



How does ETS heating work?

Electric Thermal Storage (ETS) is an electric home heating device that can help decrease your heating costs by storing heat when electricity costs are lower, and then releasing the heat throughout the day.

ETS heaters are 100% efficient units designed to provide low-cost heat, 24 hours a day. By using electricity during SIEA's Time-of-Use Program Off-Peak hours (those times during the day and night when usage is lower and electricity is cheaper), ETS units provide heat at lower costs than most other energy sources.



During Off-Peak hours, the ETS unit's heating elements convert electricity to heat which is stored in high-density ceramic bricks. The bricks are surrounded by high-efficiency insulation which allows them to hold great amounts of heat for long periods of time. A fan evenly and quietly distributes the heat to your home during higher cost, On-Peak hours and built-in thermostats allow you to easily maintain a desired temperature.

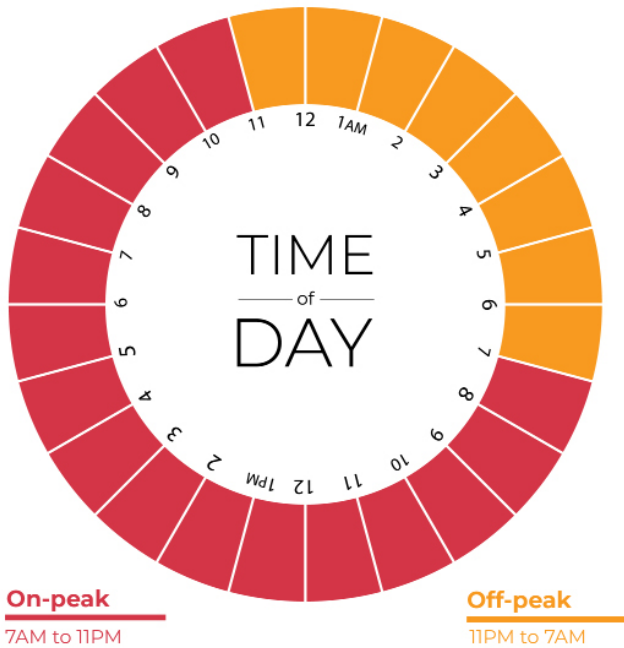
The system typically consists of two components: the ETS Heating unit and the Power Line Carrier (PLC) Transceiver. The PLC Transceiver controls the charge time and level of the ETS Heater automatically and is typically found near the SIEA electrical meter.



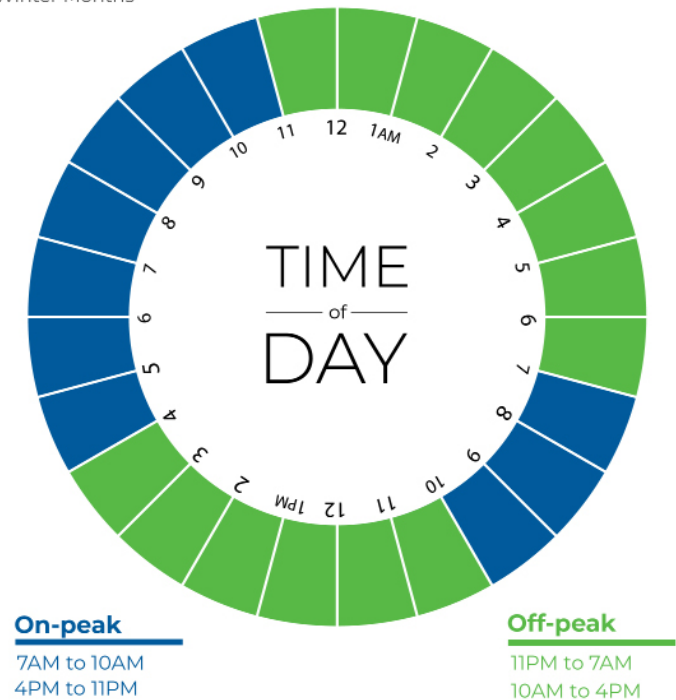


What is SIEA's Time-of-Use program?

MAY 1 - AUGUST 31
Summer Months



SEPTEMBER 1 - APRIL 30
Winter Months



Electricity is like a freeway. The more people use it, the bigger the infrastructure needs to be to support it. And a bigger infrastructure means bigger costs.

