

Wood Pellets for Heat and Profit: The Sunny Slope Gardens Inc. Wood Pellet Stoves

FACT SHEET



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Fuel costs can mount up for greenhouse operations during the cold months of the year. Tender young plants require consistent warmth to grow and thrive. Wisconsin growers are beginning to find innovative ways to keep their greenhouses warm in the face of rising costs for the fossil fuels they have traditionally relied upon.

Sunny Slope Gardens Inc. is a commercial greenhouse located in New Berlin, Wisconsin. Owner Steve Schutz recently turned to Wisconsin's forest resources for his heat. Sunny Slope Gardens now boasts six Breckwell Big E stoves that will use wood pellets to provide heat for his greenhouses during the cold months. Schutz's operation grows poinsettias from August to January and spring annuals and perennials from January through March.

When the weather warms and the need for space heating decreases after March 1, Schutz transplants the annuals and perennials to Quonset hoop houses for finishing before they are sold to customers in May. Although he previously used only natural gas, Schutz noted that "wood pellets are now providing about 80 percent of my fuel, and it's a moist heat which is great for the plants." He uses the wood heat to maintain the temperature at about 52 degrees Fahrenheit, and tops it off with natural gas to raise the temperature up to 62 degrees. He needs to maintain at least 60 degrees to avoid disease in his seedlings and young



PHOTOS COURTESY ENERGY CENTER OF WISCONSIN

These pellet stoves fit easily into Sunny Slope Gardens' greenhouse setting, and the top-loaded hopper makes refueling easy.

plants. The six pellet stoves also provide a reliable source of backup heat should there be an interruption of natural gas service, which could be devastating to a facility such as Sunny Slope Gardens.

The six Breckwell Big E pellet stoves were purchased from Kowalske's Hot Spot in nearby Big Bend, Wisconsin. The stoves have a maximum heat output of 55,000 BTU per hour and will be fueled by wood pellets, which are also supplied and delivered by Kowalske's Hot Spot. The pellet stoves will burn approximately 25 tons of wood pellets per year and generate approximately 4,320 therms per year, enough to heat about 4.5 Wisconsin homes and prevent over 25 tons of carbon dioxide from entering the atmosphere each year. The total cost of the six stoves was approximately \$10,300, with Focus on Energy providing an Implementation Grant of \$2,451 and the balance coming from Sunny Slope Gardens.






There is some additional labor required to load the wood pellets into the hoppers that feed the stoves because each stove needs about two bags of pellets per day. In addition, the stoves need to be cleaned about once a week. Schutz has also discovered that buying wood pellets in May when the price is lowest will help contain costs, but will require him to implement a creative storage strategy. He plans to store the pellets in unused hoop houses during the summer. However, Steve Schutz thinks these extra efforts are worth it, particularly given the significant

increases in natural gas prices and the estimated three to four year payback for the project. As an environmentalist and farmer, Schutz also recognizes the ecological benefits derived from switching to a renewable resource for his heating needs. He further notes that when he makes his final evening rounds in his greenhouses, he can see the warm, red glow from the pellet stoves, making the atmosphere feel friendlier. He says it makes him feel more connected to what he is growing.



<h2>Project Facts</h2>	
	<h3>Sunny Slope Gardens Wood Pellet Stoves</h3> <p>Date Completed: November 2005</p>
<h3>Personnel</h3>	<p>Owner: Sunny Slope Gardens Inc. System Contractor/Installer: Kowalske's Hot Spot, Big Bend, WI</p>
<h3>Building and Site</h3>	<p>Location: New Berlin, WI Site description: A commercial greenhouse with about 4,000 square feet of growing area for crop production, with additional Quonset hoop houses for crop finishing.</p>
<h3>Equipment</h3>	<p>RENEWABLE ENERGY TECHNOLOGY: Six wood pellet burning stoves: These pellet stoves provide the majority of thermal energy requirements from October through February and also provide a reliable back-up system in case of a service interruption.</p> <p>MODEL: Big E Utility Furnaces (pellet stoves), Model SP1000 PB MANUFACTURER: Breckwell Hearth Products at www.breckwell.com</p>
<h3>Equipment Costs and Benefits</h3>	<p>ECONOMIC COSTS AND BENEFITS:</p> <ul style="list-style-type: none">■ Total installed cost: \$10,300■ Grant from Focus on Energy: \$2,451 <p>FOSSIL FUEL COST REDUCTION: Approximately \$4,300 annually (at 2004 natural gas rates)</p> <p>ENERGY AND ENVIRONMENTAL BENEFITS: BTU production/year: 4,320 Therms/year Percentage of load offset: 80% from October through February Natural gas savings: equivalent to 4.5 homes</p>