

*Rep Call
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Solar Products Manufacturing Infrastructure Overview

The Leech Lake Tribal Government (LL) & Rural Renewable Energy Alliance, Inc. (RREAL) have developed a joint venture to manufacture solar products on the Leech Lake Reservation and market them throughout the upper mid-west. The manufacturing facility will be located on the Leech Lake Indian Reservation in north central Minnesota near the community of Ball Club. An existing 10,000 square foot building will be renovated and its infrastructure upgraded. Total project costs exceed \$1 million, with infrastructure and renovation cost estimates of \$500,000. It is the infrastructure and associated construction upgrades we seek assistance for.

Both LL and RREAL have been working with Senator Klobuchar, Congressman Peterson and Congressman Oberstars office to explore federal funding assistance to help reduce the infrastructure costs associated with getting this project developed. The reservation has no tax base to support economic development activities and it relies on grant funding from federal and state sources to help offset economic development project costs. Unemployment on the reservation exceeds 30%, with underemployment levels of 70%. Recent downturns in the economy have significantly reduced revenue to the Tribal casinos, which are used to supplement social and economic development programs. LL is almost totally reliant on the tourism driven economy, which has suffered significantly, as people travel and spend less on entertainment, food and lodging.

In an effort to diversify the Tribal economy and create jobs, a joint venture has been created with RREAL to manufacture their patented Solar Power Furnace (SPF), to supply Indian Tribes throughout the upper mid-west. This is a significant market with a huge unmet need. It is expected that federal funding for low income households for heating and weatherization subsidies will increase substantially in future years, and this will help fuel the demand for renewable energy products. In Minnesota alone, approximately \$73 million is spent annually assisting low income households pay their heat bills, as 110,000 households qualify for energy assistance. With the exception of Tribes located near large metro areas, virtually all reservations in the mid-west have the majority of their residents living at, or below the federal poverty level. The market and demand for affordable renewable energy products will increase significantly in the future, as will federal energy subsidies; providing a stable market for products that address these needs.

Creating jobs and reducing poverty on the Leech Lake Reservation is the number one priority of the Tribal government. The Tribal leadership also realizes diversifying the local economy into non-gaming industries is key to creating sustainable jobs in the future. This project is of the highest priority for Leech Lake, not only because it will create jobs, but it also provides a needed service and product to its own residents, and contributes to the reduction in fossil based fuels and carbon emissions in the environment.

This project creates short term construction jobs, long term manufacturing jobs and will reduce poverty driven social costs on the reservation. \$500,000. in infrastructure subsidies will leverage another \$500,000. in other funding to develop this "green business". It is "shovel ready" upon securing funding for infrastructure/building rehab.

SPF System Packages

Solar Air Heat System #1		
1	Solar air heat collector SPF40	1400.00
8	1"x2" rectangular tubing	41.60
1	CFM AXC150A In-line fan	183.54
1	Line voltage thermostat	17.85
2	6" starter "A" collars	3.98
1	Snap disc w/high temp leads	32.90
2	6" backdraft dampers	54.82
10	High-temperature wire	2.80
2	6" High-temperature insulation	15.40
1	High-temperature caulking	9.50
SYSTEM 1 TOTAL		\$1,762.39

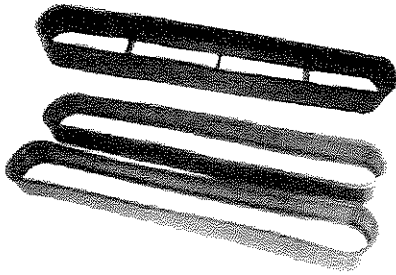
Solar Air Heat System #2		
2	Solar air heat collectors, SPF40	2800.00
16	1"x2" rectangular tubing	83.20
1	CFM AXC200A In-line fan	232.48
1	Line voltage thermostat	17.85
2	8" starter "A" collars	5.54
1	Snap disc w/high temp leads	32.90
2	High-temperature caulking	19.00
2	8" backdraft dampers	74.48
10	High-temperature wire	2.80
2	8" High-temperature insulation	15.40
2	Array Interconnect sets	82.56
SYSTEM 2 TOTAL		\$3,366.21

Solar Air Heat System #3		
3	Solar air heat collectors, SPF32	3450.00
24	1"x2" rectangular tubing	124.80
1	CFM AXC200A In-line fan	232.48
1	Line voltage thermostat	17.85
2	8" starter "A" collars	5.54
1	Snap disc w/high temp leads	32.90
2	8" backdraft dampers	74.48
10	High-temperature wire	2.80
2	8" High-temperature insulation	15.40
2	High-temperature caulking	19.00
4	Array Interconnect sets	165.12
SYSTEM 3 TOTAL		\$4,140.37

Solar Air Heat System #4		
3	Solar air heat collectors, SPF26	3000.00
24	1"x2" rectangular tubing	124.80
1	CFM AXC200A In-line fan	232.48
1	Line voltage thermostat	17.85
2	8" starter "A" collars	5.54
1	Snap disc w/high temp leads	32.90
10	8" ducting	46.34
2	8" backdraft dampers	74.48
10	High-temperature wire	2.80
2	8" High-temperature insulation	15.40
2	High-temperature caulking	19.00
4	Array Interconnect sets	165.12
SYSTEM 4 TOTAL		\$3,736.71

This is not a complete package. Individual system configurations may require additional materials from RREAL, or materials available at most hardware stores including ducting and fasteners.

