Energy Efficiency: Its import and impact?

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Federal regulations are driving the ever-increasing
energy efficiency of modern equipment. It is no longer possible to get inefficient (and simple, robust, tough, easy to service, and easy to maintain) equipment.

No more R22 systems:

Heating and cooling equipment using R22 is no longer being made and is unavailable. This means that all AC and heat pump units will use R410a and will operate at higher temperatures and pressures than R22 systems. This also means that once your R22 system fails, the only remedy available is the replacement of your old equipment with new units that use R410a. If your outside unit fails, we would have to replace both the outside and inside units. Please visit our page on heat pumps.

Computer chips and boards in all new equipment:

In order to meet federal efficiency targets, manufacturers have had to make their equipment much "smarter" by adding micro-processor chips and boards. These boards control the operation of the equipment's compressor, blower, burner, inducer, and valves to make sure the energy use is minimized. While these boards are really important they are also highly vulnerable to the poor power quality on Martha's Vineyard. Please visit our page on power quality.

Out with single speed compressors, in with variable speed and modulation:

Another way to meet federal regulations is by improving the match between building heating and cooling load and system output through the use of variable capacity compressors. There are many terms that all mean pretty much the same thing when it comes to modulating the flow of refrigerant: variable flow, variable speed, variable refrigerant volume, variable capacity, inverter drive, variable frequency drive, variable speed drive, and so on. Likewise, the flow of air is now becoming modulated to match the load with the system output.

Domestic hot water and the rise of heat pump water heaters:

Federal regulations also extend to the plumbing world. Standard 80 gallon electric water heaters (using the standard water heater elements) are no longer available for sale in the United States. Heat pump water heaters in the 80 gallon size are now the norm. They use a small compressor (using R134a refrigerant) and fan on the top of the water heater to heat the water. We have seen the refrigeration systems fail on several of these water heaters. Once that happens, the only remedy is to replace the entire unit.

Increased maintenance requirements:

All of the efforts above increase efficiency but also lead to the need for additional maintenance. For more information on the services we offer, please visit our pages on Annual and Preventative Maintenance

Martha's Vineyard – An All Electric Island:

All of these innovations have the tangible result of reducing the island's electricity use. While our year-round population is going up annually, we are installing more efficient equipment both in new homes and as replacements to existing equipment. This means that overall, we are getting more and more efficient with our equipment at the same time that new building codes are getting more stringent. This means smaller heating and cooling loads which means less energy use.

And all of this means that we will need less electricity from the wind turbines off Nomans Island – with a community or municipal power organization like Vineyard Power, we could sell more electricity to America because we will need less reducing the cost of the wind turbine project.

Our goal is to be **Martha's Vineyard's premier plumbing and HVAC outfit** – we appreciate the opportunity to discuss what ***energy saving equipment*** we can offer you for your home.