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For more information on ITS heat pump, visit our website: www.itssolar.co.za

Save up to 75% of your water heating costs per month

Heat pump information sheet

History of a heat pump: Heat pumps have been around for a long time and have been extensively and very successfully used in commercial applications for many years. Some of the hostels at Stellenbosch University have used heat pumps for producing hot water for more than 25 years. The recent dramatic increases in electricity prices, with more to come, have generated great interest in alternative energy sources and the increased sales of heat pumps worldwide has brought down prices and made heat pumps a very viable option for the domestic market. Eskom have realized the saving potential of heat pumps and decided to provide rebates on ITS heat pumps.

How does it work? A heat pump works in the same manner as an air conditioner but in a reverse configuration. That is, instead of removing heat from your home and expelling hot air outside it absorbs heat from the air outside and uses this energy to heat water.

The modern domestic heat pump is a very efficient water heating device which uses a small amount of electricity to drive a compressor which forms the heart of the heat pump. The heat energy produced is as much as four times the electrical energy used to drive the compressor. This means that your electricity consumption for water heating can be divided by four (i.e. 75% saving).

The heat pump is not reliant on sunshine or direct radiation but extracts heat energy from the air at any time of the day or night and so is effectively a solar heater in a different form. Even in extremely cold conditions (-5C and lower) the heat pump can still provide a saving of more than 50%. In most cases in South Africa, where our daytime temperatures are relatively high, the efficiency is going to be at least 4 x that of an element heated water system. Even in the colder climates of Europe heat pumps are extensively used in domestic applications.

The heat pump looks similar to an air conditioner and can be installed either on the ground or on brackets on a wall. It is quiet and unobtrusive with a user friendly controller, has no greenhouse gas emissions and requires almost no maintenance.

Case study conducted by ITS Solar

In late 2009 a 4.7kw heat pump was installed to serve one of the 250L geysers in the Protea Hotel in Stellenbosch. Water and electricity meters were installed to monitor consumption over a six month period. Results indicated that the 4.7kw ITS heat pump produced a saving of 75% on electrical consumption compared with an element heated geyser of the same size. This related to a pay-back period on initial investment of 18 months, and over a five year period the accumulated saving on electricity costs would be in the region of R45000.

ITS integration technique: Maximum efficiencies achieved.

ITS have developed a patented integration technique that allows the installer to integrate our heat pumps with any existing geyser. This technique utilizes a loading valve and typically increases the hot water delivery capacity of the geyser by 15%. Most of the other integration techniques commonly used will cause a reduction in hot water delivery capacity of the geyser of up to 40%. It is also one of the only installation techniques that requires no interference with the existing geyser and therefore does not affect the guarantee of the existing geyser at all.

→ **South African Patent Application Number: ZA Pat Appl 2011/04587**

'We are therefore the only heat pump manufacturer who can guarantee that with our heat pump installations, you will achieve maximum performance from your geyser while saving up to 75% of your water heating bill per month!'

