



PROVIDING INNOVATIVE PRODUCTS AND SERVICES



ETS OFF-PEAK HEATING

What's Inside:

- Learn about Off-Peak Heating (ETS)
- Getting Started With an ETS Solution
- How It Works
- Choosing the Right System
- How We Save You Money
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Call us at: 701-483-5400

PROVIDING INNOVATIVE PRODUCTS AND SERVICES

Off-Peak Heating with Electric Thermal Storage (ETS)



Electric Thermal Storage (ETS) is the technology of converting off-peak electricity to heat and storing this low cost heat for use in satisfying comfort requirements of a home or business 24 hours a day.

An ETS system contains electric heating elements which lie within special, high-density ceramic bricks. These bricks are capable of storing vast amounts of heat for extended periods of time.

Power is cheaper when demand is low

Electricity is more expensive during certain times of the day when we use a lot of it due to operating dishwashers, washers and dryers, computers, blow dryers... it's a long list. A power company may refer to the hours when the demand for electricity and associated costs are high as on-peak hours. In the [commercial and industrial market](#), on-peak times may be when their electric consumption is at its peak.

Off-peak hours are the times of day or night when the power companies usually have excess energy supply due to low demand. In commercial and industrial applications, it is those hours when "demand free" power is available and generally when consumption within the facility is low. Some power companies offer reduced rates or substantial discounts on electricity consumed during off-peak times. These rates are called "off-peak rates."

During hours a power company deems as off-peak, the elements generate the heat that will be stored in the bricks of the [ETS Heating Systems](#). This stored heat is used to satisfy immediate heating requirements and to provide total comfort during peak hours.

Electric Thermal Storage Systems (ETS) are Highly-Efficient, Greener, and Utilize Off-peak Power to Lower Your Heating Costs

High efficiency [ETS systems](#) take advantage of off peak power discounts by storing power and converting to heat throughout the day. [Calculate savings](#), learn [how to choose the right system](#), or learn more about how commercial enterprises, homeowners, and even power companies can cut costs and increase revenue with our [commercial ETS furnaces](#) and [residential ETS furnaces](#).

Environmentally Friendly

Today, there is much emphasis being on energy efficiency, conservation, and preservation of our environment. Steffes ETS Heating Systems make the most efficient use of power generation, transmission and distribution. These innovative heating products allow for full utilization of power from renewable energy sources such as wind and solar. Steffes ETS heating systems are your green heating solution that brings benefit to consumers, power companies and our environment.

↳ [How ETS is a Green Heating Solution](#)

Get Started with An ETS Solution



Information For Power Companies

Steffes has a history of working with power companies in developing off-peak systems and strategies that lower overall power costs, reduce peak demand, and benefit all parties involved.

👉 [Learn More about Off-Peak for Power Companies](#)

How It Works

ETS Heating Systems

Steffes Electric Thermal Storage (ETS) systems are the alternative to high electricity bills and inefficient home heating systems. No matter how big your home or building or how cold the temperature outside, Steffes has the ideal ETS heating solution for your needs.

A room thermostat monitors room air temperature and regulates heat delivery as needed, providing comfort 24 hours a day. When the room thermostat calls for heat, the stored heat in the bricks is discharged into the area to satisfy the heating requirements. The amount of heat stored in the brick core of the heater equipment is regulated in relation to weather conditions.

- [Watch a Short Video on ETS Systems](#)
- [View Residential Systems](#)
- [View Commercial Systems](#)
- [How it saves you money](#)

Bottom Line - You Save Money

While you are sound asleep, your Steffes Heating System is working away – converting low cost, off-peak electricity to heat and storing it in its ceramic bricks. Unlike old-fashioned systems that don't have a heat storage feature, Steffes Off-Peak Heating Systems save you money because the heat being stored is purchased at a lower cost for release as needed throughout the day. It is these reduced rates that allow ETS to provide considerable savings to consumers on their energy bills as compared to alternative heating options.

👉 [Calculate your Savings with our Savings Calculator](#)

Check with your local power company to find out if off-peak, time-of-day (or time-of-use), demand based, smart metering, or other preferential rates are available to you.

More than just lowering your bills

- Safe form of heating
- Stable and predictable rates
- No need to remember to fill a tank
- Pay for consumption after using it
- No need for a carbon monoxide detector
- Requires no routine maintenance outside of changing air filters
- Clean and reliable
- No house chimney required

Choosing The Right System

Determining the model(s) or size(s) of ETS equipment needed for your application is just slightly different from sizing up conventional heating units.

