Solar Direct

Solutions that make life green!

Solar Direct Business Plan

July 2006

Energy SuperMarket, LLC
dba Solar Direct

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Bradenton Florida 34203

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1.0 Executive Summary

A pioneer in the world of energy conservation products since 1986, Solar Direct began with a focus on residential and commercial systems including solar thermal and geothermal heat pumps. Today Solar Direct hosts the Internet's fastest growing Energy Product Super Mall, TheEnergySupermarket.com. It offers over 350 energy-efficient leisure and appliance products to home-owners throughout the U.S. and the world. The company's exclusive flagship product, the Vortex™ Solar Pool Heating solution, is nationally known for its home-owner-friendly self-installation, product reliability and high customer satisfaction ratings. The company also offers solar design and contracting services to the commercial and residential markets, principally in the home base Florida market.

The focus of this business plan is to put forth objectives to solve the present cash-flow squeeze, and to increase profits from the present near break-even level to net profits of $221k by the end of the 2006 FY, rising to $1,398k by 2010. We intend to accomplish this growth by reducing cost of goods sold, and trimming operating expenses. Term loan proceeds will be used to pay off short-term debt, purchase inventory to increase our revenue rate and to intensify marketing efforts to concentrate on our designated target markets.

The Company

Solar Direct's mission is to introduce environmentally-responsible energy solutions to "Mainstream USA", both consumers and businesses. Timing is excellent for expansion due to numerous market factors, including: the rising cost of energy, a general public awareness of conservation importance and the availability of new Federal and State consumer and business incentives.

Solar Direct has reconfigured its business model which will build and maintain separate focus for two divisions:

The Energy SuperMarket (**ESM**) – Online Product Super Mall

Solar Direct (**SD**) – Installation and Service contracting; Professional Design Services

The business is structured as a Florida Limited Liability Corporation, Energy SuperMarket, LLC, D/B/A Solar Direct. It is fully owned by two people, Mr. Kirk Maust and Mr. Dale Gulden. Combined, Maust and Gulden represent over 50 years of solar sales and contracting experience. Their knowledge, experience and industry contacts accumulated over the 20-year history of Solar Direct, combined with internet web marketing expertise, has led to a unique business model in the solar industry. This model has allowed the company to forge a customer base of 32,000 accounts, most of which are Internet product retail sales.

At the present time, Solar Direct's facilities are located in Bradenton, Florida. The current office and warehouse space is adequate for first year growth; during the second year additional space will be required. It has a present staff of eighteen people plus five outside installation subcontractors. The growth of the company will

be carefully guided by following the objectives outlined in this plan, with an emphasis on accuracy and efficiency.

Products & Services

Solar Direct provides energy-related equipment for residential and commercial markets. The company's ecommerce site, TheEnergySuperMarket.com, provides Do-It-Yourself kits for home-owners. It also offers wholesale parts and kits to contractors for resale to consumers.

Of the 350 products offered on the ESM e-commerce website, the most popular products ordered include: solar pool heaters, pool heat pumps, solar water heaters and miscellaneous pool/spa supplies.

The Market

There is a huge market in the United States for energy-savings products – particularly with the advent of the nation's growing Energy Crisis. Concerns of dwindling oil and gas supply for heating and electricity, plus associated energy price increases, have increased consumer awareness.

In terms of total market potential for **ESM online energy shopping mall**, there are an estimated 33 Million consumers (so-called 'Cultural Creatives' or LOHAS) who seek "green" environmentally responsible products. More broadly, there is an additional growing base among the mainstream public who are becoming energy-conscious. Fueling both consumer and commercial demand for ESM products and services, over 22 states have Renewable Portfolio Standards in place and associated energy rebates. Further, the passage the Federal Energy Act of 2005 adds another incentive layer for purchasing renewable energy products during the 2006-2008 timeframe.

In terms of growing the **SD contracting business**, the company will refocus on a number of key target markets and industries where the cost-savings benefits of solar water heating and solar pool heating offer to significantly decrease their cost of energy. These markets include: single family homes, hotels and resorts, the health industry, home owner associations, educational institutions, and multi-unit residential facilities. To create greater market share within each of these verticals, case studies of related Solar Direct projects servicing the industry will be published through public relations efforts.

Nearly 3,315,000 Florida single-family residences have been identified as candidates for Solar Direct's energy products and services. In addition some 250,000 new homes are being constructed in Florida every year.

Nearly 61,476 Florida commercial business, government and educational organizations have been identified as likely candidates for SD design and installation contracts.

For solar pool heating and pool purification, these include pools located within:

- Hotels/Resorts
- Colleges-Universities
- Multi-unit Residential Housing (e.g. Condominiums, apartments)
- Wellness Centers/Hospitals

For solar water heating, although replacing existing water heaters with energy-efficient is an immense opportunity with all commercial buildings, three market sectors which are especially "warming" to solar water heating are:

- Hotels/Resorts
- State and municipal governments
- College/University

To create greater market share within each of these verticals, Solar Direct will invest in marketing, advertising and sales initiatives crafted to the targeted industry needs of these market sectors.

Competition

Competition within the online business is mostly limited to a few bigger stores such as Giaim.com and RealGoods.com (although their real strength is in mail order catalog sales). Others include pool and spa supply sites, and small energy related sites; most of these do not offer the level of online and personal customer support that ESM provides, allowing consumers to educate themselves to make informed buying decisions.

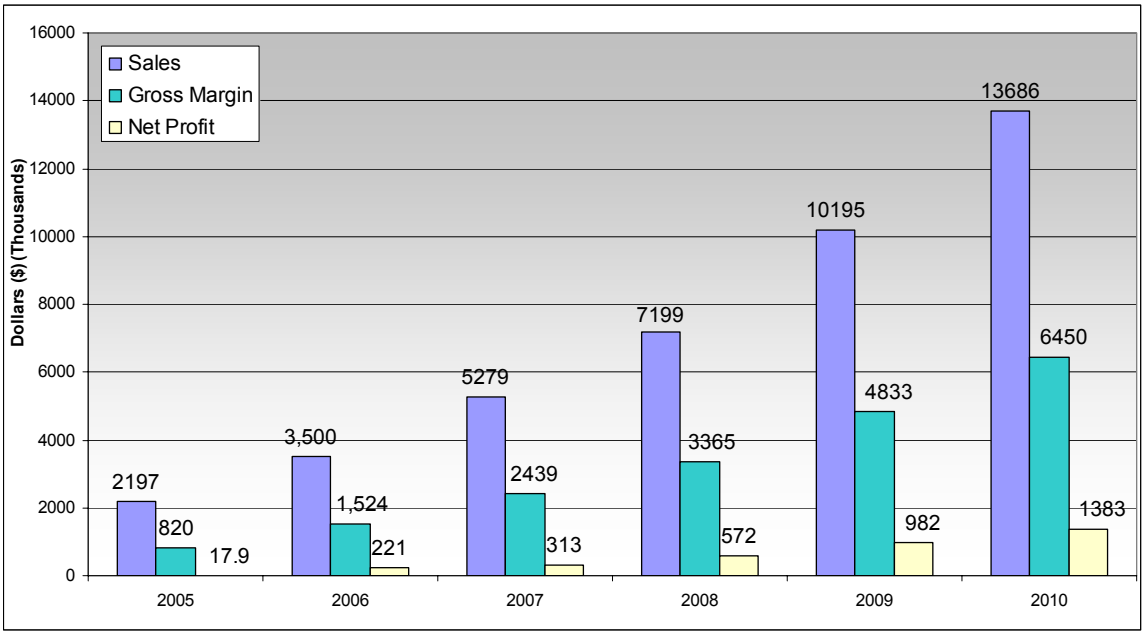
Most traditional solar contractors have primitive websites and cannot compete with Solar Direct's online and back-office IT capabilities in servicing online buyers. SD will benefit from the broad Internet exposure created by ESM, fostering the image that it is the leader in its field.

Financial Paths to Success

With Solar Direct's restructuring into two separate divisions as well as refocusing on its key industries for service opportunity, the company expects its revenue to rise from $2,197k in FY2005 to $13,686K in 2010, a 44.17% CAGR. It also expects to move net profits from $17.9K in 2005 to $1,398K in 2010, a 139% CAGR. Such a large increase in profits is projected because we will be both increasing sales and reducing cost of goods from 62% to 53% of sales, plus operating expenses will be reduced from 39% to 34% of sales by improving operating efficiencies.

Solar Direct's present thin cash position has resulted in a lower ability to purchase needed inventory and hence has slowed product-order and service project delivery times. Similarly, delays in equipment delivery have slowed revenue recognition for larger contract projects. Some competitively bid projects had to be cancelled. These setbacks will be remedied by cash infused from a loan of $250,000.

Figure 1. Solar Direct's Revenue and Profit Trend and Projections



To maintain sufficient cash, procure needed inventory and implement our marketing plan the company will require $250,000 of first stage funding. Our projected cash flow will increase our cash balance and allow us to leverage this asset to create new opportunities.

Objectives

There are four major objectives in this business plan, of which the first three will be realized in the first year, and the forth is longer term – occurring in the second year.

1. Solve the present working capital shortage. Towards this, Solar Direct is pursuing a $250K term loan to take place in July, 2006.
2. Increase inventory levels, allowing faster revenue turn via faster fulfillment.
3. Create a detailed Business Development Plan for each division based on a franchise model. The Business Development Plan will also include analysis of additional funding requirements for further expansion.
4. Leverage the steady growth of ESM revenue to rapidly increase SD market growth. Although SD's contract sales pipeline is looking strong, significant results are not expected to appear until the second and third years. This objective must be executed carefully after adequate research in order to target specific market segments.

Vision and Mission Statement

Solar Direct's vision: *Inspiring others to discover environmentally responsible energy solutions.*

Solar Direct's mission: *Building a revolutionary Internet presence that dramatically shifts the way renewable technologies are acquired well into the future, enhancing awareness on a worldwide scale.*

The company's mission is in line with the national consciousness: A Harris Interactive Poll conducted in October 2005 found that 74% of U.S. adults believe environmental standards cannot be too high. Supporting this, 22 states have implemented a Renewable Portfolio Standard (RPS) committing to convert a significant percent of their energy usage to renewable sources such as solar energy.

Keys to Success

The key success factors involved in running a successful online E-tail site (ESM) are very different from those for running a successful contracting service business (SD).

On one hand, e-tail is obviously a highly automated, turnkey business – ideally, most customer transactions can take place on "auto-pilot" provided IT infrastructure, and marketing investments are maintained to remain competitive. On the other hand and sharply contrasting with this, contract services are more labor-intensive and require ongoing project management and people resources.

Key well-known success factors for any E-tail website, whether selling energy products or other products, include the following:

- Selection
- Convenience
- Price

ESM offers a broad selection of products at very competitive pricing using a convenient online purchase method. Well known examples of highly successful E-tail businesses that we model after include Amazon.com and Shopping.com.

Evaluating the key success factors for solar contracting services is more difficult as there is no national or regional success role-model! However, selling solar and alternative energy technology and associated services can learn from earlier successful technology markets.

Solar Pool heating, solar water heating, solar electric and pool purification all may be described as "replacement technologies", meaning they replace or substitute for products of like functionality which are current incumbents in the market. For example, solar water heaters are a candidate replacement technology for the popular electric and gas water heaters.

There are two questions for evaluating the success likelihood of a business built around replacement technology. A successful business dependent on technology replacement can answer "Yes" to at least one of the two questions:

- Does the business alleviate a frustration experienced by a large enough group of consumers?[1]

- Does the business have a strategic advantage over the competition?

Do ESM and SD alleviate a frustration experienced by a large enough group of consumers? The answer is yes! Consumers are frustrated by increasing energy costs and increasing environmental pollution from legacy fossil fuel sources.

Do ESM and SD have a strategic advantage over the competition? Yes, by combining the vertical and horizontal channels of two different business models. The ESM model's broad market exposure through the Internet and high volume drives cost of goods down as sales revenue goes up. These cost savings make contracting services more profitable. The broad market exposure attracts not only online ESM sales, but low cost leads that cross over to the SD contracting business.

Each model compliments the other; and Solar Direct has proven the validity of this concept for over ten years. With the cash from a loan for expansion, we believe this synergistic plan can succeed.

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[1] This is a success criterion specified in the Michael Gerber's The E-Myth Revisited: Why Most Small Businesses Don't Work and What to Do About It. 1995.

2.0 Company Summary

The company was founded in 1986 by Principals Dale Gulden, Chief Executive Officer, and Kirk Maust, Chief Operating Officer.

