



NorthWestern Energy USB 2003 Residential Solar Hot Water Demonstration Program

Please return this application and photos by **May 23, 2003**.

Residential Solar Hot Water Program
Contact: John Walden (1-866-723-8677)
National Center for Appropriate Technology
P.O. Box 3838
Butte, MT 59702

Name of Building Owner: _____
Owner Mailing Address: _____
City: _____ Zip Code: _____
Telephone number: _____
Email address (if available): _____

Is this address the same as the address for the proposed solar installation?
If no, what is the street address for the proposed installation?

1. What is the active NorthWestern Energy electric account number at the location of the proposed solar water-heating system? _____

Is your hot water heater natural gas or electric?

- 2. How many years has the current owner owned the building?
- 3. How many years has the current occupant lived in the home?
- 4. How many adults, as a rule, live in the house? How many children younger than 13?
- 5. On what story of the house or outbuilding will the array be mounted?
- 6. What is the roofing material? ___ asphalt shingles ___ wood shingles ___ tiles ___ metal ___ other (if other, please explain)

What is the approximate age of the roofing material that the proposed PV array will be mounted on?
0-5 yrs. ___ 6-10 yrs. ___ 11-15 yrs. ___ 16+ yrs. ____

7. Are the roof and rafters in good condition? Yes ___ If not, please describe the roof's condition.

Describe the construction of the roof including the rafter and sheeting materials, and the rafter spacing.

8. Will the solar collectors be visible from the streets near your home?

Yes ___ No ___

9. Are there obstacles (buildings, trees, power lines, utility poles, mountains, etc.) not shown in the site photos that could shade the solar collectors at some time in the future?

No ___ Yes ___ (if yes, please describe)

10. The system may require the installation of a second water tank. At a minimum, this tank will be 60 gallons: approximately 60 inches high and 20 inches in diameter. Do you have space for this tank in a heated space within 15 feet of your existing tank?

11. The ideal location for a solar hot water array is an un-shaded south-facing roof directly above a heated mechanical room. Describe your proposed location.

12. Additionally, to optimize system performance, the array should be tilted at approximately a 60° angle. If for visual or mechanical concerns you don't want this angle, what angle will your panels be tilted to? What is the slope of your roof?

13. How far is it from the proposed location of the solar array to your existing hot water tank?

- Describe the pathway that the pipes will follow from the solar collectors to the storage tank. Include all walls and roofs that they must pass through or be attached to. There will be two pipes, each approximately 3 inches in diameter, including insulation. In some cases the pipes must slope towards the hot water tank for their entire length. Also, the installation may require the construction of a chase, to enclose the pipes.

14. Are you willing to allow NCAT to collect data on the system's performance? This may involve mailing NCAT a data chip every 30 days.

15. Include photos that show the proposed installation location and a panorama of the view to the south. Also include photos of the mounting location. Please label orientation of all photos and indicate the proposed location of the solar array.

16. NCAT personnel will need to visit your home twice in the 12 months following the installation. Given reasonable notice, are you willing to agree to this?

