American Solar Validates Economic Solar Heating for Poultry Houses under USDA Research Grant

Annandale, VA, January 2, 2017—American Solar, Inc. completed solar heating research, which validates the energy savings from solar heat recovery from roofs and walls for poultry house.

The USDA awarded American Solar a Small Business Innovative Research Grant (SBIR) to demonstrate and predict practical recovery of solar heat from roofs and sidewalls of poultry houses. ASI conducted the SBIR-funded testing at the USDA Beltsville Agricultural Research Center (BARC) and the University of Maryland Eastern Shore (UMES).

The system at UMES demonstrated the heat recovery from a poultry house attic using a thermostatically controlled fan to recovery solar heated air from below the metal roof of the poultry house. The ASI team correlated the system's energy delivery to local solar and weather conditions.

The system at BARC demonstrated a solar sidewall curtain that preheats outdoor air before it enters the poultry house. The testing determined the amount of heat energy recovered and correlated the energy delivery to local solar and weather conditions.

Both systems can provide preheated fresh air to poultry houses at much lower cost than by heating with propane, LPG, or fuel oil. The goal of both tests was to validate the economics and to provide a predictive algorithm, which can establish expected energy savings from reduced fuel use, for any of the 70,000 commercial poultry houses, at any location across the US.

Analysis of the extensive data collected, with over 200,000 temperature, solar, and weather conditions, resulted in predictive algorithms for solar heating performance. American Solar can use the algorithms to reliably predict solar heat delivery, fuel savings, and reduced energy costs for roof or sidewall solar heating systems for any poultry house in the US.

About American Solar, Inc.
American Solar provides project development, consulting services and technical advice for solar-thermal projects in the agricultural, commercial, industrial, and government markets. The company develops projects for its patent-protected solar air-heating technologies. ASI also conducts research and testing of solar air-heating and low temperature air-heat-recovery systems.

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