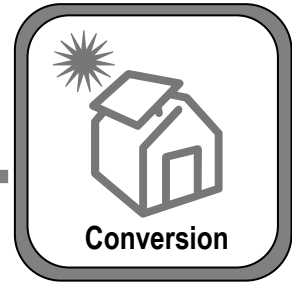


# 30-Year Heat Assistance Using Tankless Solar Systems

---



**Lead Organizations:** MaineHousing and Ascendant Energy Company

**Community Need:** Low-income households increasingly have to choose between heating and food in the face of rising energy prices. Last year, requests for emergency fuel assistance far exceeded LIHEAP (Low-Income Heating Assistance Program) funding levels to purchase fuel.

This project uses solar energy to generate ongoing heating assistance for the 30-year design life of the equipment for up to 50 residences.

**Project Activities:** Based on funding availability, the project will commence as soon as October 2008 with the intent of having all systems installed within the first half of the 2008-09 heating season. The following activities are planned:

1. Identify candidate households meeting heating assistance criteria in geographic proximity to the trained installer base (see #3).
2. Confirm suitability of home for mounting up to 64 square feet of collectors on a southerly wall and 4' x 3' for space heating apparatus on the opposite interior wall.
3. Instruct installers having basic carpentry skills on the 2-4 hour installation process.
4. Survey households on system operation and energy savings.

**Outcomes / Impact:** For each residence, the project anticipates two (2) 4'x8' solar hydronic (fluid) panels mounted vertically on a south facing wall to offset 100 gallons of #2 fuel oil in a single heating season in Maine (October through April). Where low-income residences are no more than 1000 square feet of living space with modest insulation (R-12), 400 gallons of oil are required to maintain a suitable room temperature.

The 25% energy generation realized by the solar system would save \$400 during the initial six-month heating season (assuming an oil price of \$4/gallon). Energy savings recur each heating season, and assuming a 5% annual increase in heating costs, the system would save \$26,575 over its 30-year life.

For the initial program, the installed system cost is budgeted at \$4000, although project partner Ascendant anticipates future costs as low as \$2500 as a result of manufacturing panels in Maine. With a planned budget of \$200,000, 50 systems would be installed to offset \$1,328,000 in emergency heating assistance over 30 years.

Assuming all of the systems are offsetting #2 fuel oil, each system will avoid approximately 1 ton of carbon dioxide emissions each year. All 50 systems together in the project will offset the same amount of carbon dioxide that is sequestered by 176 acres of hardwood trees.<sup>1</sup>

---

<sup>1</sup> Projected energy savings are based on models contained in RETScreen version 3.1 by Natural Resources Canada.

# 30-Year Heat Assistance Using Tankless Solar Systems

---



## **Total Project Budget:**

The overall budget for the project is \$200,000 for 50 systems, including installer training by Ascendant Energy. The budget for each system is as follows:

<u>Item</u>	<u>Cost</u>
Two 4'x8' Solar Panels	\$1,930
Pump Station & Controls	\$ 880
Space Heating Apparatus	\$ 650
2-Person Installation	\$ 500
Total	\$3,960

The system installation cost is \$198,000 for 50 systems plus \$2000 for installer training.

[Note: LIHEAP may contribute \$20,000 to the project based upon the anticipated fuel offset in Year 1 from all of the systems combined].

**Funds Requested from the Philanthropic Sector:** Based upon the ability of the LIHEAP program to contribute to the project, between \$180,000 and \$200,000 will be needed from the philanthropic sector.

**Ability to Target Funds:** To maintain projected installation costs, the initial 50 installation sites will be designated in southern Maine and the midcoast area.

**Accountability / Reporting:** Funds will be dispersed by MaineHousing based on the presentation of invoices by Ascendant Energy. Ascendant Energy will oversee procurement, assembly and installation of the solar systems.

## **Contact Information:**

Christopher Straka, *CEO*  
Ascendant Energy Company, Inc.,  
313 Main St., Ste. 204  
Rockland, ME, 04841  
207-594-6303  
[cstraka@ascendantenergy.com](mailto:cstraka@ascendantenergy.com)