

# Energy Smart

## Hidden Cash Flow



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Did you know about the hidden cash flow within your facility?

I know all of you are worried about energy costs. What will happen next month, next year or over the next five years? With the cost of oil going from \$35 a barrel to a peak of over \$70 in less than three years, we should all be nervous.

Up until recently, most thought of electricity, propane or synthetic natural gas simply as necessary costs of doing business that couldn't be managed or controlled. Well, it's now time to take control of your energy cost — there are many conservation measures that can be done with little effect on your operation.

Two proven conservation measures that are leading the charge in combating rising energy bills are variable frequency drives and digital programmable thermostats.

## Slow Down!

Variable frequency drives (VFD) are digital systems that regulate the speed of equipment. VFDs have been around for many years, but until the reliability, costs and control methods were improved, they were not viable options for many building systems, except for specialized situations or the most avid

energy conservationist.

The mainstreaming of VFDs has brought more manufacturers into the market, and now almost every electronic or controls company has a line of VFDs: ABB, Danfoss, Rockwell, Yaskawa, Siemens, etc.

The abundance of manufacturers has driven the industry to improve product reliability and lower cost. This growth has expanded the range of VFD applications to almost every type of pump, fan or compressor that can be found on your property.

The third law of the pump and fan affinity laws basically asserts that, "for any reduction in flow or RPM, the required power drops by a cubic." OK, what does that mean? It means that rather than a one-to-one relationship, there is an exponential drop in required power. We have seen that a 50 percent reduction in motor RPM results in electricity savings of 80 percent! Believe me, that's good!

Think of how many pieces of equipment in your facility can be slowed down: air handling units, exhaust and supply fans, cooling towers, booster pumps, chilled water pumps, water feature pumps, etc. Think about the energy savings that can be achieved.

## Stop the Bleeding

Ask yourself, "On my last stay in a hotel room, did I turn off the air-conditioning system when I left the room?"

Most will answer "No," and I'm guilty too.

For hotels, 85 percent of guest room energy usage is connected to the air-conditioning system. Since a rented room is unoccupied 60 percent of the time, a lot of energy is used to cool

unoccupied spaces.

Hotels are increasingly turning to digital programmable thermostats to overcome this problem, taking control of room air-conditioning systems when guests are out of the rooms for long periods of time. Using sensors, door switches and intelligent controls, the program will determine when a guest has left the room and then adjust the temperature to an energy-efficient set point. When the guest returns, the settings are automatically restored to the guest's preference setting.

Because the air-conditioning system is not turned off when the room is unoccupied, the room remains comfortable to the guest while the hotel saves on its energy bill.

When a room is in an "unoccupied" mode for longer than 12 hours, it assumes that the room has not been rented and adjusts to a higher temperature set point. With some systems connected to the front desk, precooling of a room will start at the time of check in, so the room will be cool before the guest arrives at the room.

Generally, we are seeing energy savings of \$200 to \$300 per room per year as a result of raising the temperature set point when rooms are unoccupied. For a 500-room hotel, this can be as much as \$150,000 per year in energy savings.

The digital thermostat units also have features like wireless installations, shutting down when lanai doors are opened, lighting controls, humidity controls, in-room safe monitoring and minibar access notification.

Energy-efficiency programs will definitely give you more control of your energy costs. So go find the hidden cash flow in your facility!