



Solar Direct-TCT Q & A on Azteca Project

Q. What does "Azteca" stand for?

A. Azteca is a code-name, not a product name. Azteca refers to the Indian Aztec culture's focus on the sun.

Like all solar water heaters, Azteca relies on the natural energy from the sun to heat water, not electricity traditionally produced from fossil fuels.

Q. How is the Azteca concept new and different?

A. Aside from Azteca, virtually all SWH systems sell as stand-alone devices. Most of the components required for commercial use, including a backup system and metering, are add-ons. A commercial buyer would have to not only research these add-on components but trust that the components would work well and be compatible with each other. With Azteca we are doing that research for our customers, offering a proven, tested system that will service their business' hot water heating needs.

Q. What is the size of the Solar Water Heating (SWH) market today? Is this a high-growth industry?

A. While over 1 Million buildings in the US support SWH, solar water heating is estimated to represent only 2.5% of the total installed residential water heating use. Industry figures are difficult to get for commercial use, however, it is estimated to also be quite low.

This means there is tremendous upside growth potential, particularly in new construction where the economics of SWH are compelling. It is estimated¹ that the national replacement market for existing gas and electric water heaters is 6 to 9 million units per year. At an average

¹ Hoffman, Wells and Guiney, Renewable Energy Policy Project Report, August 1998



selling price of \$1000², that represents over a \$6 Bn/year market opportunity.

Significantly, in countries under the Kyoto Protocol (where there is a commitment to reduce Greenhouse Gas Emissions, i.e. CO₂) use of SWH is on the rise: China and India are the largest growing markets for SWH.

Q. What environmental impact can replacing electrical and gas water heaters with solar water heaters have?

Most people are unaware that the typical family water heater in their home emits twice as much polluting carbon dioxide, CO₂, (two tons per year) as their car (one ton per year).

When SWH systems displace fossil fuels, they reduce other ambient air pollutants as well including oxides of nitrogen, carbon monoxide and often sulfur dioxide as well as volatile organic compounds.

A recent study supported by the United States Environmental Protection Agency found that SWH was among the most cost-effective ways to reduce CO₂, CO and NO_x in Mexico City residences and businesses (West, et al 2003. Co-control of Urban Air Pollutants and Greenhouse Gases in Mexico City. Mexico, DF, Instituto Nacional de Ecologia.)

Q. What commercial businesses is the Azteca SWH solution ideal for?

- A. First are Utilities. SWH offers many benefits including:
- (1) Reducing (the more expensive) peak demand level among electricity user.
 - (2) Metered SWH systems and their measured energy can be offered as a for-profit green energy product and
 - (3) Allows a utility to demonstrate good environmental stewardship.

² This is very conservative as \$1000 represents an extremely low ASP.

Relevant to point (1) above, the Union of Concerned Scientists found in a study that SWH's are capable of serving commercial establishments and saving a distribution utility substantial costs in foregone grid upgrades to serve electric water heater loads (UCS, 1995)

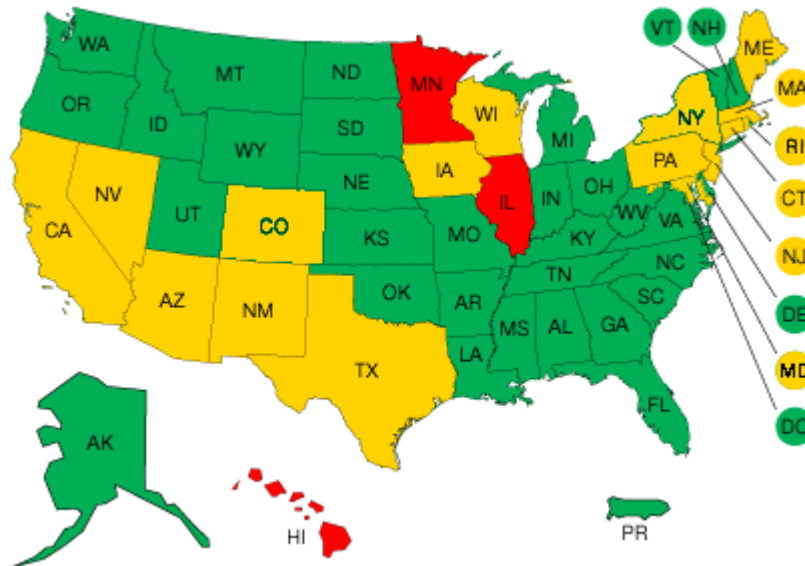
B. Hot-water intensive users include hospitality (hotels and restaurants), food processing, agriculture, and industrial cleaning (eg. Aircraft cleaning).

