The water is heated incidentally and inefficiently.

Electric hot water tanks are cheaper to install, don't require venting, are 92% energy efficient and can be placed anywhere in the house. Today, they are well insulated and hold their heat for hours. They are simply a better alternative, particularly for smaller households of one or two people.

Don observed their effectiveness while on vacation in Spain a few years ago. In his hotel room, hot water was heated electrically in a small 10 gallon tank in the closet. When the room was cleaned each morning, the maid turned off the power to the hot water tank.

The idea was to heat the water overnight when it was cheaper and rely on the thick insulation of the tank to keep the water hot during the day. It seemed to work. The water was always hot.

It wasn't long before Don and his wife visited Home Depot to see what was available. They decided on a tank that held 39 imperial gallons. It had two 3,000 watt elements to heat the water (using electricity). Don's wife noticed another customer looking at the same hot water tank, so she

asked his opinion. The man replied,

"This is a great tank. I'm replacing my old one after 15 years. It's been good. My wife and two girls always have lots of hot water."



When Don and I met for coffee the next Monday, he told me about their shopping experience. Don felt his wife's chance meeting of the man in the store was the deciding factor. She told Don on the way home,

"If four people have enough hot water using this tank, I'm happy with it. I'll leave all the details to you."

Don felt the first thing to do was to hire an electrician to see whether there would be any problem with the wiring. Sparky came in the next day, had a look around and didn't see an issue. There was ample space in the breaker panel to run an electrical cable to the new hot water tank.

Then Don hired a HVAC contractor to take out the old tank, seal off the gas piping, install the new tank and redo all the plumbing. With that in place, Sparky came in to finish the wiring. Within a day, everything was done and the new electric hot water tank was operational.

Sparky had a suggestion. If Don wanted to lower

his electrical costs, he should install an OFF-ON switch for the tank. This would enable it to be easily turned off during on-peak, high cost electricity hours and back on when the costs were low. Don readily agreed.



A year has now passed since Don replaced his hot water tank. We had lunch last Tuesday and I noticed Don looked rather pleased with himself. After our usual pleasantries, Don told me he had tallied up his costs for gas and electricity for the past year. Here is the substance of his thoughts, as near as I recall them.

"I must admit I was a little nervous about the financial aspects of my decision to switch to an electric hot water tank. Most people use a gas-fired tank, so I thought I might be in for a nasty surprise."

"Not so. At the end of twelve months of using the new hot water tank, I found my electricity costs totaled \$868. For the same twelve months last year, the comparable cost was \$818. It seems it cost me \$50 extra for electricity to heat the hot water in my new tank."

"Of course, this doesn't consider the reduced cost of natural gas during this same period. In the past year I spent \$820 for the cost of natural gas to

heat my home. In the previous year, the gas costs (including the hot water tank) amounted to \$1,020. My overall savings were \$200 for a twelve month period.

Who knew? Electricity costs for hot water heating can be cheaper than gas for smaller households of one or two people. Total costs for electricity and gas, year over year, resulted in a net savings of \$150.



As we discussed this further, it became clear Don had been very proactive. He and his wife were careful to turn off the power to their electric hot water tank during the on-peak, high cost hours and turn it on when electricity costs were lower.

They followed the same procedure with most other electric appliances. They did their laundry on the weekends during off-peak hours. They used oscillating fans to keep cool in the summer (and the air conditioner, when required in off-peak times).

Don had switches installed to turn off the power to TVs, printers, microwaves and the like (when they weren't in use). All in all, the sum total of these changes brought their costs to a net savings.

Don summed up with this comment.

"I'm pretty happy with my experience. I wanted

to try an electric hot water tank as an experiment to see if they were a viable alternative. I recall when they were the norm during my growing-up years in Toronto. They seemed to work so well, and look so tidy."

"So after two months, I proved to myself that the costs were reasonable and the water always hot. I think more people should consider this alternative. Electricity is, on the whole, quite inexpensive."



[Update August 14, 2020 – The argument for switching to electricity to heat your hot water is even more compelling given the new Federal Carbon tax which took effect in September 2019. It applies to gas-fired hot water tanks, but not to tanks heated with electricity.

The Carbon Tax started at \$20 per tonne, increased to \$30 per tonne on April 1, 2020 and is expected to increase \$10 a tonne each year until April 1, 2022. If your gas hot water tank is more than ten years old, it would be wise to replace it soon with one heated by electricity.]

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