It is important to accurately determine the size (and quantity) of units needed to satisfy your heating needs. Improper sizing (over or under) may have an adverse effect on system and installation cost as well as efficiency and comfort.

Your local dealer will assist you with this process and is able to more accurately determine which unit is correct for your space. [Contact Your Local Dealer Today!](#)

There are three basic steps in determining appropriate heater size:

STEP 1 Calculate the heating requirement (heat loss rate) for the area you intend to heat.

STEP 2 Determine the number of off-peak hours available (based on electric rate from your power supplier or your facilities load profile).

STEP 3 Select the model (unit) that will satisfy the heating requirement based on off-peak hours available.

Step 1: Calculate the Heating Requirement

Several factors impact the heat loss rate (or heating requirement) for an application. These include:

- Size of area to be heated
- Quality of construction - i.e., insulation value of walls, ceilings, windows, doors, etc., (usually referred to as R-Value or U-Value)
- Infiltration rate and/or fresh air requirements
- Indoor room temperature desired to be maintained
- Your local winter weather conditions

To most accurately size heating equipment and ensure total comfort even on coldest days of the year, a complete heat loss calculation must be completed. For a rough estimate, [short cut methods](#) many times are used.

[Contact Your Dealer to have an accurate heat loss calculation for your home!](#)

Step 2: Determining the Number of Off-Peak Hours Available

Contact your local power company to find out how many off-peak hours are available per day and what the times are. If you are a C&I account, your Facility Manager will review the power load profile of your building to determine the number of off-peak hours available during the typical day and what those times are.

Step 3: Selecting the Heater Model that will Satisfy the Heating Requirement Based on the Off-Peak Hours Available

Once the heating requirement has been determined and you know the number and duration of off-peak hours available to you, you can now determine the size of ETS equipment needed to satisfy your needs. Refer to [this table](#) for information on the heat loss amount each heater model can satisfy under a sampling of utility off-peak hour strategies.

Simply select the heater model that will satisfy your heating requirements based on the corresponding off-peak hours.

Dealers and distributors may [contact Steffes](#) for maximum heating abilities of the heaters under control strategies that may not be listed.

For commercial and industrial (C&I) applications, please also refer to the [ThermElect Sizing](#) page.

[View Residential ETS Units](#)

[View Commercial Systems](#)

[Contact Your Dealer](#)

How We Save You Money

Cost Savings of Electric Thermal Storage Units

Wouldn't it be great if you could save 40 to 70 percent on heating bills without forfeiting the comfort that comes with a well-heated building? With an ETS system from Steffes, these significant savings are possible.

The secret to the cost effectiveness of [ETS systems](#) is the ability to harness heat during off-peak billing hours for use during higher-priced peak billing hours. Thanks to the high-density ceramic bricks used in an ETS system, even during peak billing hours you will actually be paying non-peak billing prices for all your heating needs because the energy was stored during off-peak times. With ETS heating, you have the ability to satisfy all your heating requirements 24 hours a day using only off-peak electricity which results in considerable savings in your energy bills as compared to alternative heating options.

When interfacing an ETS furnace to a [heat pump](#) system, you can experience even greater savings and efficiencies. Using an ETS furnace as the supplemental and back-up heat to a heat pump, the heat pump is able to take advantage of the off-peak rate as well. In addition, with a Steffes furnace, a heat pump can be operated to very low temperatures capturing more of its efficiencies while still providing complete comfort. An ETS furnace and heat pump combination system can provide one of the most economical heating and cooling options available.

↳ [View Residential Systems](#)

↳ [View Commercial Systems](#)

Additional Benefits of ETS Systems

Beyond improved efficiency and avoiding peak billing times, ETS commercial heating systems save owners money by reducing demand charges, using lower cost energy and by minimizing maintenance fees.

Steffes integrates only the highest quality components into every ETS system we produce. The result is an incredibly reliable product that requires no routine maintenance, annual cleanings, certifications or servicing. Over the life of the unit (20+ years), this limited need for maintenance not only saves you money, but unnecessary headaches and discomfort.

Steffes products are designed for any climate and set the standards for the industry. Through many years and thousands of installations, Steffes products have proven to be safe, reliable heating systems.

To learn more about how electric thermal storage systems can help you with your energy and demand management program, [contact Steffes](#). A free program analysis is available to determine the value an off-peak heating program can specifically have for your power company.