Q. What brought about the partnership between Solar Direct and TCT Solar? How long the two companies have been discussing the Azteca solution and what motivated it?

A. Solar Direct and TCT Solar began discussing Azteca about 18 months ago. With the rising cost of fossil fuel based energy, we realized the commercial, heavy users of heated water were coming under increased pressure from energy costs. Several market forces seemed to be coming into alignment –

- Increasing state subsidies and tax incentives for adopting renewable energy, associated with the adoption by 19 states of Renewable Energy Portfolio Standards (RPS)

Renewable Portfolio Standard (RPS) Map



■- States that have an RPS.

■- States that have voluntary renewable energy goals or RPS-type legislation without enforcement provisions.

■- States that do not have RPS or renewable energy goal policies.

Three states (Hawaii, Illinois, Minnesota) have voluntary renewable energy goals or RPS-type legislation without enforcement provisions.

Source: Find latest RPS map at
<http://www.dsireusa.org>

- The increasing acceptance of green building practices for new construction (with counties like Miami Dade now offering considerable incentives for businesses which add on solar equipment as part of their new “green building” ordinance)
- More recently, President Bush’s signing of the Energy Bill, starting Dec 31, 2005, offering a 30% tax incentive for both home and commercial users. Significantly, the commercial subsidy has no cap.

Q. What have the key barriers been for the commercial proliferation of solar installations?

A. One of the key barriers to adoption has been the upfront capitalization of the equipment – The new Federal Energy Bill and state incentives solve that. Creative positive cash flow financing and lease plans, where savings exceed monthly payments, will greatly stimulate this market segment.

Q. What led to the conception of the plan by Solar Direct and TCT Solar?

A. In 2003-2004, Solar Direct and TCT Solar collaborated on the US Embassy project in Abuja, Nigeria – a facility using 3000 GPD (gallons per day) within a 90,000 sq ft building. This project proved so successful that both companies believed they could extend the knowledge of large SWH projects learned through

this and other projects to provide large-scale SWH systems for wider use.

Q. Who's responsible for the idea behind "Azteca" and what's the basic concept?

A. Azteca is the brainchild of Solar Direct and TCT Solar's joint discussions of how to foster commercial adoption of solar water heating. Before Azteca, key market barriers to adoption have been project financing and the availability of a robust, commercial "all you need" packages.

Azteca offers a proven product technology combined with "ready to go" financing and leasing options. The package includes an integrated meter allowing a commercial customer or utility to include the system output into their billing system as well as account for solar-based kilowatt-hours and, indirectly through that, the potential for continued future project financing through participation in the growing market for solar tradable renewable energy credits (TREC's). We have also adopted a strong customer service commitment so commercial buyers who can have confidence that their maintenance and operating costs will stay low.

Q. What is the status of the "Azteca" program today and when will it be readily available?

A. Currently we are working with some select potential customers. We are seeking a limited number of additional prospects to fully understand their complete commercial system requirements and identify the best core system components (e.g. Meters, backup systems, PV energy source) to integrate with the ProgressivTube package. Over the next few months, we will be enlisting 2 - 4 pilot projects with whom we will work in-depth to meet their requirements.

Q. Where can I find out more information about "Azteca"? i.e.: pricing, availability, etc.?



A. Today, interested commercial users should contact Solar Direct to discuss their commercial needs. We will be designing a limited number of Azteca installations in the last quarter of 2005 with a full program roll-out to begin in the first half of 2006.

Q. What is size of each company in revenue? Number of employees?

A. Both Solar Direct and TCT Solar are privately held and do not disclose specific financials. However, combined, the two companies are achieving nearly \$10 M/year in gross revenue with a combined base of 32 employees. Both companies are projecting growth of 20-25% for 2005 CY.

Both companies have a much larger "extended virtual" presence than meets the eye. For instance, TCT Solar supports 75 distributors worldwide. Solar Direct hosts one of the fastest growing Energy product Super Malls on the internet with over 1000 unique web visitors per day.