During the startup period, Solar Direct focused on residential and commercial systems including solar thermal and geothermal heat pumps. In these early days, the company had a relatively traditional solar contractor model, principally supported from local residential installations of solar products.

Solar Direct experienced early struggles principally associated with the expiration of the Federal Tax credits. Financial difficulties during this period were an industry-wide phenomenon. Prior to 1986, there were hundreds of solar contracting companies in Florida, while after the expiration there remained less than 50.

With the onset of the Internet era in the mid to late 90's and the move of consumers to online purchasing of goods, Solar Direct increased investment in IT and developed in-house Web knowledge including deployment of osCommerce, an Open Source online shopping/e-commerce solution. This led to the development in 2003 of TheEnergySupermarket.com, Solar Direct's web retail presence. Starting in 2004, the company began investing in search engine marketing through Google and Yahoo to increase Web traffic to the site.

As one of the core assets that now maintains and stabilizes the company's sales, TheEnergySupermarket.com attracts approximately 2500 visitors per day.

Solar Direct is currently a bi-partite company, consisting of TheEnergySupermarket.com (ESM) Internet retailer and Solar Direct (SD) professional services, consisting of engineering design, project management, consultation as well as trade services such as installations and repairs.

On the solar design and contracting service side, the company benefits from over 100+ man-years of solar technical design expertise. Validating the company's business model, most of the leads for these projects have come from Internet inquiries via TheEnergySupermarket.com.

Company Ownership

Solar Direct is a privately owned company. The business is structured as a Florida Limited Liability Corporation, Energy SuperMarket, LLC, D/B/A Solar Direct. Dale Gulden and Kirk Maust own the company with equal ownership shares.

Company Locations and Facilities

The company has one location, a 3300 square foot warehouse in an industrial park. It includes an open office area, computer area, warehouse and loading dock.

3.0 Products & Services

Solar Direct provides energy-related equipment for residential and commercial markets, with the bulk of sales stemming from online sales of solar pool heaters (SPH) into the residential market. The company's ecommerce site, TheEnergySuperMarket.com, provides Do-It-Yourself solar pool heating kits for home-owners as well as kits that can be purchased by the homeowner for Solar Direct (or other service supplier in their state) to install for the home-owner. Most solar contractors have primitive websites and cannot compete with Solar Direct's online and back-office IT capabilities in servicing online buyers.

Of the 350 products offered on the ESM e-commerce website, the most popular products ordered include: solar pool heaters, heat pumps, solar water heaters and miscellaneous pool/spa supplies.

Sales Literature

Copies of company brochures and advertisements are attached as appendices.

Fulfillment

The company's mainstay product, the Vortex™ solar pool heater, is private labeled and manufactured exclusively for Solar Direct. Production is provided by Techno-Solis of Clearwater, Florida – Solar Direct has maintained a long standing relationship with the manufacturer for over ten years. This arrangement allows for extremely competitive pricing, which not only provides a high profit margin for consumer sales, but also permits wholesale distribution to contractors.

Sourcing of some products has been a concern as the company's cash flow issues have not allowed it to pursue the attractive pricing with advance volume orders. Some product supply has been curtailed by source issues: During 2005, a popular, stylish solar shower could not be supplied by the French manufacturer; throughout 2006, solar PV electric panels were back-ordered industry-wide.

Shipping logistics and costs determine whether products are warehoused and shipped from Solar Direct's warehouse, or drop shipped direct to consumers from various distributor/manufacturer warehouses throughout the U.S. and Canada.

Future Products and Services

New products are evaluated and added to the product line on a regular basis. New products in 2006 include solar space heating and evacuated tube solar collectors for higher temperature applications. Solar cooling products are being considered as they are finally becoming viable.

4.0 Industry Overview

Key Technology Markets

Overall, it is fair to say that the solar industry "has been a long time coming". As of 2005, the Solar Energy Industry Association (SEIA) estimates that solar electricity accounts for only one thousandth of the total worldwide electricity supply. As Table 1 shows below, some 30 years post the inception of the solar industry, only 200,000 U.S. homes have installed solar photovoltaic (PV).

Table 1. U.S. Total Market for Solar Direct's Technology Markets

	2005 Installed Base	% of all units sold	New installs per year	Annual Market Growth Rate	Estimated Market Size ($) 2006	Projected growth (CAGR 2006-2011)
Solar Pool Heaters	195,000 E[2]	20% of all pool heaters[1]	65,000[6]	30% per year past 3 years[3]	$325 M	15% E[4]
Solar Water Heaters	1.5 M[5] 285K (residential.) 1.25M commercial[6]	0.2% of all water heaters	5000[7]	15%	$25 M	12% E
Solar PV System	200,000 (homes)	Less than 1%	25,000[4]	15%	$375 M	15% E
Pool Purification	200,000[8]	2-3% of all pools[9]	50,000 E	20-30%	$37.5 M[10]	15% E

[2] Assumes past 7 year shipments of 65000 in 2005, 47,000 (2004), 32,000 (2003), 23,000 (2002), 13,000 (2001), 10,000 (2000) and 5000 (1999).
[3] Solar Energy Industry Association
[4] E stands for company estimates based on historical growth patterns per industry.
[5] NREL 1999
[6] Richmond, R., Still, S., Curry, J., Jones, D., Bircher, C "Utility Success Stories in Solar Water Heating" from Proceedings of the ASES 2003 Annual Meeting.
[7] Larry Sherwood of Colorado Renewable Energy Society
[8] Based on an estimated installed based of 8,000,000 pools in the U.S., 2005 (Association of Pool and Spa Professionals)
[9] Pool and Spa News, July 2004
[10] Estimated assuming 50,000 units shipped in 2005 at an ASP of $750 (Note there is a wide range of priced systems, from simple ozone and solar-powered systems at $250 to total digitally controlled pool purification systems at $2000)

Solar water heating, despite it's success in other parts of the world (accounting for the majority of homes in Israel and China), has been installed on some 1.5 M U.S, residences and it accounts for less than 0.2% of the total U.S. water heater install base.

Of all the solar technologies, solar pool heating has been best accepted, having attained simple, low priced and reliable designs for over a decade.

The U.S. solar industry is composed of approximately 34 solar PV manufacturers, 7 solar water heating manufacturers and 15 solar pool heating U.S. manufacturers. Across the U.S. there are thousands of 1-5 employee contractors and distributors working within these solar industries.

In Florida, there are some 33 solar contractors and we estimate total employment to be less than 300 persons statewide.

Across the world, the solar related industries are now picking up as a result of renewed interest by the public and private investment community as well as recent legislative efforts supporting commercialization activities. A 1998 report[11] identified that solar water heaters have a 6-9 million unit replacement opportunity of electric and gas heaters.

Also shown in Table 1 above, the two largest markets by revenue opportunity are the solar pool heating and solar photovoltaic markets.

Other parts of the world have embraced solar more than the U.S.; in fact, the U.S. is a laggard in this area. In the photovoltaic market, currently 742 M megawatts of solar cells are produced annually worldwide. Germany has 500 megawatts of solar energy already installed, with Japan second and the U.S. accounting for some 25% of the total MW solar capacity. Fuelling the solar photovoltaic market growth is decrease in price due to manufacturing improvements and economies of scale. SEIA estimates the current solar electricity rate will decrease over 10 years, from 18-25 cents per KW-h to 5.7 cents per KW-h.

Increased concerns worldwide over global warming, the rise of state Renewable Portfolio Standards (RPS), the emergence of tradable renewable energy credits and the Federal Energy Act of 2005 – all are contributing to a Solar Renaissance. The single greatest factor spurring renewed interest in renewables is the tradable RE credit and the existence of markets to buy and sell these credits. This is most active for solar photovoltaic; however, it is also available (though less appreciated) for solar thermal. So-called TRECs are a real market driver: New Jersey, an RPS state with aggressive "greening" initiatives, is offering $200 for 1000 "green" kilo-watt-hrs.

To some extent, enthusiasm for the photovoltaic market has spilled over to the solar thermal markets, with more states now offering rebates for solar water heating. There are several bills in the current Florida legislative session that propose to advance the SWH industry by providing rebates to both consumers and businesses.

[11] Source: Hoffman, J.S., Wells, J.B. and Guiney, W.T. (1998) A New model to build a permanent sales force, Renewable Energy Policy Project Report No. 4 (WA DC).

The Online Shopping Market

Solar Direct's core revenue depends on the efficiency of the online shopping channel as a preferred consumer means of purchasing. The Internet continues to consume a larger portion of consumer's time and money. In 2004 retail sales online was $141.4Bn, up 23.8% from 2003. (Forrester Research, 2005). For 2006, Forrester has forecast continued growth of 22% to $172.4 M. Note that, even excluding online travel sales (e.g. Airline tickets), online retail now comprises 4.6% of all retail sales. While an online retail forecast out to 2009 is not available to us at this time, Solar Direct is confident that online shopping is a continued trend in its favor.

5.0 Market Analysis Summary

Market Analysis

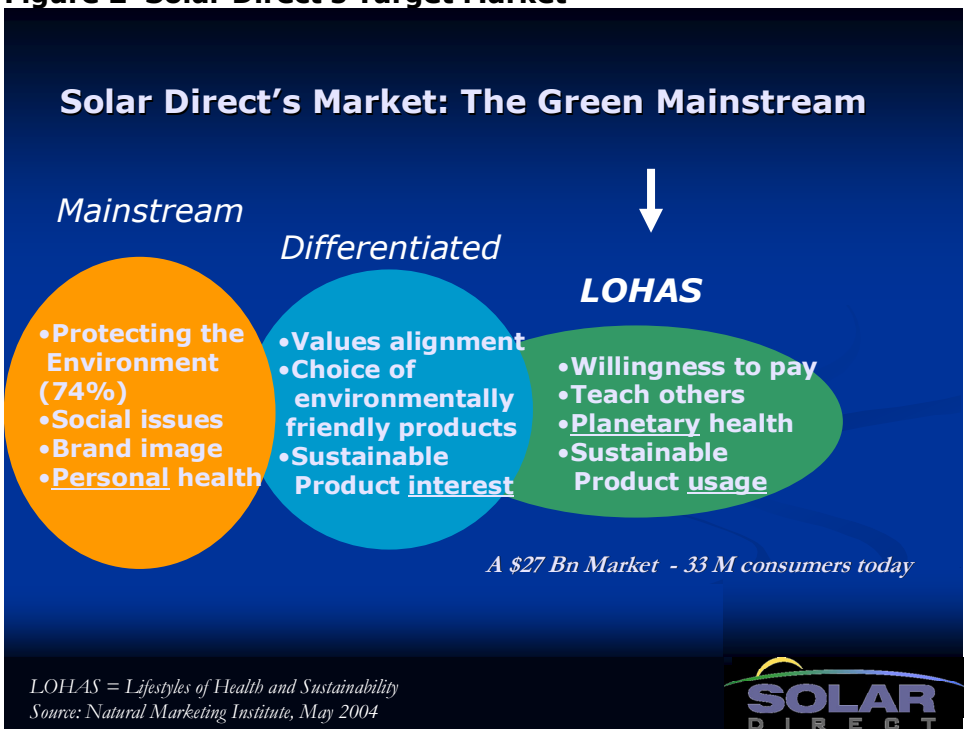
TheEnergySupermarket.com – U.S. Market Analysis

Solar Direct's core revenue base stems from the appeal of its wide selection of energy-conscious products to the residential consumer. The company's business model takes advantage of two ongoing trends in consumer buying patterns:

- "Green buying", namely products which benefit the environment.
- The rising trend toward online purchasing.

Figure 2 displays three psychographic groups of consumers as analyzed by the Natural Marketing Institute. The LOHAS group (Lifestyles of Health and Sustainability) is regarded as a harbinger of future purchasing trends. NMI estimates that 33M members of the buying public (roughly 15% of the mainstream) fall in the LOHAS category, namely, purchasing products like hybrid cars (e.g. Toyota Prius), green homes (energy-efficient and using recycled materials), organic produce and investing in socially-responsible mutual funds. This rising group of consumers cares about the quality of their goods in terms of not harming the environment. The Natural Marketing Institute estimates that these consumers hold $27B worth of purchasing power.

Figure 2 Solar Direct's Target Market



To appeal to the values of these educated LOHAS consumers, Solar Direct has crafted its website as a learning place for renewable energy and energy-saving products. In early 2006CY, the company revamped the website to include more educational material appealing to this group. A continuing larger percentage of the mainstream population is now beginning to purchase green products.

Solar Direct Contract Services – Florida Market Analysis

Table 2 shows Florida statistics for market sectors regarded as likely to adopt solar products. The residential opportunity for selling both SWH and SPH is clear from the table, as there are over 4.2 Million single family residences and another 2.5 million multi-unit residential units.

