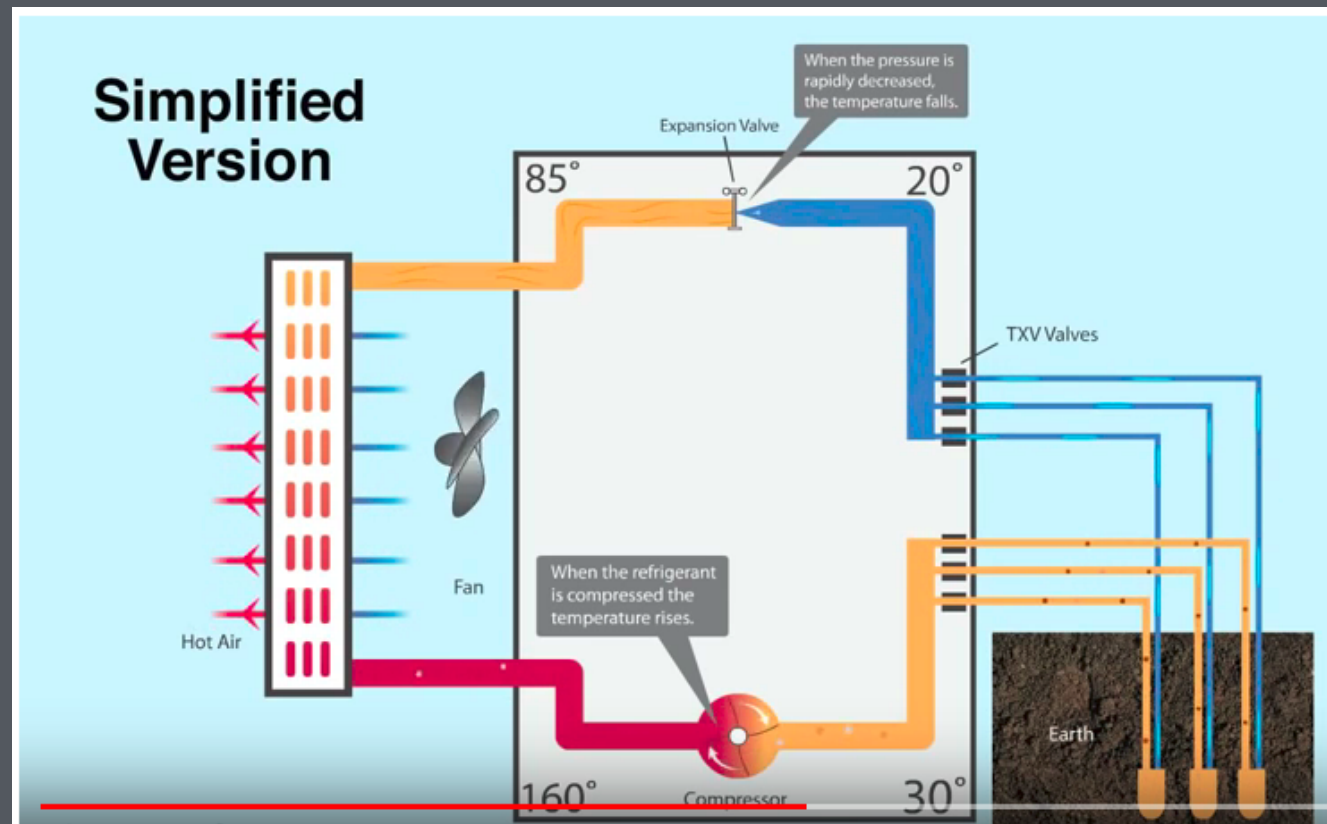


The Case for Thermal Recs(TREC) for Air Source Heat Pumps



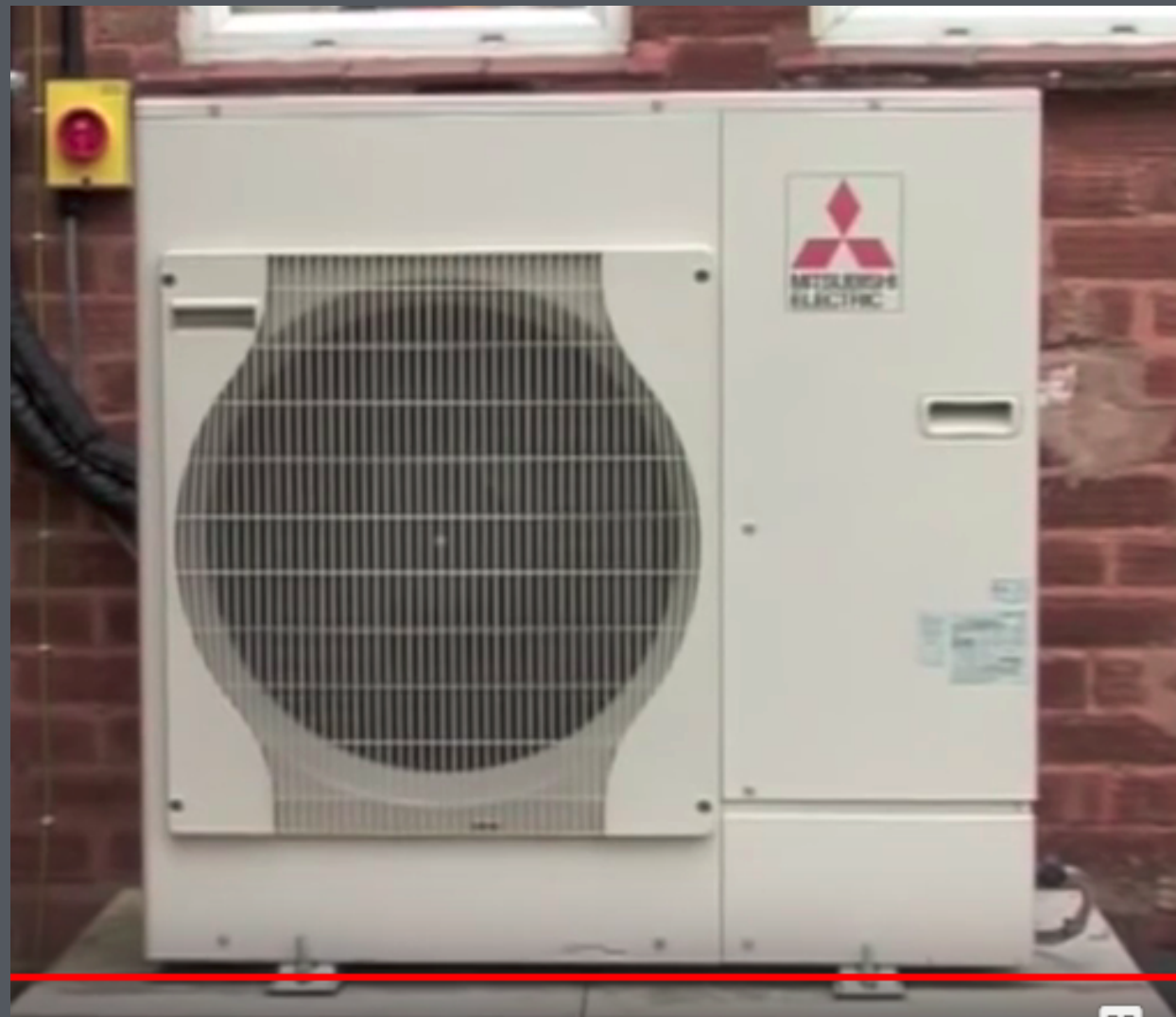
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We're all familiar with Geothermal or ground source heat pumps.



The machine draws heat from the ground or ground water and delivers energy amplified by using a refrigerant and a compressor. There's a fair amount of complexity in the engineering but the end result is hot water output that is easily measured and currently qualifies for recs (TRECS).

Not so common in the United States until recently is the air to water heat pump.



This machine uses energy in the “outside” air drawn across a coil again with a refrigerant and compressor to amplify the energy to produce hot water. Like a ground source heat pump this output is easily measured using a btu meter which makes thermal rec (TREC) recording possible.



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In addition to conventional heating, the air source heat pump shows dramatic results when used to capture and utilize waste heat.



Consider a common interior space that suffers from excess heat, a commercial laundry. A laundry both uses a great deal of hot water and produces a great deal of hot air through dryers making the space unpleasantly hot.

In addition to conventional heating the air source heat pump shows dramatic results when used to capture waste heat for repurposing.

In circumstances like this the air to water heat pump delivers three benefits.

- a. It captures waste heat and converts it to hot water at extremely low cost.
- b. The secondary output from the heat pump is cool air thereby air conditioning the laundry at the same time.
- c. Because of the availability of waste heat the cost to repurpose the energy is extremely low and the efficiency is extremely high, frequently exceeding a COP of 4.

These three benefits make the air-to-water heat pump a great strategy for dealing with waste heat and turning it into two valuable products at a very low cost.



We've run a two year test on a commercial facility with substantial daily solar gain and produced 700,000-900,000 btus of hot water per day placed in water storage for later use at an average cost of .03 per kilowatt hour to run the machine. The higher the ambient temperature the more efficient the machine becomes.

Because the output from the air to water heat pump is hot or cold water it should be treated exactly the same as a ground source (geothermal) heat pump and be granted thermal recs (TREC). BTU meters can easily track hot or cold water production with great accuracy.



The case for air to water heat pump recs (TRECS)?

Air source heat pumps were rare when the legislation was past. They are no more.

Ground source heat pumps output hot or cold water

Air source heat pumps output hot or cold water

Air source heat pumps show great flexibility beyond conventional heating and cooling.

