

Air Source Heat Pump (ASHP)

One of the most efficient heating and cooling systems

In the summer, the ASHP operates like a conventional air conditioner by removing heat and humidity from your home. In the winter, it provides supplemental heat by transferring heat energy indoors from the outside air.

On the program, you pay only 7.85¢ per kWh (vs. 11.3¢) for all your air conditioning needs and only 5.85¢ per kWh (vs. 10.3¢) for all your heating needs.

How it works

In the summer

A radio receiver and meter installed on your house, most likely near your ASHP, utilizes a radio signal to communicate with your air source heat pump and track its usage. On days when demand for electricity peaks, a radio signal is sent to your ASHP telling the AC condenser to turn on and off.* Electric peaks typically occur on hot and humid summer days. However, other conditions such as, but not limited to, unplanned outages and system emergencies are possible.

When electric demand decreases, the ASHP automatically returns to regular cooling mode. Your ASHP fan will continue to run while the AC condenser is turned off.

**The number of controlled hours allowed per cooling season (May through October) is 200. In the past five years, we controlled between 80-160 hours per season.*

BILL DETAIL EXAMPLE

Electric Service

Days of Service	Reading Dates	Next Scheduled Reading
32	from: June 15, 2011 to: July 16, 2011	Approx. August 16, 2011

Meter	Current Read	Last Read	Usage
Electric KWH	88401 Est.	87252	1149
Electric KWH	2460	2210	250

Cost of Basic Service		\$9.50
Residential Energy Charge	1149.000KWH @ 0.1130000	129.84
Power Cost Adjustment		0.00
ASHP Energy Credit	250.000KWH @ -0.0345000	-8.63
Power Cost Adjustment		-0.00
MN State Tax		8.99

▶ **Total Cost for Electric Service (Actual Charges) \$139.70 (vs. \$148.92)**

ASHP energy credits are calculated by multiplying the number of kWhs used on the ASHP meter by 3.45¢ (the difference in the full summer rate of 11.3¢ and the ASHP rate of 7.85¢). The amount of the ASHP Energy Credit will be subtracted from your total electric bill.

Total energy credits will vary depending on your particular home and energy use.

Continued...



How it works continued...

In the winter

The ASHP is supplemented with a non-electric, alternate heat source for when the outside temperature drops below a set temperature. With the ASHP system, your supplemental heat source is also used during peak electrical demands.

While peak electrical demand periods generally occur on the coldest days of the year, other periods of control may be required. During these times, a signal is sent to the radio receiver to automatically switch to the supplemental heat source.

Typically the supplemental heat source is only used 2-12 hours per control time.* At the end of the control time, a second radio signal is sent to automatically switch heating back to the ASHP.

**The number of controlled hours allowed per heating season (October to May) is 400. In the past five years, we controlled between 80-160 hours per season.*

BILL DETAIL EXAMPLE			
Electric Service			
Days of Service	Reading Dates	Next Scheduled Reading	
32	from: December 15, 2011 to: January 16, 2012	Approx. February 16, 2012	
Meter	Current Read	Last Read	Usage
Electric KWH	88401 Est.	85902	2499
Electric KWH	2460	860	1600
Cost of Basic Service			\$9.50
Residential Energy Charge	2499.000KWH @ 0.1030000		257.40
Power Cost Adjustment			0.00
ASHP Energy Credit	1600.000KWH @ -0.044500		-71.20
Power Cost Adjustment			-0.00
MN State Tax			13.45
▶ Total Cost for Electric Service (Actual Charges)			\$209.15 (vs. \$285.25)

ASHP energy credits are calculated by multiplying the number of kWhs used for the ASHP by 4.45¢ (the difference in the full winter rate of 10.3¢ and the ASHP rate of 5.85¢ per kWh). The amount of the ASHP Energy Credit will be subtracted from your total electric bill.

Total energy credits will vary depending on your particular home and energy use.

Your savings

The number of kWhs used during the cooling or heating season is tracked and read monthly (the same way as your home general service meter). You will be able to monitor your savings on each billing statement where an *ASHP Energy Credit* is reflected.

How to sign-up

1. Ensure the alternate heat source is automatic, thermostat-controlled, and able to heat the home adequately for up to 400 hours. If in doubt, please contact your own heating contractor.
2. Contact Connexus Energy to schedule a date and time to pick up the required metering equipment. You will need to provide the following information:
 - Number of circuits to be used in the breaker panel
 - Number of amps per circuit
 - Identify any existing off-peak or demand response programs in the home

A one-time installation fee of \$50 will be added to your electric bill at the time of pick up.

Note: Depending on the installation, additional equipment (such as a sequencer box) may be required. Ask your contractor for details.

3. Have a **state electrical inspection** completed within 30 days of metering equipment installation.
4. Contact Connexus Energy at 763.323.2738 for **final inspection**. Energy credits will not be applied until final inspection is completed.



14601 Ramsey Boulevard
Ramsey, Minnesota 55303
connexusenergy.com
763.323.2650

Off-Peak General Terms

1. Off-peak meters and load management radio receivers must be mounted outside of the building, four-to-six feet above ground level (to the top of meter glass) and easily accessible to Connexus Energy personnel.
2. Connexus Energy shall not be responsible for the installation, operation, or maintenance of the off-peak system or related equipment. Connexus Energy will maintain and operate the load management radio receiver and associated off-peak electric meters.
3. The Connexus Energy customer shall arrange and pay for the installation, operation, and maintenance of the off-peak system or related equipment, to ensure correct operation according to Connexus Energy's specifications.
4. **Installation of the off-peak system must be completed within 30 days from the date the off-peak equipment was issued. Failure to complete the installation of the off-peak system within 30 days will result in the total cost of all associated off-peak equipment (including rebates or incentives) charged to the customer's electric bill with payment due immediately.**
5. In the event this agreement is terminated, the Connexus Energy customer must remove and return all off-peak meter(s), load management radio receiver, and associated off-peak equipment and pay any associated expenses. The Connexus Energy customer will not be allowed on the same off-peak program for a minimum period of one year from the date of termination.
6. Off-peak loads shall be separately metered and controlled and must be approved by Connexus Energy.
7. The Connexus Energy customer shall notify Connexus Energy when any off-peak loads, meter(s), load management radio receiver, or associated off-peak electrical equipment is damaged, changed, repaired, removed or added, or if any Connexus Energy seals are broken. Failure to notify Connexus Energy of any changes within 30 days may result in removal from the program.
8. Connexus Energy reserves the right to make changes to the control terms, in the event of utility system emergencies as determined by Connexus Energy.
9. **Installation fees are non-refundable.**

Connexus Energy shall not be responsible for any losses, damages, or claims arising from the installation, operation, maintenance, or function failure of the off-peak system.