Table 2 Florida Target Markets for Solar Direct's Contracting services

	High-need Markets Identified	**# Units/ Businesses in Florida**	**Estimated penetration**	**Projected growth**
Base Statistics For SPH and SWH target markets.	Florida single-family residences	4,245,984[12]	20% SPH 5% SWH	20% growth per year in new construction
	Multi-unit residential units	2,500,000[13]		
	Multi-unit unique complexes	50,000[14]		
	Number of pools (in ground $ above ground)	2,500,000[15]		
	Colleges/Universities	50		
	Hotels/Resorts	3838[16]		
SWH markets	Government buildings	7171[17]	0.2%[19]	12%[19]
	Large vehicle cleaning (e.g. Aircraft)	30[18]		
Pool purification Market	Hospital Wellness Centers/therapy pools	215[20]	2-3% [19]	15%[19]

[12] U.S Census Data (2000)
[13] U.S. Census data 2000- multi-unit housing for Florida
[14] Assumes an average of 50 units per complex (obviously there is a wide range)
[15] Based on FSEC estimate of 800,000 total pools in Florida in 1997, grown at 20% per year; some double counting with residential unit number.
[16] U.S. Census Data
[17] FGDL.org
[18] Very rough estimate of total number of Florida airports with significant commercial traffic plus large marinas plus military bases with aircraft washing/large vehicle washing.
[19] Assume same as U.S. Market

[20] Members of Florida Hospital Association

Total business units 61,476 (excludes HOAs and Green builders which are sales channels into multi-unit residential and new construction market sectors).
Table 2's column 2 " High Needs Markets" makes it clear that Green Builders (as well as architects) are an identified target market for several Solar Direct energy-conserving products as this industry sector specializes in creating energy-efficient homes.

Service Business Analysis

Business Participants

As judged by members of the Florida Solar Energy Industry Association (FlaSEIA), Florida has approximately 33 viable solar contracting companies.

Figure 3.

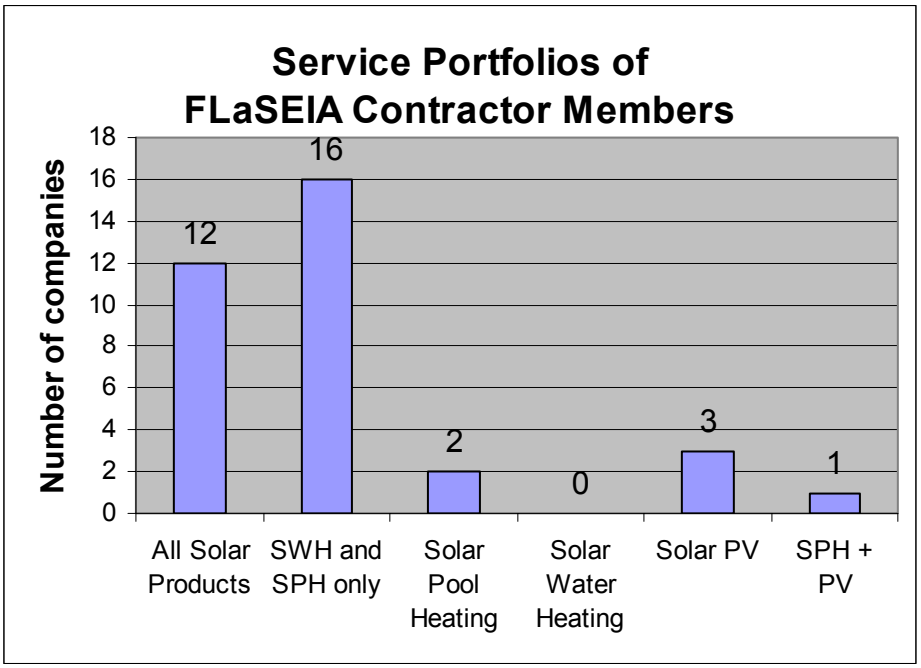


Figure 3 shows that the majority of Florida solar contractors are selling, installing and servicing ALL forms of solar specialty products or specialize in Solar Pool Heating and Solar Water Heating alone. Notably, none have built a business around solar water heating per se and less than a handful have built a business on solar pool heating or solar photovoltaic alone.

These participants are the sole survivors of the hundreds of solar contractors that existed during the Federal Tax credits for solar in the early 80's.

Is anyone of the technology specialty strategies better than another? Yes – Due to the historically niche market for solar, those who survive tend to have expertise across many solar areas. "One trick" ponies have not survived. Solar Direct has

recently under-taken a major remodel of its website SolarDirect.com in an effort to emphasis its broad market knowledge.

Competition and Buying Patterns

The Energy SuperMarket

In its online Energy Product Super Mall space, Solar Direct has few competitors. The closest competitor is Gaiam's Real Goods website (realgoods.com) which has a comparable Alexa traffic ranking (79,000 as of 3/15/06) meaning the two are comparable in attracting Web traffic. Solar Direct's site is more focused on Energy alone, whereas Gaiam offers healthy living books and videos, Home and Garden products, clothing as well as gifts and toys appealing to Green, Cultural Creative and LOHAS consumers. On the face it, this indicates that Solar Direct is more successful than Gaiam in attracting consumers seeking energy-related products per se.

Note there is some risk of future mainstream competition from the online stores of Big Box home improvement retailers like Home Depot and Lowe's who are capable of significant volume purchase discounts. (In solar rebate-rich California, Home Depot carries solar water heaters.)

Florida Solar Contracting Services

To date, there is no service company doing solar projects nationwide. The closest is Gaiam/Real Goods which has confined projects to California and Colorado, states with significant solar rebate incentives for consumers and businesses. Both states also include solar as a significant component of their Renewable Portfolio Standard (RPS) which means there is a mandate for utilities, serving both residential and businesses, to move to renewable energy sources.

More prominently, Solar Direct's solar design and service business competes with some 32 other solar contracting firms in Florida. None of these firms has a significant Internet presence and e-commerce storefront to complement its service business. Solar Direct's management believes none of the competitors pose a significant threat. Most Floridian solar contracting companies achieve less than $1 M in revenue.

Figures 4 and 5 summarize key differences in Solar Direct's business model vs. that of the average Floridian solar contracting firm. The most prominent competitive advantage in Solar Direct's model is that the company deploys very low-cost but broad-scale marketing and sales initiatives, heavily leveraging the Internet. As evidenced in Solar Direct's near-term service projects (Figure 9), much of the company's service business is being driven by their investment in online marketing. The company is also distinct from the traditional solar contractor model in its IT investment and sales commission incentives. Finally-perhaps most importantly- the company's volume online sales promise to give it an equipment discount advantage. (This element has not been fully active due to existing cash flow issues.)

As a distributor of Solar Pool heaters, Solar Direct faces competition from only ten other major solar pool heating distributors throughout the country.

Two well-known competitors are dedicated distributors for FAFCO, Inc [Chico, CA] and Heliocol, Inc [Israel]. FAFCO claims to have installed close to 1.5 million solar panels for pool setups.

Figures 4 and 5. Unique Business Models for Solar Contractors

Figure 4.

A Unique Business Model for a Solar Contractor

	Solar Direct	Typical Florida Solar Contractor
Technology Deployment & Use	High Use: Sophisticated in-house website; Servers, VoIP, Automated processes (back office); streamlined IT process with in-house staff.	Low Use: No or Simple website (lacking e-commerce); low capital investment in IT
Marketing Costs	Low cost channels ▪ Search Engine PPC and Internet-based service leads ▪ Regional syndicated classified Ad Networks w/national coverage (Seasonal/Topic Targeted)	High Cost channels ▪ Yellow Page ads ▪ Homes shows ▪ Direct mail

Figure 5.

A Unique Business Model for A Solar Contractor (2 of 2)

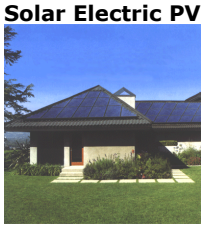
	Solar Direct	Typical Florida Solar Contractor
Sales Geography	Online Retail Sales: U.S. Wide Service: All Florida	Online Retail: None Service: 1-3 Florida counties
Purchasing Discounts	High Volume discounts ▪ Tight relationship with Vortex SPH manufacturer. ▪ High vol. distribution of other products via mass internet channel	No or low volume discounts
Sales Commission Model	Low 3-tier model: 0% commission on internet sales 5% commission: Telesales 10-15% In-home sales people	High Single–tier model: In-home sales people on 10- 20% commission

6.0 Strategy and Implementation Summary

Strategy - The Big Picture

Table 3 shows how the four Solar Direct product/service types compare along several dimensions which influence both consumer and commercial adoption. Table 3 also shows that Pool purification, as a product and service category, holds the highest chance for success with significant cost and features benefits over the incumbent chlorine pool. Solar Pool Heating comes in a strong second.

Table 3 Evaluation of Key Products by Keys to Success Metric

	Is there a Consumer Frustration point?	**Perceptible Price Advantage?**	**Perceptible Monthly Utility Savings?**	**Features advantage over alternative?**
Solar Pool Heating 	**Yes** **Residential** electrical and gas alternatives significantly higher life-time costs to end-customer to operate	**Yes** Typical price of electric or gas pool heater is $2000 - $4000. Average price of solar pool heater is $2500	**Yes** **60-100%**	**YES** Doubles the pool season use
Solar Water heating 	**YES** National energy crisis has consumers worried about electrical and gas heating bills	**NO** Initial upfront price is 2X to 5X the price of electric or gas heater; however units pay for themselves in savings	**Yes** $400 - $600 Yearly Savings for typical family Pays for itself in 3-5 years**.**	**No** Some concerns over weather-dependence
Solar Electric PV 	**YES** Rising utility costs Also concerns over storm or hurricane outages	**NO** Upfront costs as a significant barrier; no FL incentives yet Solar Direct's Freedom Package allows for lower entry level system	**YES** Up to 25% or more utility cost savings	**MIXED** Yes- storm backup No- limited net metering in Fl for consumer to sell back electricity; interconnections complicated per utility.
Pool purification technologies 	**YES** Chlorine pools have been identified as a health risk and aggravator. Expensive Pool maintenance	**NO** Higher upfront costs but units pay for themselves in savings	**YES** Up to 100% monthly savings in chlorine pool chemicals	**YES** Improved quality of water, lower maintenance costs; lower owner maintenance.

Keys to Success – Florida Commercial Projects

Specific commercial opportunities made clear in Figure 9 include solar pool heating and pool purification technology.

For solar pool heating adoption – the technology provides lower operating costs compared to the incumbent gas and electric methods. For hotels and resorts, it therefore allows these businesses to extend their effective "swimming season" for greater occupancy year-round.

Finally – pool purification systems present an excellent opportunity for health-related pools and water therapy centers, as well as a luxury and upscale resort amenity.

As a foremost business challenge: solar water heaters continue to face an uphill battle based on price. In Florida, an installed solar water heater can cost anywhere from $1500 to $3500 (FSEC, 2000). This price compares to a range of $340 to $459 for a gas water heater, and $150 to $350 for an electric water heater. Further, the size of the SWH commercial opportunity is limited by the lower incidence of industry and manufacturing companies in Florida.

The net of the above is that Solar Direct will continue to promote solar pool heating and, further, advance pool purification technologies as flagship products, with slow growth in the SDHW commercial market.

Value Proposition

Solar Direct's core value proposition to its mainstay residential consumer market is strong. It is one of the very few businesses where a purchaser can get ***Factory Direct Prices of Energy-Saving products available conveniently online.***

For Solar Direct's emerging commercial services market, there is an equally strong proposition: ***Solar Direct services so many people of different geographies online, the company has a wealth of customer service experience – complementing their 20+ years in the solar industry.***

Competitive Edge

Compared to thousands of solar contractors around the nation, the company has a strong IT focus, an established Internet e-commerce channel supporting 2,500+ Web visitors per day. With the relief in its cash flow situation made possible through the initial 2006 capital investment, the core benefit of advance inventory purchasing will be unleashed to make the company a formidable online, service-driven leader in renewable energy product distribution and service.

The company does not believe online retailers with Big Box brick-and-mortar stores pose a significant threat as renewable energy products require specialized education and customer service skills.

