

**Public Workshop on the Development of the Cap-and-Trade Auction
Proceeds Investment Plan
Energy Conservation/Efficiency:
Funding Demonstration Projects for the Use of Advanced Solar Thermal
Technologies in New Heating and Cooling Applications**

ergSol respectfully provides comments on the development of an investment plan for the auction proceeds from the Cap-and-Trade program to reduce greenhouse gases (GHGs). We applaud the California Air Resources Board for initiating this public forum for input during the development process.

The Technology: The California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) estimated that space, process, water heating and cooling in the commercial, residential, and industrial sectors represent approximately 27% of California's total GHG emissions or 125 MMTCO₂e emissions annually. The Economic and Technology Advancement Advisory Committee (ETAAC) report found that advanced solar thermal (AST) alone could achieve in excess of 20 MMTCO₂e reductions annually. The National Renewable Energy Laboratory estimates that 65% of residential and 75% of commercial buildings in California could be outfitted with solar collectors for hot water systems and AST systems. The estimated breakdown of delivered water heating energy use in the residential and commercial sectors in California is estimated at 286 Trillion BTUs.

Currently, California has only a small distributed solar water heating industry, due in part, to the lack of available funding for demonstration projects. The potential for major expansion of advanced solar thermal technology is huge. Cooling buildings and other industrial applications using solar thermal is especially advantageous in California. Summertime cooling loads make up a substantial portion of the total peak demand; the residential and commercial cooling accounts for approximately 30% of the peak load. Much of this load could be displaced by solar thermal. Despite the potential, only a few AST systems currently exist in California.

Our California-based enterprise is a manufacturer and project developer of high-temperature solar thermal systems which utilize evacuated tube collectors. These robust, high-performance systems are scalable for a wide variety of building end-uses and energy needs, such as food and beverage; pharmaceutical; agriculture (dairy, poultry); hospitals; hotels, multi-family buildings; wineries, restaurants; and for desalination. Localized solar-generated thermal energy can be applied to domestic water heating, space heating, cooling (air conditioning), and process heat, such as boiler feed water, pre-heating, washing, drying, pasteurizing, sterilizing, and galvanizing, etc. The technology is appropriate for new construction and retrofits and is commonly used in Europe.



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Funding for demonstration projects is currently needed to prove the technical and economic validity of advanced applications of solar thermal systems and provide quantifiable, objective data for decision makers before this technology becomes widespread in the US.

ergSol has several demonstration projects using our evacuated tube collector systems ready for demonstration with private and public sector partners. These include process heat for boiler feed water, process heat for drying, heating and cooling projects with 100 ton and 10 ton cooling load. For these four projects, the total combined CO2 reduction is 1,461,589 lbs/year, which is equivalent to avoiding the carbon dioxide emissions of 195 passenger vehicles per year.

The funding gap for these types of AST projects exists because they do not fit neatly into the portfolio of the CPUC, the CEC, the US Small Business Administration or venture capital investors. Project proponents, especially colleges and municipalities, are cash strapped and need to pay for the project out of energy savings. We are a small company and cannot implement demonstration projects without funding.

Providing a funding pool to demonstrate AST-type projects will provide significant environmental and economic benefits for people in California, including significant GHG emission reductions, accelerated compliance with the State's energy and building policies, and job creation.

ergSol is ready to collaborate with the Air Resources Board to provide cost-effective options for energy efficiency, conservation, and sustainability.

Thank you for your consideration.

Sincerely,

Monika Weiss