SIEA members can save money by spreading out our collective power use and decreasing periods of peak demand. To decrease this peak demand, SIEA's optional Time-of-Use rate charges members different rates for their power based on the time of use. Higher rates are charged during the On-Peak hours and lower rates are charged at all other times.

Residential Time-of-Use Program Summer Months (May 1 - August 31)

- On-peak hours: 7 a.m. to 11 p.m.
- Off-peak hours: 11 p.m. to 7 a.m.

Residential Time-of-Use Program Winter Months September 1 - April 30)

- On-peak hours: 7 a.m. to 10 a.m. and 4 p.m. to 11 p.m.
- Off-peak hours: 11 p.m. to 7 a.m. and 10 a.m. to 4 p.m.





Basic Operation

For the system to function correctly, both the ETS unit and the PLC Transceiver need to be powered. The PLC Transceiver will often be wired to a different circuit than the ETS heater and is often found near the electrical meter on the exterior of the building.

The three or four digit LED display found on each ETS unit shows specific operating information. In standard operation, these digits continuously display current room temperature and one of the following brick core operating modes:

C = Charge period or Off-Peak time

P = Peak period or On-Peak time

NOTE: 'P' and 'C' modes do not follow the Time-of-Use peak periods exactly, some lag has been purposely built into the schedule. Units will enter 'P' and 'C' mode on Sunday as well. This does not affect your billing and is simply the result of the built-in scheduling.

(M) Mode (EDIT) Button – Activates the editing menu for changing the operating information of the heater.

Up and Down Arrow Buttons – Increase or decrease room temperature set point. Also used to scroll up or down when viewing or changing the heater's operating functions.

The room temperature set point is adjusted by pressing the up arrow to increase, or the down arrow to decrease, the set point. When the heater senses a heat call, the variable speed blower is energized and circulates room air through the brick core. This air is heated and discharged into the room to maintain the desired temperature. To keep the room temperature constant, the blower automatically adjusts to the appropriate speed and may continue to operate after the set point has been reached.

With automatic charge control, the brick core charge level is regulated automatically in relation to outdoor temperature and the heating requirements. The outdoor sensor or PLC system monitors outdoor temperature and provides this information to the heater. The heater responds by storing heat in the brick core accordingly. No user interface is required to adjust the brick core charge level.



ROOM UNIT

The Room Unit (2100 Series) is ideal for any room in your home. It can be used as a supplement to another heating system or a direct replacement of electric baseboards or wood stoves.



COMFORT PLUS FORCED AIR FURNACE

The Comfort Plus Forced Air Furnace (4100 Series) can heat your entire home through a central duct system. The system can be interfaced with a heat pump for even greater efficiency.



COMFORT PLUS HYDRONIC FURNACE

The Comfort Plus Hydronic Furnace (5100 Series) will heat your entire home through in-floor, hydronic baseboard and/or forced air. The furnace can be equipped with a heat pump system for even greater efficiency.



Getting the most out of your ETS Heating

Your ETS system will automatically control most functions including charge time and amount of charge. To further reduce operating costs of your ETS system, you can control the room temperature set point. The set point can be decreased on the unit by pressing the down arrow. This can be done any time the room does not need to be heated to higher temperatures, like at night or when you leave the house for longer periods of time.

Ensuring that the heat produced by the ETS unit is moved around the space is important as well. A ceiling fan operating in up-draft mode can help to circulate air around a space ensuring more even heating and higher efficiency. Conversely, rooms that are not being used, and do not need to be heated to the same temperature as the rest of the space, can be isolated by closing the door, limiting the amount of heat that goes into that room.

Our Empower Team is available to discuss additional ways that you can reduce your energy costs and can be reached by calling SIEA at (800) 279-SIEA.

Basic Checks and Troubleshooting

If your ETS heating system is not working properly, there are several steps that can be

taken to correct the issue. Beyond these steps, it is advised that users contact a licensed electrician. First, verify that both your ETS units and PLC Transceiver (typically found near the SIEA meter) are powered on. These components are often on separate circuits, so ensure that both circuits are powered.

Sometimes turning the ETS heating units and PLC Transceiver off, then back on again to reboot, can help to fix an issue.

If the ETS heater unit displays anything other than 'P' or 'C' and the current temperature, the display is likely showing an error code. An electrician, Steffes technician, or Empower Team member may be able to use these codes to determine what the issue is and suggest a solution.