Solar Air Heat Installation Materials



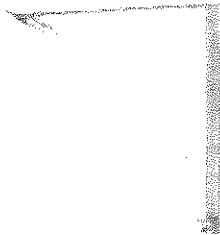
EPDM Array Interconnect
 Set (2 receivers, 1 stint)- \$41.25
 Per Stint- \$20.62
 Per Receiver- \$13.75



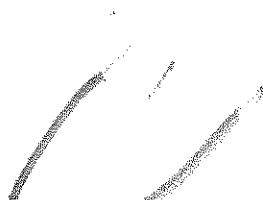
Backdraft Damper. Fits inside standard ducting sizes.
 6" \$27.41
 8" \$37.24



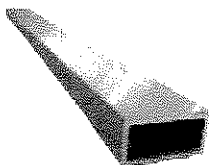
High Temperature Duct Insulation.
 \$7.70 per foot



White Filtered Return Air Grill
 Standard furnace air filter fits inside.
 18"x 24" \$37.84



High Temperature Wire.
 \$.28 per foot



Rectangular Aluminum Tubing for Mounting.
 \$ 5.20 per foot



High Temperature Caulk
 \$9.50



CFM In-line Fan With Mounting Brackets. AC Power.
 AXC150A \$183.54
 AXC200A \$232.48



110°/90° Bi-metal Snap Disc With High Temperature Leads
 \$32.90



Ducting Starter Collar
 6" \$2.00
 8" \$2.77



Line Voltage Thermostat.
 \$17.85

Prices subject to change without notice.

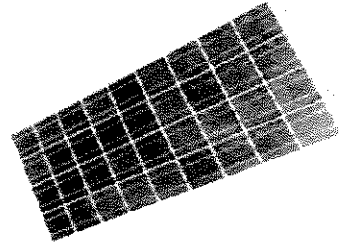
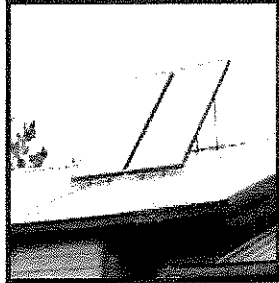
Various tools are required for installation.

Other more easily available materials will be needed for installation such as lag bolts and ducting.

An electrician is required for installation of thermostat, snap disc and fan.

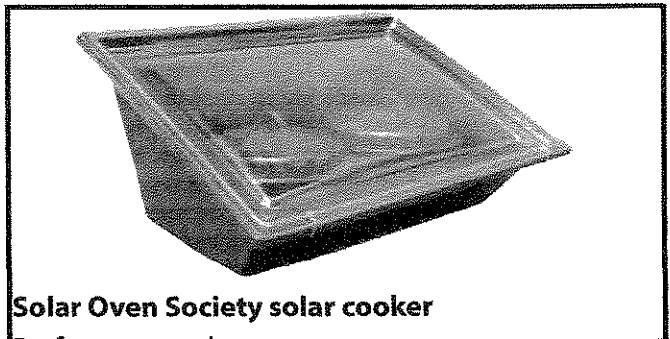
Solar Electric, Hot Water, and Cooking

RREAL designs custom electric and hot water systems based on the structure, budget, and output needs of the clients. **The following systems are samples, and do not include installation or shipping costs.** Any part or component needed for a solar electric or hot water system that is not listed is most likely available to us through our distributors. Please call for a quote, consultation, or site visit.

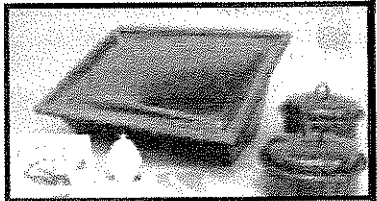


Solar Skies Solar Water Heat System		
2	4'X8' SS-32 Solar water heat collectors	1,746.00
48	1"X1" Square collector mounting strut	165.20
1	Standard mounting hardware	41.30
1	80 gallon solar storage tank w/ external wrap heat exchanger	1330.00
1	10 Gallon drainback reservoir	453.60
2	Tank support bracket	22.09
1	Tank top w/ unions, mixing valve, bypass valves, thermometer	420.00
1	Solar control w/ differential & high limit, power cord & outlet, w/ 2 sensors	224.00
1	Bolt-on sensor, 10,000 ohm	33.49
1	1/2" Hex plug sensor, 10,000 ohm	24.82
40	Sensor wire, 18GA, 2-wire, shielded	10.08
1	UP 26-99F Grundfos pump 1/6 HP	330.88
1	Pump flange set, 3/4" NPT, cast iron	9.10
2	Watts 3/4" full port ball valve	16.18
2	Watts 3/4" boiler drain - male	20.16
1	3/4" 75psi pressure relief valve	61.31
10	NoBurst anti-freeze, non-toxic	163.80
4	Union, 1" CXC	67.20
1	Watts 3/4" Flow-Check	65.06
48	7/8"X1/2" AP Armaflex insulation	45.69
System Total		\$5,250.00

Kyocera 1560 watt Grid-Tied PV System		
12	KC130GT panels and SMA SB1800U inverter	12,731.00
	Racking system	1,200.00
	Miscellaneous mounting and wiring parts	800.00
System Total		\$14,731.00



Solar Oven Society solar cooker	
Performance solar cooker with all the shown accessories.	
Cooker	\$124.00
Reflector	\$32.00 (recommended)



To Order:
 Call RREAL at (218)- 587-4753
 Or email a product order to: info@rreal.org
 Or mail a product order to: RREAL
 2330 Dancing Wind Road SW. Suite 2
 Pine River, MN 56474
 Additional charges for credit card orders may apply