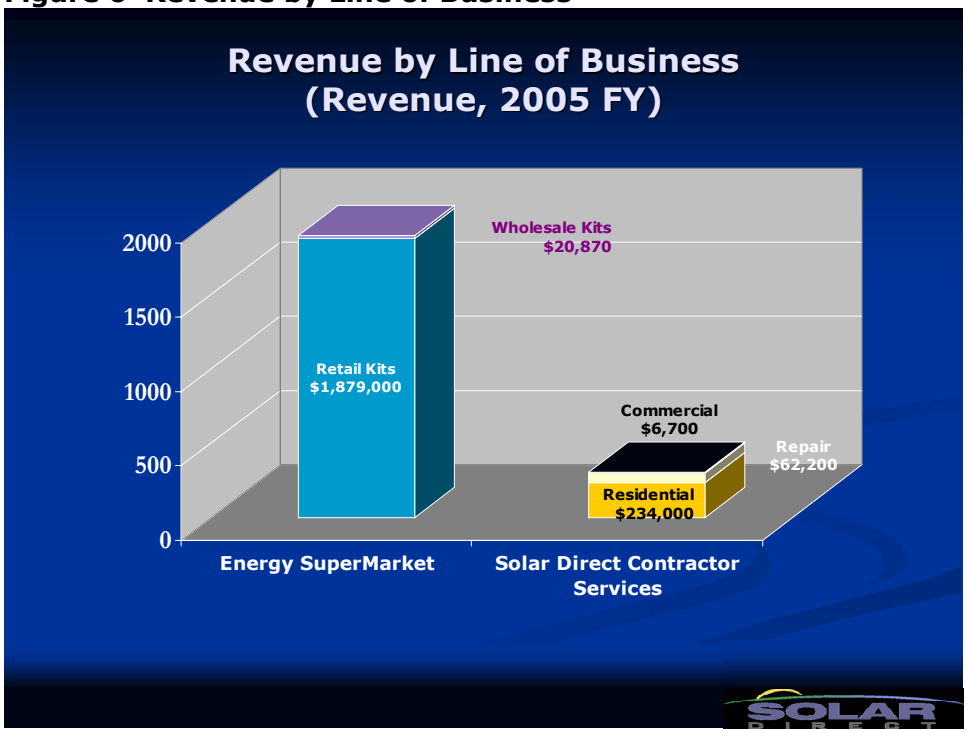
Solar Direct's competitive edge is portrayed in Figures 4 and 5 above.

Sales

The Two Primary Lines of Business

Figure 6 shows that today, the bulk of Solar Direct's revenue stems from the online ESM retail side, with $1.88 M or 86% of 2005FY revenue coming from online sales of product kits, mostly to residential homeowners.

Figure 6 Revenue by Line of Business



ESM - TheEnergySupermarket.com

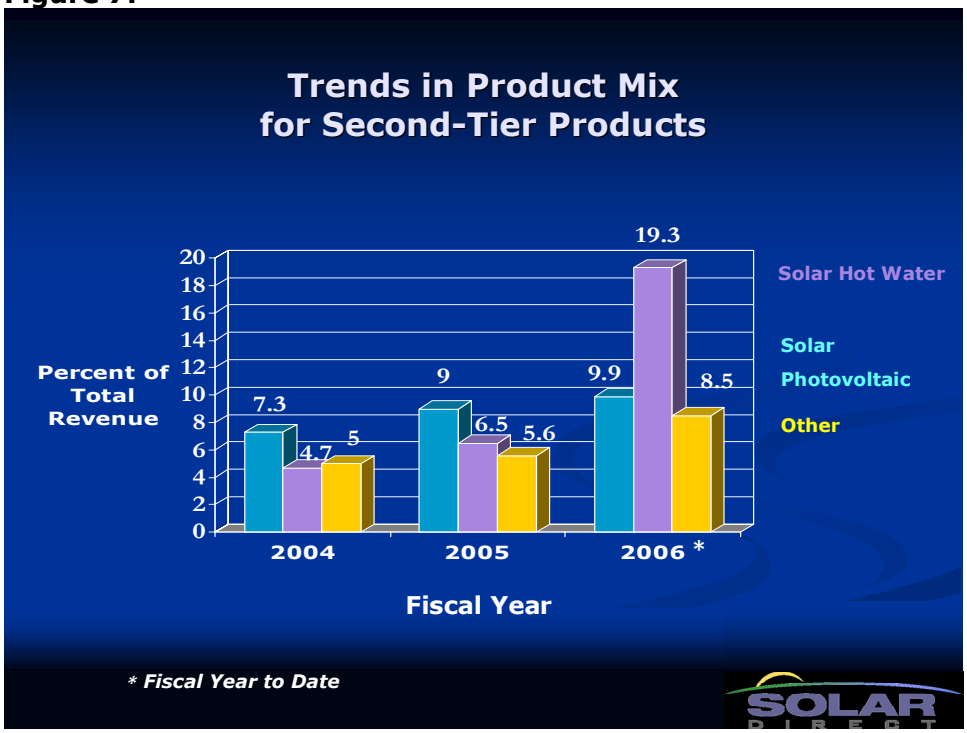
Solar Direct's management estimates that today, the online retail site attracts approximately 2,500 Web visitors per day, principally through search engine marketing optimization and Pay-for-Performance (e.g. Google AdSense pay-pay-click advertising). Of these visitors, some 5-20 purchase transactions take place per day with about 25% of them resulting in product purchases over a $1000 average selling price (ASP). The buy conversion rate is therefore operating at slightly less than 1%. (For comparison, the best, highly capitalized online retail sites, like Amazon and QVC, are operating at a 3-6% conversion rates).

As pointed out in the section "Key Success Factors", one of the bases of successful retail business is convenience. For Web e-tail sites, this amounts to optimizing the path for an online visitor to learn about a product and click through to purchase. In late 2005, one optimization done for TheEnergySupermarket.com was signing up with PayPal. Prior to PayPal, web visitors to Solar Direct had to fax in a confirmation after agreeing to purchase. That step slows the sales process, in worse cases, even

prevents the transaction from occurring, as users must fax a signed form into the company. PayPal promises to increase the hit rate and flow of online purchase transactions for Solar Direct in 2006 and forward.

As another marketing initiative begun in 2005 toward optimizing convenience buying on the website, Solar Direct began a series of email marketing campaigns, a la Amazon.com. This consisted of strategically-crafted email advertising promotions electronically transmitted to customer email Inboxes which encouraged them to visit the Website, promoting discount programs and "store specials". During mid-to late 2005, Solar Direct executed 3 such campaigns to a list of 5000 customers with known email addresses. Such email marketing initiatives are low-cost and promise to enlist future purchases, as the in-house email list has grown. In early 2006, the company installed an online registration form for their site which will enable the company to expand their email marketing list to new prospects (e.g. Refer-a-Friend programs) list as well as encourage repeat buying among their existing base.

Figure 7.



Based on results from the first half of 2006FY, online retail sales revenue is holding solidly, with retail sales running at the same pace as the comparable period in 2005 (See Financials section).

The good news is that the ASP is moving up, with the increase of sales of solar water heaters (See Figure 7 above). Pool purifiers are also showing strong growth.

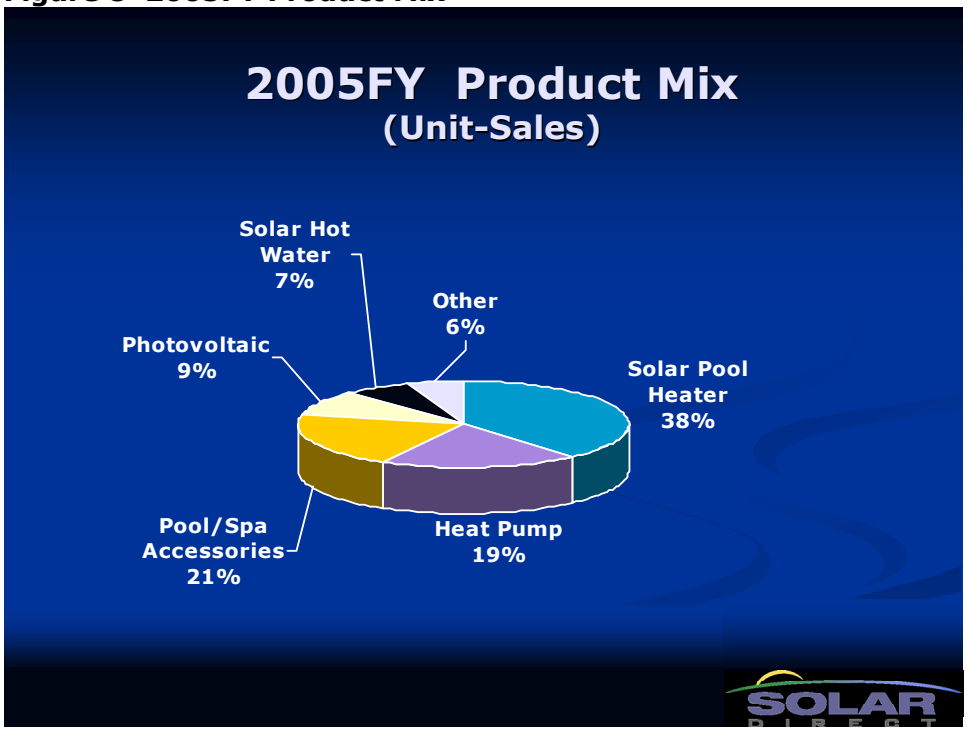
Solar Direct anticipates that the upward trend in solar water heater sales will continue through 2008, particularly with the Federal and State rebate programs active, encouraging consumers to buy these products.

Retail Product Mix

Figure 8 shows the major product categories among the total units shipped from Solar Direct's website sales in 2005. It shows that the majority of the units are Solar Pool Heaters, with Pool and Spa accessories and heat pumps coming in second and third in volume, respectively.

Note Solar Direct's 2006FY data indicates that Solar Water Heater sales (7% of 2005FY unit volume) are up markedly, now approaching 19% of all shipments.

Figure 8 2005FY Product Mix



In 2005, the high-end digital Pool Pilot, pool purification system, was the main new product introduced by the company, with good results.

SD - Trade and Professional Services

For Solar Direct, 2005 marked a defocus on service sales revenue, with $7,600 in professional services rendered. The low-level of professional services was principally attributed to the mid to late 2005 chaotic Florida business environment associated with the hurricane season. Even as late as early 2006, many key Gulf and South Florida resort properties were in disrepair.

During 2005, the company did introduce two new services: Solar Freedom, an entry-level solar photovoltaic system and service solution aimed at hurricane power back-up. The second, "Azteca" is a solar water heating solution combined with metering capabilities, aimed at the commercial market.

Over the past ten years, the company has executed many design and service projects for the following organizations:

Alaska Department of Fisheries
Ringling School of Art and Design
American Home Shield
Boy Scouts of America
Loral Data Systems
Princeton Optical Center
South Carolina Sea Grant Consortium
Prudential Insurance company
U.S. Fish and Wildlife Services
Sea Mammal Rescue Center
U.S National Weather Service
NASA
State Farm Insurance
Mote Marine Aquarium
U.S. Geological Surveys
University of South Florida
Lake Louisa State Park
Pensacourt Health Club
Nigerian U.S. Embassy

Professional and Trade Services

Figure 6 indicates that service revenue comprised some $302,900 or 15% of 2005's revenue. The greater portion of this (77%) was due to residential installations, another 21% being repair services and a scant 3% being commercial.

Solar Direct's surveys of customers purchasing Vortex solar pool heaters and services indicate that over half of the purchasers learned about Solar Direct via the website.

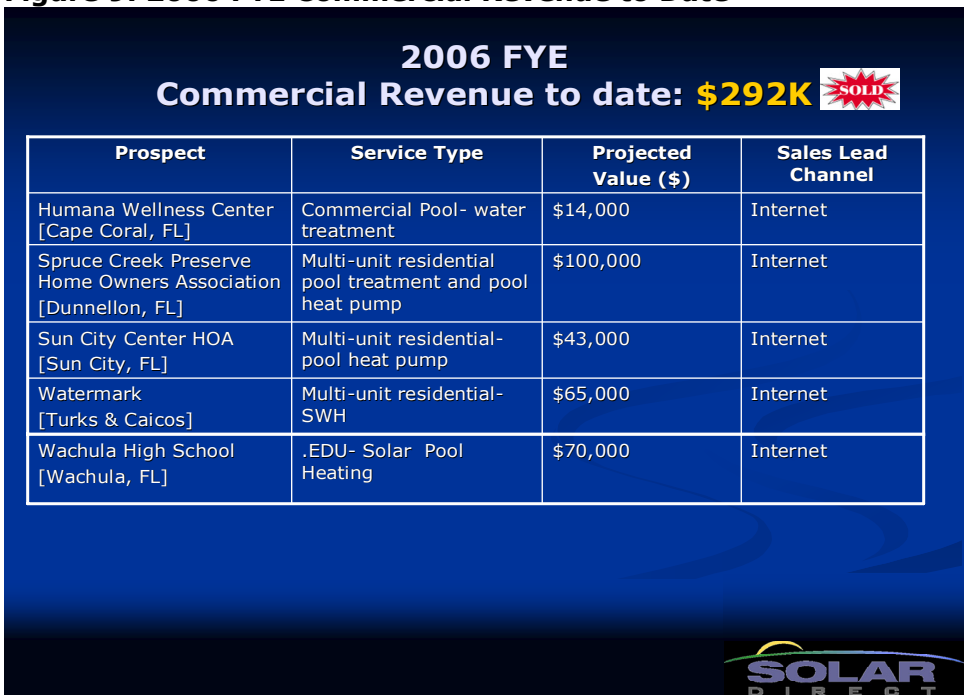
Figure 9 below shows incoming service revenue from five SD projects that were accepted in early 2006. Compared to 2005FY's total of $6,700 in commercial revenue, the first half of 2006FY results show $292,000 of service revenue already signed.

