SUN Solar-Condensing Gas Hybrid Combination System for NYSERDA Energy Star

The New York State Energy Research and Development Authority's (NYSERDA) Research and Development (R&D) group, the Gas Technology Institute (GTI), Solar Usage Now (SUN) and a hydonic air handler manufacturer are making available to a participating builder in NYSERDA's New York ENERGY STAR Homes Program, a Hybrid Solar-Gas Condensing combination space and water heating system (Table 1), including related technical documentation, technical phone support, one year of data collection, data analysis, and reporting. In exchange, the Builder would be required to cover the cost of installing the combination system equipment and the data acquisition package. The builder will also be responsible for the costs associated with the removal of the data acquisition package at the end of the data collection period (one year). The combination system must also be operational, and the site occupied, prior to the 2012-2013 heating season. The value of the combo equipment provided is estimated to be $13,157.

Table 1 SUN Combo Package Provided Equipment

Equipment	*Quantity*	*Value*
Evacuated Tube Collector	2	$11,957
Frame Kit	2	
Maxi Tank with Pump Package	1	
Tankless Water heater	1	
Watts Controller	1	
Hydronic Air Handler	1	$1,200
		$13,157

As part of the data acquisition package, the Builder will be responsible for installing the meters and fittings for sensors during the hybrid solar-gas combo installation. The meters and sensors along with a data logger, wireless communication, technical documentation, diagrams, and manufacturer support will be provided. Installation time for the meters and fittings is approximated at two hours. GTI will install the sensors in the fittings and commission the data acquisition system once the Builder installation has passed code inspection. The Builder will be responsible for capping the fittings, and removing and returning the data acquisition equipment to GTI after the test period. Decommissioning time is approximated at two hours. The value of the data collection, analysis, and reporting is estimated at $20,000.

Performance metrics will be summarized monthly by GTI during the one year test period. Prior to the test period, GTI will require assistance from the Builder to collect site information that characterizes and establish a baseline performance model. That may include general information on the building structure, and any available information on internal loads and schedules.

The Builder is responsible for the installation cost only, of the GTI supplied equipment listed in Tables 1, and data acquisition meters.

The Builder is responsible for the purchase of, and incidentals related to, the installation of the following:

- Expansion tank,
- 30 psi relief valve,

- Backflow pressure reducer,
- Copper elbows, couplings, sensor fittings, rigid and soft copper lines
- Electrical hookup
- HydroBloc pump and control system for heating
- AC coil for air conditioning

In addition, the Builder is responsible for all costs associated with obtaining permits, and will be required to provide site information to GTI.

To be considered for this initiative, the Builder must commit to the following:

- That the equipment be installed as per local code requirements.
- That the installing contractor be licensed and bonded in the State of New York.
- That the installation be operational and in use for the 2012-2013 heating season.
- That the site owner enters into an agreement during the one-year test period.
- That the builder removes and returns the data acquisition equipment to GTI after the test period.

Builders who want additional information or who are interested in participating in this initiative, should contact:

Tim Kingston
Project Manager
Gas Technology Institute
1700 South Mount Prospect Road
DesPlaines, Il 60018-1804
T: 847.768.0936
F: 847.768.0916
tim.kingston@gastechnology.org

For more information about the Gas Technology Institute, please visit our website: www.gastechnology.org