Two points are noteworthy from Figure 9. First three out of the five projects are for multi-unit residential projects for solar water heating and/or pool heating projects. This is an indicator of low-hanging fruit within this Florida market sector. We anticipate that more projects of this size and nature can be garnered, particularly as the press stories and case studies of these installations are published. The second point is ALL the incoming service projects were received as a result of Internet leads. This validates Solar Direct's business model that the online retail business is complementary to the service business line in providing a magnet for the solar contracting business.

Also of note, the $65,000 Watermark condominium project in the Turks and Caicos is the first "Azteca" project signed to date. The "Azteca" program, launched in mid-2005, was a marketing effort to solicit solar water heating (SWH) projects, consisting of a national press release and the creation of case studies documenting earlier Solar Direct SWH projects and their return on investment.

Of all the Solar Direct product/service areas, Solar Water Heating shows the greatest new opportunity, with Federal and State incentives supporting online Web sales to out-of-state customers and new Florida residential and commercial incentives expected in the 2007 timeframe.

Figure 9. 2006 FYE Commercial Revenue to Date

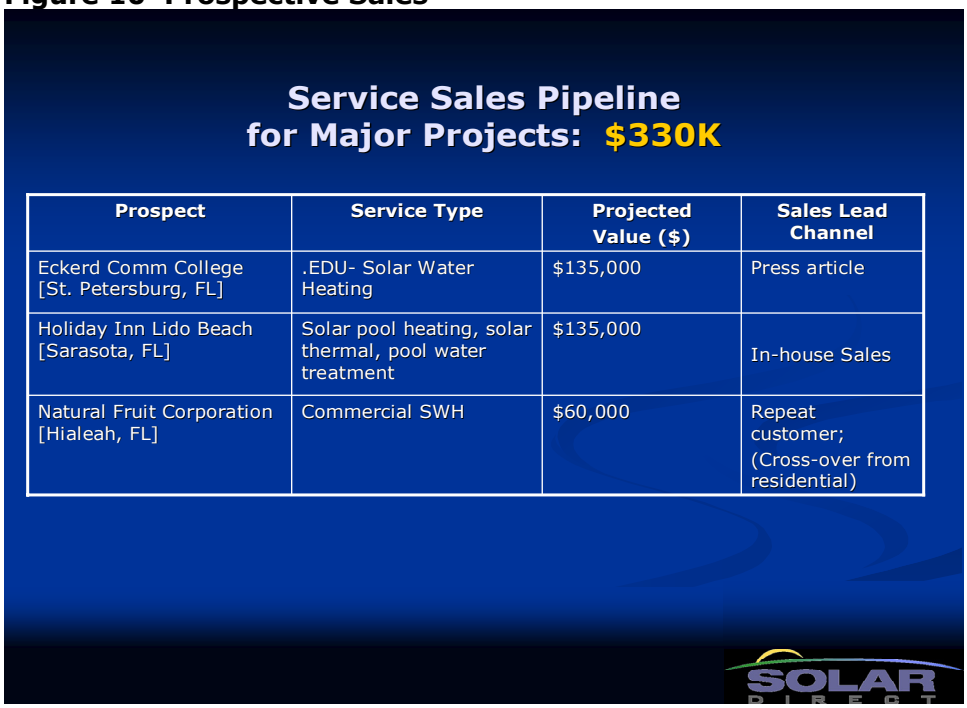


Prospect	Service Type	Projected Value ($)	Sales Lead Channel
Humana Wellness Center [Cape Coral, FL]	Commercial Pool- water treatment	$14,000	Internet
Spruce Creek Preserve Home Owners Association [Dunnellon, FL]	Multi-unit residential pool treatment and pool heat pump	$100,000	Internet
Sun City Center HOA [Sun City, FL]	Multi-unit residential- pool heat pump	$43,000	Internet
Watermark [Turks & Caicos]	Multi-unit residential- SWH	$65,000	Internet
Wachula High School [Wachula, FL]	.EDU- Solar Pool Heating	$70,000	Internet

SD Sales Pipeline

Figure 10 shows the sales pipeline for Solar Direct's design and contract services, with $330,000 of project revenue already anticipated for the second half of 2006FY.

Figure 10 Prospective Sales



Prospect	Service Type	Projected Value ($)	Sales Lead Channel
Eckerd Comm College [St. Petersburg, FL]	.EDU- Solar Water Heating	$135,000	Press article
Holiday Inn Lido Beach [Sarasota, FL]	Solar pool heating, solar thermal, pool water treatment	$135,000	In-house Sales
Natural Fruit Corporation [Hialeah, FL]	Commercial SWH	$60,000	Repeat customer; (Cross-over from residential)

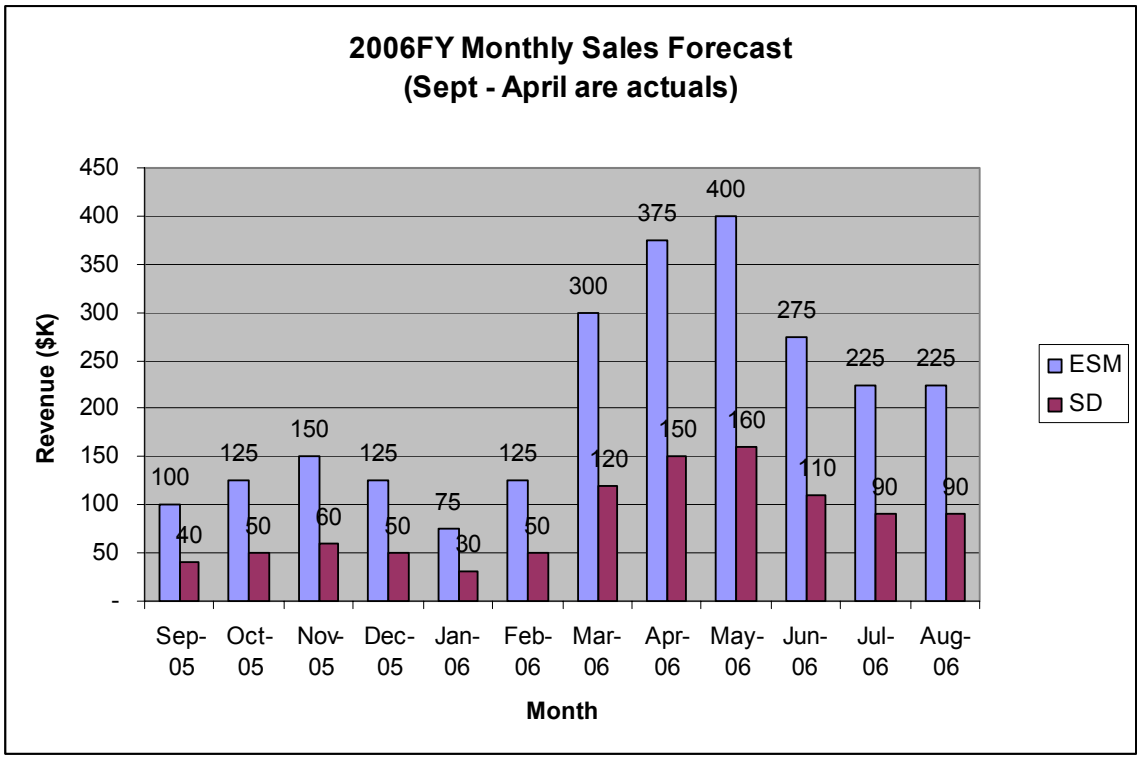
It is notable that, again, the solar water heating business is trending upward, with all proposed projects containing that component. The Eckerd Community College project may be a harbinger of good opportunity within the university/college market for installing environmentally-conscious energy-efficient solar water heaters. It is well known that the U.S. colleges and universities are on a rally to secure renewable energy alternatives as part of their facilities infrastructure. This is associated with the student community being very conscious of the global warming issue.

Sales Forecast

Sales Forecast by month

Figure 11 shows the monthly sales forecast extending out to the end of the 2006FY. The company anticipates that the strong product sales of March 06, $420,000 in revenue, will grow through May to reach $560K. During seasonally slow summer period, sales will be maintained at least at $315K/ month levels. The company is confident that ESM product sales will continue to comprise the majority (72%) of the year's sales revenue, while service sales will be grown to $1 M, a significant increase over 2005FY performance.

Figure 11 Remaining 2006 Sales Forecast By Month

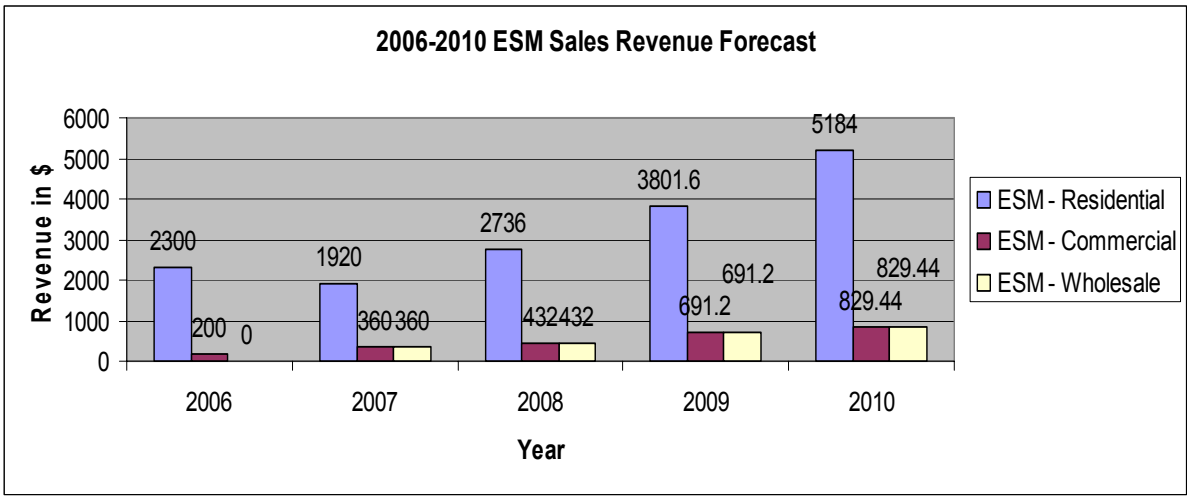


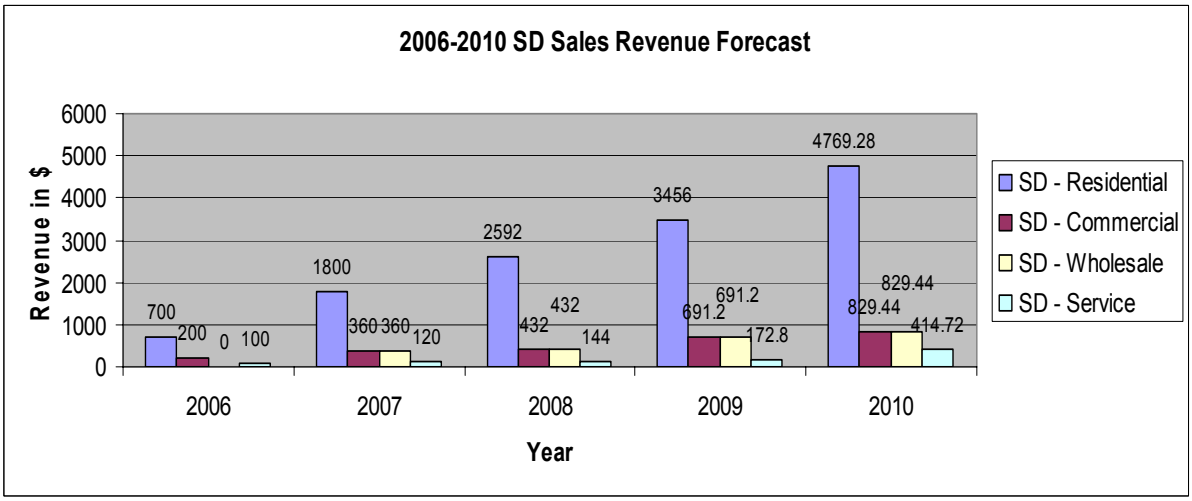
Sales Forecast 2006-2010

With Solar Direct's restructuring into two separate divisions as well as refocusing on its key industries for service opportunity, the company expects its revenue to rise from $2,197K in FY2005 to $13,686K in 2010, a 44.17% CAGR.

Figure 12 shows the break-outs of the revenue forecast by product and service type. Overall, it shows that while the ESM online sales will grow at a healthy 29% CAGR, the strongest growth is anticipated from the SD line of business, growing at a 62% CAGR from 2006-2010. By 2010, we expect the two lines of business to represent more balanced parts of the total company revenue.

Figure 12 Revenue Model & Forecast ESM & SD – 2006-2010 ($K)





The business plan projects that residential sales of online products will not only continue to grow, but will lead to more residential design and contracting services.

Key external factors fuelling the revenue growth include:

- The continuance of the ongoing Energy Crisis during this period.
- The existence of State Renewable Portfolio Standards (RPSes) which mandate a certain percentage of renewable energy for a state by a set deadline.
- Ongoing and future Federal and state solar incentives**.**

Key company internal growth factors underlying this growth include:

- Divisionalization of the company, providing better focus on each line of business.
- Securing of term loan in 2006FY**.**

Marketing Strategy

Market Positioning Statement

For the nationwide residential market, particularly the large emerging base of energy-conscious consumers, the solar water and solar pool heating products satisfy a growing need for cost-effective, environmentally responsible solutions. Unlike direct manufacturer and contractor competitors, the company can leverage its strong, established Internet presence.

Even for its service business in these areas, the company is located very near Sarasota County which has one of the strongest "Green Building" and renewable energy initiatives in the state. Sarasota is the headquarters of the Florida Green Building Council (FGBC), whose member builders' architects and designers compete on building energy-saving homes and commercial buildings. This "green group" can provide an excellent draw for solar water heating, solar pool heating as well as solar PV product sales, design expertise and others services.

Marketing Program Strategy

TheEnergySupermarket's B2C Marketing Efforts

In order to improve the key success factors for their online Energy Supermarket, Solar Direct will do the following:

- To maintain a competitive selection enticing buyers (and get them to repeat visit), the online store will be updated with new products more frequently.

- To further improve the web traffic and conversion rates (through more qualified visitors), build an web marketing affiliate program, an effective online "dealer/distributor" network[21] with complementary partners, as examples:[22]
    - Online renewable energy publications (Renewable Energy Access; OrganicStyle.com etc.).
    - Socially responsible mutual fund sites online.
    - Green marketing and market research sites, such as The Natural Marketing Institute, Conscious Media, Yoga Journal and non-profits such as Co-op America, The Apollo Alliance and Rebuild America.
    - Other non-competing "green" Super Mall sites, e.g. Greenhomes.com, that do not carry energy products or need a solar-savvy partner.
- To improve the purchase conversion rate, increase customer confidence at the POS (shopping cart) point though such methods as: 1. initiating a believable customer-based rating system per product and 2. utilizing short but hi-impact customer testimonials of product use.
- To improve the "Convenience Factor" and encourage repeat business, provide continued optimizations of online shopping experience. One example is to implement Amazon's "One click" shopping, where customer registration information is stored.
- To leverage more Internet leads into our solar contracting service, engage in a Florida state-wide promotional email campaign that promotes the product technologies and the service offering.
- In later stages, to leverage more Internet leads and grow The Energy Supermarket' potential, engage in national promotional email campaigns targeting particularly the RPS states.
- Continue with highly successful PPP search advertising.

In 2004, 87 percent of retailers who participated in the study used pay-for-performance search placement and spent more than twice as much from their marketing budgets on this category than they did in 2003 ($877,630 in 2004 vs. $399,923 in 2003).

B2B Service Marketing Efforts

In line with the select target markets, Solar Direct will invest resource and marketing funds into the following activities:

[21] These deals will be sought with partner site properties which have comparable or greater traffic ranking than Solar Direct's TESM in non-competing but complementary LOHAS product/service/content markets.
[22] This will require an additional $50K minimum to achieve market impact; planned in second round financing.

- Business development efforts with partners like the Florida Green Builder Coalition (n=400[23]) as well as Home owner associations (n= 4000[24]).

- Case Studies of installations in each market, including rationale for purchase and expected ROI.

- Targeted marketing mailings at facilities managers within these market sectors, highlighting the high-need products.

- Cooperative marketing efforts and content cross-plays with the Energy Supermarket division leveraged through the affiliate program and email campaigns.

Sales Strategy

Solar Direct's e-tail web site currently uses a very low cost-sales leads model, principally using one-to-many marketing and advertising campaigns to promote Web traffic and conversions. A good example of this is the ServiceMagic participation in late 2005 which has resulted in $40,000 worth of sales from a few hundred dollars in pay-per-lead fees. These efforts will continue to be supplemented by the creation of the Affiliate program complemented by aggressive national and state-wide email marketing campaigns promoting the site's products.

For the contract services side of the business, Solar Direct's sales force requires qualified Florida leads in high-yield market sectors. Table 4 shows the service projects that Solar Direct has accomplished by technology and by market sector. Overall, most of these projects were enlisted via Internet leads from the Website.

Table 4 also shows that Solar Direct has been most successful in securing design and service projects in the Solar Water Heating category within the government, educational and hotel/resort markets. Another market which holds high potential is sales of pool purification products in the Florida multi-unit residential communities and Wellness Center/hospital category.

Looking out to 2006-2009 sales efforts, Solar Direct's service business will leverage the case studies of successful projects completed in these market sectors to strike out new contracts. Market research of these sectors will identify choice accounts, principally multi-residential projects, college/university sites and Wellness Center/hospital sites within Florida that have strong "Green" initiatives. As an example, new state and municipal building projects within counties with "Green" mandates, such as Sarasota County, Orange County and Miami-Dade County will be pursued. A good example of a confluence of this sales target strategy is Orange County in Central Florida which has both a green building initiative as well as strong state-based educational growth. Orange County is projecting builds of over 100 new elementary and middle schools over the next ten years.

[23] Number of companies belonging to the Florida Green Building Coalition and US-Green Building Council within Florida.
[24] Membership size of Community Association Leadership Lobby

Table 4. 2003-2006 Projects

Solar Direct 2003-2006 Projects
Technology Expertise by Market Sector

	Pool Purification	Heat Pump	Solar Pool Heating	Solar Water Heating
.EDU/College			Wachula H.S.	Eckerd College??
.GOV				Us Embassy Nigeria; FDEP- Lake Luisa
.ORG				Boy Scouts
Hotel/Resort			Pensacourt	
Multi-unit Residential	Spruce Creek HOA; Sun City HOA			Watermark
Wellness Center/ Hospital	Humana			

Project Included High Value engineering design services

Located in the hot bed of Southwest Florida's Green Building movement, Solar Direct joined the Florida Green Building Coalition (FGBC.org) in late 2005. Active membership will allow the company to deepen its ties to the Green builders, designers and architect community so as to identify winning projects.

Also aiding Solar Direct's contract services revenue potential, the company was recently approached by the Manatee County Economic Development Board to explore more in-depth relations and opportunities for Solar Direct.

7.0 Management Summary

Organizational Structure

Solar Direct today has a staff of 18. There are three executives, including Dale Gulden, CEO, Kirk Maust, COO and Cindy Lemery, Executive Administrator.

The current departments and headcounts include:

Executive:	3
Sales, Media & Marketing:	8
Finance, Operations & Engineering:	7

Currently 6 staff members work from remote office locations, including Vancouver, Texas, Missouri, and Florida via the companies Virtual Private Network.

Overall the company is run lean and efficiently. There is currently no middle management. Some overlap in various positions and departments exist as several staff members perform more than one role.

Several areas are currently outsourced including Company and Personal Coaching, Public Relations, and Legal services.

Management Team

Serving as Solar Direct's CEO and Director of Marketing, **Dale Gulden** is a highly knowledgeable and experienced 26-year veteran of the solar and renewable energy industry. In 1986, with a degree in Business Marketing and Economics, Mr. Gulden partnered with Kirk A. Maust, a leading solar engineer and eco-entrepreneur, to found Solar Direct.

Mr. Gulden also oversees marketing and sales with an expertise that has accelerated Solar Direct into the solar industry highest ranking e-commerce destination for renewable technology. Currently, Mr. Gulden is recognized within the industry as one of the leading authorities in the marketing of both geothermal heating and cooling technology and commercial solar pool heating. Former President of the Gulf Coast Chapter of the Florida Solar Energy Industry Association (FlaSEIA), Mr. Gulden often serves as a keynote speaker to environmental and business groups, regarding the green benefits of solar and renewable energy technologies.

Kirk Maust serves as Solar Direct's Chief Operating Officer and head of engineering. His responsibilities include overseeing Engineering, the IT Department, e-commerce Web operations as well as expertise with commercial solar projects. Kirk engineered the web site, e-commerce back-office as well as search engine marketing strategy and implementation.

Mr. Maust holds a Florida State Certified Solar License, and is a current member and former Vice President of the Gulf Coast Chapter of the Florida Solar Energy Industry Association. Mr. Maust earned one of the nation's first degrees in solar and renewable energy technology. He graduated from Pennsylvania State University's Mechanical and Nuclear Engineering Department.

Management Team Gaps

Short term, critical management functions that must be put into place include the following:

- Director of Marketing

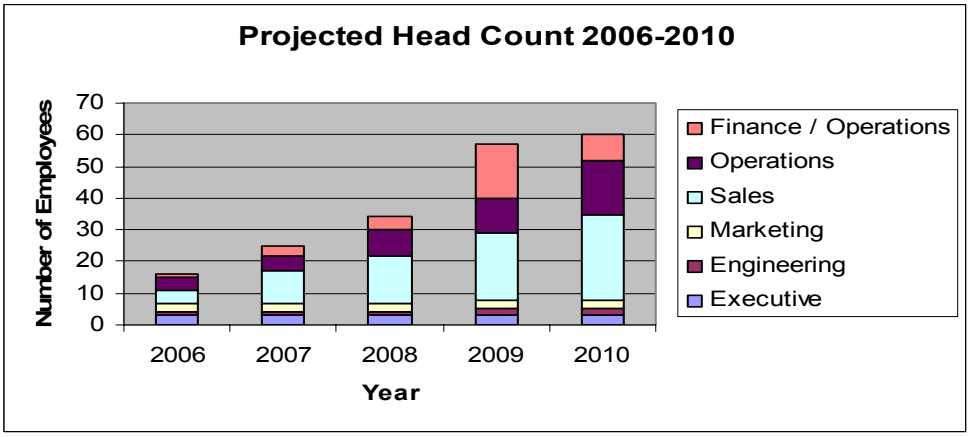
Longer term, other key management hires or internal promotions include the following positions:

- Vice President of Sales (2010)
- Operations Manager (2010)
- Controller (2009)

Personnel Plan

This business plan anticipates that the company can achieve robust revenue growth while remaining profitable, growing from today's staff of 14 to 63 people by 2010. We expect to double current staff levels in the 2007-2008 timeframe then double again by 2010. Solar Direct's current Sales/Employee is $158k/employee and will grow to $216K/employee in 2010. Figure 14 shows the anticipated headcount forecast by department. Key areas of employee growth include Sales, Operations and Marketing. While the company today is focused on tele-sales, over time, sales personnel will be hired to focus on contractor sales, commercial and outside sales. These hires are critical to growing the SDCB line of business.

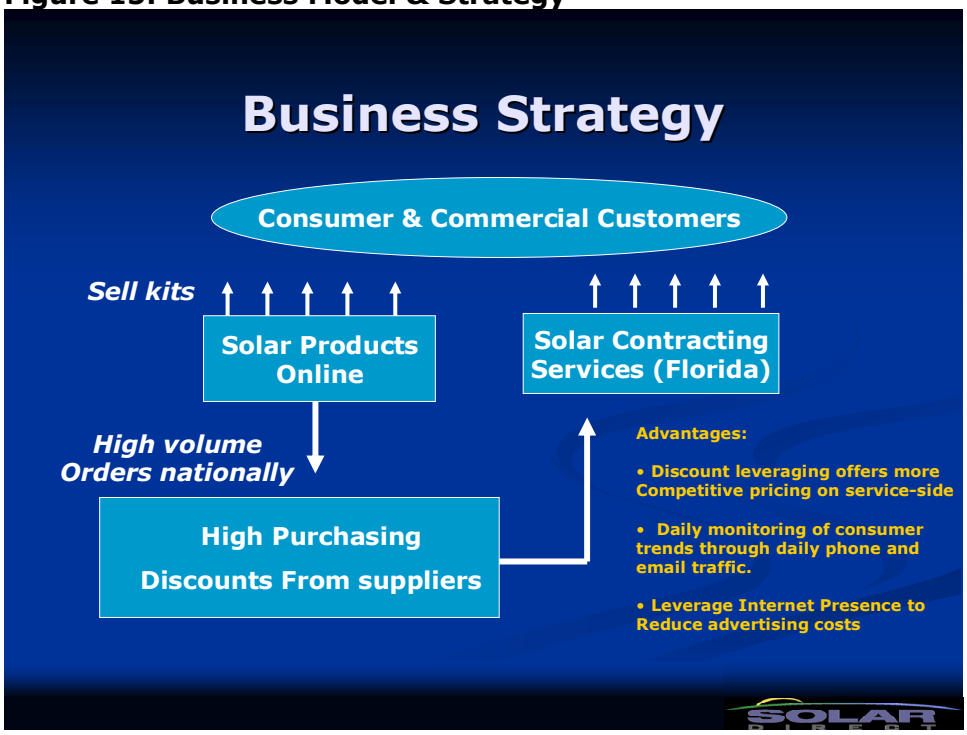
Figure 14. Hiring Plan: 2006 - 2010



8.0 Business Model & Strategy

Figure 15 provides an overview of the company's business model. The model envisions two components: online solar product sales nationwide and contracting services in Florida. The online products principally target consumers (residential) while the contracting services target both consumers and commercial. The crux of the plan is that high volume product sales (via the internet) would allow high equipment discounts which can be leveraged into the contracting service business, allowing highly competitive pricing. The model also envisions that the internet is the most cost-effective channel for advertising even the contracting service business.

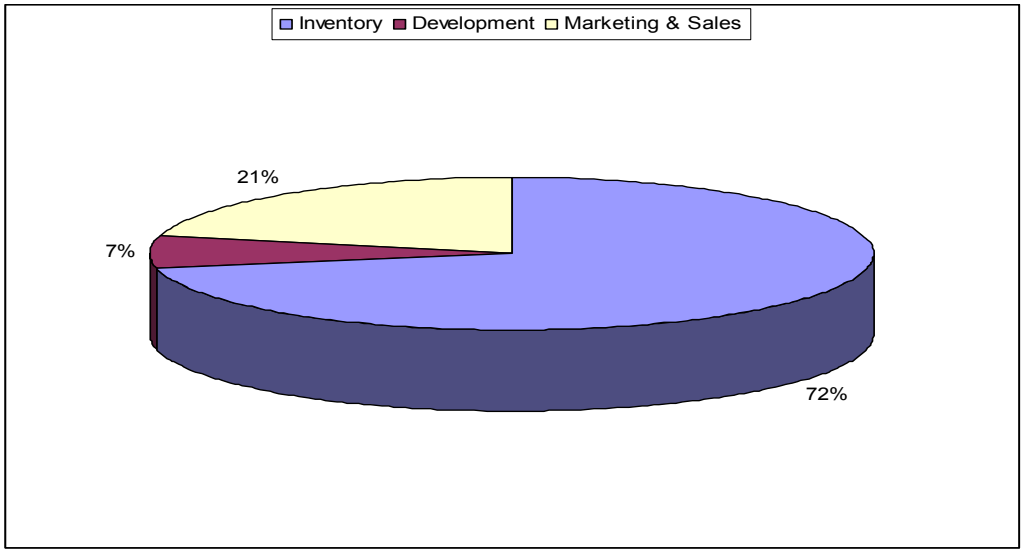
Figure 15: Business Model & Strategy



9.0 Use of Borrowed Funds

Figure 16 shows the first year's use of proceeds from the capital investment. It shows that all of the fund will be applied toward purchasing inventory, marketing, and strategic development.

Figure 16. Use of Proceeds- Year 1



10.0 Financial Plan Highlights

The company plans to secure a loan of $250,000. Additional investment may be required to fund expansion in the 3rd year of operations.

Important Assumptions

To go forward, the plan assumes the following:

- The solar technology markets grow at 15% per year.
- The online shopping trends continues
- The company has access to funding to re-shape and rebuild the company so that the two business lines can leverage each other.

Projected Profit and Loss

During the plan years sales will grow in all categories but especially in the contracting and design divisions (SD Residential, SD Commercial, SD Wholesale, and SD Service). The ESM divisions will grow at a 29% CAGR and SD at 62%.

Gross Margin will grow from 44% of sales to 47%. This comes about due to the increased sales in SD-Service which is the highest margin division of the company; an increase in ESM-Commercial margin from 10% to a more normal 47%; and incremental increases in all divisions due to increased ability to capture discounts and better terms for faster payments.

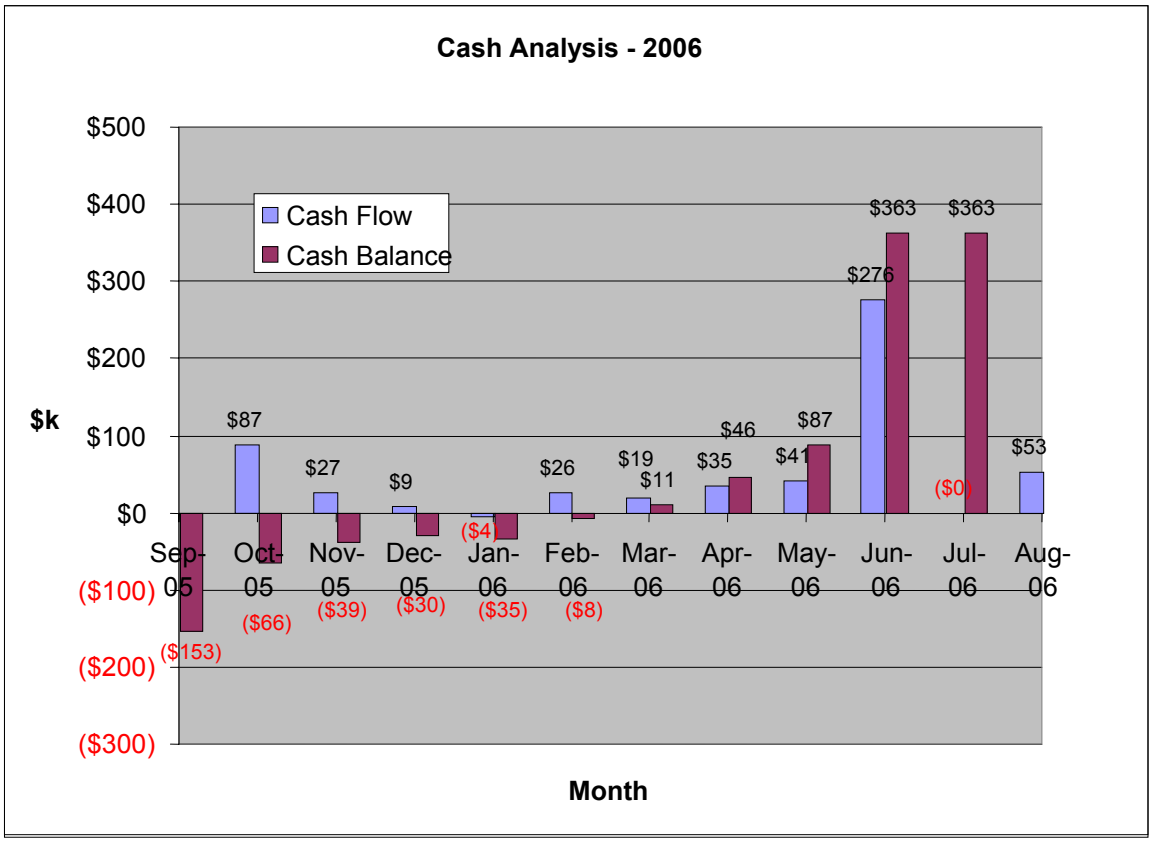
Expenses: Total operating expenses will decrease by 2% of sales primarily due to Executive salaries growing less than sales. Sales and Marketing will increase by 1% to accommodate more sales and marketing salaries. Research and Development will grow in dollars but stay at a constant 1% of sales.

As a result Pre-Tax Net income will increase from $246,000 to $1,776,000, a CAGR of 64%.

Cash Flow

Operating Activities: The increase in required cash for increased Accounts Receivable and Inventory will nearly be provided by the cash provided by increased Accounts Payable. Given that offset, the profitability of increased sales will generate cash sufficient to purchase necessary equipment and pay back creditors. The plan shows a very healthy interest coverage of 7X to 30X.

Figure 17



Projected Balance Sheet

With the big growth in sales and profitability the company will generate a large amount of cash. By August 2010 the cash balance will be $2.7 million (in the absence of alternate uses for the cash).

Accounts Receivable will grow from $104,000 to $375,000. Days of Sales outstanding will remain about constant at 10 (The Company does not issue credit directly to customers. Receivables are credit card receipts in process).

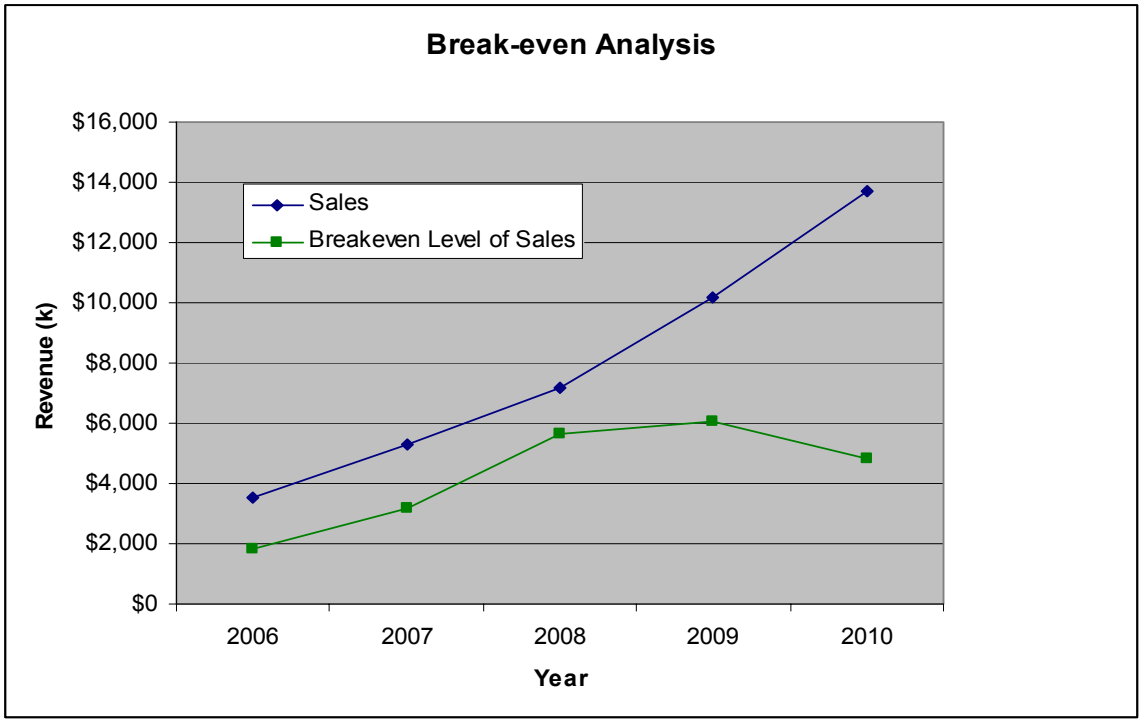
Inventory will increase to $488,000. With the increase in sales, this will be an increase in inventory turnover from 21 times to 28 times. This will be accomplished with a more just-in-time purchasing system and more drop shipments direct from manufacturers to customers.

Property, Plant, and Equipment: Investment in PP&E will only slightly outpace depreciation. Due to the importance of computer equipment to the operations of the Energy Supermarket Office Equipment and Computers & Software will generate the bulk of spending needs in Long Term Assets.

Accounts Payable: will grow as fast as vendors allow without losing discounts and opportunistic buys. Days Payable Outstanding, which is (Inventory) Payables divided by Cost of Goods Sold times the number of days in the period, revolves around 30 days.

Break-Even Analysis

Figure 18



	2006	2007	2008	2009	2010
Sales	3,500	5,279	7,199	10,195	13,686
Variable Gross Margin	53%	51%	50%	49%	49%
Variable Expenses	25%	25%	25%	25%	25%
Total Variable Costs	2,730	4,012	5,399	7,544	10,128
Contribution to Fixed Costs	770	1,267	1,800	2,651	3,558
Variable Net Margin %	22%	24%	25%	26%	26%
Variable Net Margin $	770	1,267	1,800	2,651	3,558
Fixed Costs	403	763	1,405	1,581	1,253
Breakeven Level of Sales	1,832	3,180	5,621	6,082	4,817
Excess of Sales Over Breakeven	1,668	2,099	1,578	4,113	8,869
Sales:Breakeven Ratio	1.9	1.7	1.3	1.7	2.8

In all years of the plan the company has a healthy margin of safety of sales above the breakeven point. In the third year of the plan when the company expands its staff and facilities the lowest sales to breakeven ratio of 1.3 is attained. In all other years sales are at least 70% above the break-even point.

Ratios

Table 4 shows several business ratios based on the plan.

Table 4 Business Ratios Table

Profitability Ratios	**2006**	**2007**	**2008**	**2009**	**2010**
Gross Margin	44%	46%	47%	47%	47%
Net Profit Margin	5%	5%	7%	9%	10%
Return on Assets	25%	25%	31%	32%	36%
Return on Equity	99%	59%	25%	13%	10%
Activity Ratios					
A/R Turnover	33.8	41.2	41.2	36.5	36.5
Inventory Turnover	11.8	16.3	16.4	14.6	14.8
Payables turnover	6.6	7.8	7.8	7.2	7.3
Total Asset Turnover	4.7	4.9	4.2	3.5	3.6
Debt Ratios					
Debt to Net Worth	3.0	1.4	0.8	0.5	0.5
Liquidity Ratios					
Current Ratio	2.2	2.7	3.4	3.7	3.7
Quick Ratio	1.7	2.3	2.9	3.3	3.2

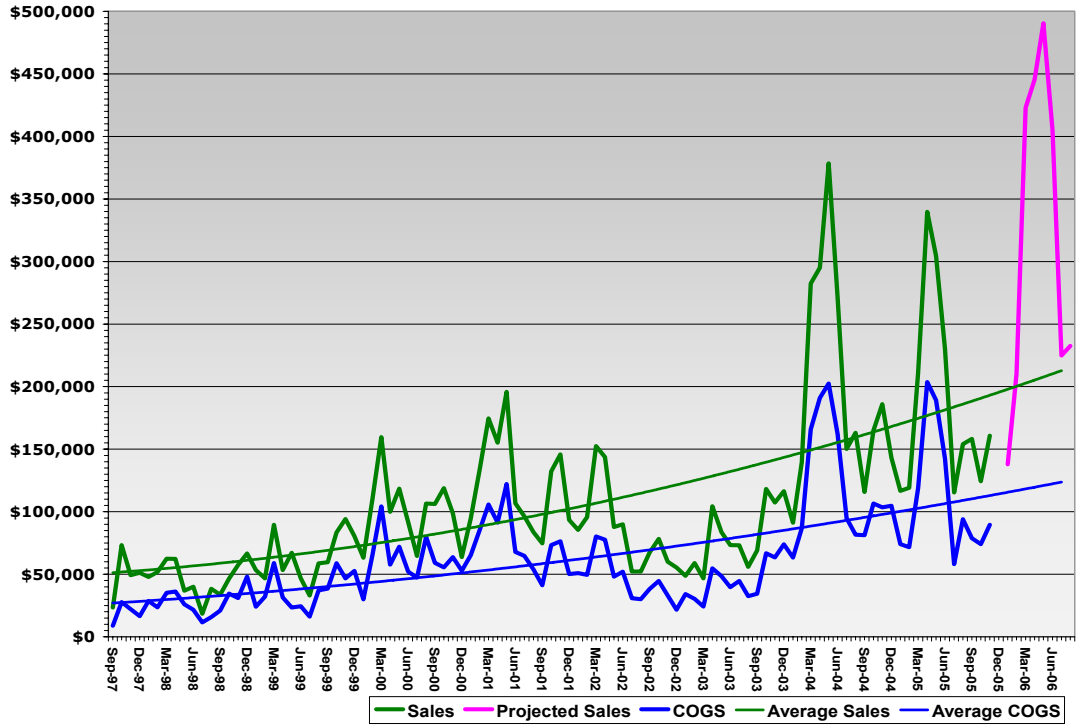
The Current Ratio is the current assets divided by current liabilities and is a measure of a company's near term ability to repay its liabilities and weather economic turmoil. The Quick Ratio is Cash plus Accounts Receivable divided by Current Liabilities. The Quick Ratio, also known as the Acid Test, is a stronger measure of a company's ability to pay its debts because it does not rely on the liquidation of inventory to generate cash for repayment purposes. Nationally, retailers of solar heating equipment in the small business sector averaged a current ratio of 2.25 and a quick ratio of 1.03 in 2005. Solar Direct projects finishing 2006 at or better than those averages. Both the Current and Quick ratios show a healthy ability to repay Solar Direct's creditors.

Debt to Net Worth is a company's liabilities divided by owner's equity and is a longer term measure of a company's ability to repay debt. Nationally, retailers of solar heating equipment in the small business sector averaged a debt to equity of 0.81. Solar Direct will begin the plan years with a higher debt to equity of 3.0 because equity begins at a low point of the plan. By year 3 of the plan (2008) debt to equity will be managed down to a respectable 0.8.

Even though profitability is increasing at a very high rate the owners' equity increases even faster on a percentage basis. For this reason return on equity decreases from the beginning of the plan to the end. 99% ROE is not sustainable; 10% is.

Appendix 1. Financials

Historical Sales Revenue and COGS Trend



Historical Financials

(in thousands)

Profit (Loss)		2003		2004		2005
ESM - Residential	$	296	$	782	$	813
ESM - Commercial	$	52	$	137	$	143
ESM - Wholesale	$	52	$	137	$	143
SD - Residential	$	276	$	729	$	758
SD - Commercial	$	52	$	137	$	143
SD - Wholesale	$	52	$	137	$	143
SD - Service	$	20	$	53	$	55
Total Revenue	**$**	**801**	**$**	**2,113**	**$**	**2,197**
Cost of Sales		445		1,322		1,377
Gross Profit	$	356	$	790	$	820
Gross Profit %		*44%*		*37%*		*37%*
Operating Expenses						
Payroll	$	101	$	185	$	339
Sales & Marketing		126		340		379
G&A		108		227		70
Depreciation		13		9		12
Amortization of Capitalized R&D		-		-		-
Total Operating Expenses	$	347	$	761	$	800
Operating Income	**$**	**9**	**$**	**29**	**$**	**20**
Interest Income	$	-	$	-	$	-
Interest Expense		(1)		(11)		(2)
Net Income Before Tax	$	7	$	18	$	18
Income Tax	$	-	$	-	$	-
Net Income	$	7.3	$	18.3	$	17.9
% of Total Revenue		*1%*		*1%*		*1%*
EBITDA		**$21**		**$38**		**$32**

Historical Financials

(in thousands)

Balance Sheet		2003		2004		2005
Cash	$	(6)	$	47	$	22
Investments		-		-		-
Accounts Receivable		13		94		34
Notes Receivable		-		-		-
Inventory		25		(38)		51
Other Current Assets		-		-		-
Total Current Assets	$	32	$	103	$	107
Fixed Assets						
Land	$	-	$	-	$	-
Buildings		-		-		-
Accumulated Depreciation		-		-		-
Building/Leasehold Improvements		-		-		-
Accumulated Depreciation		-		-		-
Automobile		54		55		18
Accumulated Depreciation		(39)		(43)		(11)
Furniture & Fixtures		4		5		7
Accumulated Depreciation		(1)		(2)		(3)
Machinery & Equipment		5		6		7
Accumulated Depreciation		-		-		(0)
Office Equipment		15		25		25
Accumulated Depreciation		(5)		(7)		(10)
Computers & Software		4		40		43
Accumulated Depreciation		(2)		(4)		(11)
Total Fixed Assets	$	34	$	74	$	65
Other Assets	$	84	$	64		46
Total Assets	$	150	$	241	$	217
Current Liabilities						
Short Term Debt	$	-	$	-	$	-
Accounts Payable		109		203		206
Other Payables		21		26		6
Accrued Liabilities		4		4		0
Total Current Liabilities	$	134	$	233	$	213
Long Term Debt	$	14	$	7	$	4
Total Liabilities	$	148	$	240	$	216
Shareholder Equity						
Common Stock	$	(5)	$	(17)	$	(17)
Retained Earnings		7		18		18
Dividends Payable		-		-		
Total Shareholders' Equity	$	2	$	1	$	1
Total Liabilities & Equity	$	150	$	241	$	217

People / Space Requirements

Assumptions		(000)	2005	2006	2007	2008	2009	2010
Projected Sales			$ 2,197	$ 3,500	$ 5,279	$ 7,199	$ 10,195	$ 13,686
Square Feet / Employee	110							
Avg. Monthly Cost/Square Foot								
- Office Space	$0.53							
- Manufacturing/Warehouse	$0.53							

Executive	Job Title	Salary						
Dale Gulden	CEO	$ 85	0.4	1.0	1.0	1.0	1.0	1.0
Kirk Maust	COO	85	0.2	1.0	1.0	1.0	1.0	1.0
Cindy Lemery	Admin Assistant	23	1.0	1.0	1.0	1.0	1.0	1.0
Total Executives			1.6	3.0	3.0	3.0	3.0	3.0
% of All Employees			*12%*	*19%*	*12%*	*9%*	*6%*	*5%*

Engineering		Salary	2005	2006	2007	2008	2009	2010
	Senior Engineer	$ 33	0.0	0.0	0.0	0.0	1.0	1.0
	Project Engineer	29	0.5	0.5	0.8	1.0	1.0	1.0
Total Engineering			0.5	0.5	0.8	1.0	2.0	2.0
% of All Employees			*4%*	*3%*	*3%*	*3%*	*4%*	*3%*

Marketing		Salary	2005	2006	2007	2008	2009	2010
	Dir of Marketing	$ 31	0.0	0.0	0.0	0.0	1.0	1.0
	Marketing Assistant	25	0.1	0.3	0.3	0.5	1.0	1.5
	Dir of Media Services	28	1.0	1.0	1.0	1.0	1.0	1.0
	Designer	25	0.0	0.0	0.0	0.0	0.0	0.5
	MSII Manager	31	0.1	0.1	0.1	0.1	0.1	0.5
	Product Designer	29	0.9	0.9	0.9	0.9	0.9	1.0
	Marketing Copywriter	23	0.5	0.5	1.0	1.0	1.0	1.0
Total Marketing			2.6	2.8	3.3	3.5	5.0	6.5
% of All Employees			*19%*	*18%*	*13%*	*10%*	*10%*	*10%*

Sales		Salary	2005	2006	2007	2008	2009	2010
Staff Funded by Operations		(000)						
	VP Sales	$ 31	0.0	0.0	0.0	0.0	0.0	1.0
	Sales Manager	31	0.4	0.4	1.3	1.3	1.5	2.0
	Phone Sales	33	2.8	2.8	3.0	5.0	7.0	9.0
	Contractor Sales	20	0.4	0.4	1.0	2.0	2.5	3.0
	Commercial Sales	33	0.4	0.4	1.0	2.0	3.5	4.0
	Outside Sales	50	0.3	0.3	3.8	5.0	6.3	8.0
Total Sales			4.1	4.1	10.0	15.3	20.8	27.0
% of All Employees			*30%*	*27%*	*40%*	*44%*	*43%*	*43%*

Finance / Operations		Salary	2005	2006	2007	2008	2009	2010
	Comptroller	$ 31	0.0	0.0	0.0	0.5	0.5	0.8
	Bookkeeper	25	0.7	0.7	1.5	1.8	2.5	3.0
	A/R	21	0.4	0.4	0.8	0.8	1.3	1.5
	A/P	21	0.2	0.2	0.6	0.8	1.3	1.5
	Sales Order Processer	21	0.3	0.3	0.3	0.3	0.5	1.0
Total Finance/Operations			1	1	3	4	6	8
% of All Employees			*11%*	*10%*	*12%*	*12%*	*13%*	*12%*

Operations	Salary	2005	2006	2007	2008	2009	2010
Operations Manager	$ 33	0.0	0.0	0.0	0.0	0.0	1.0
Warehouse Manager	31	0.3	0.3	0.3	0.3	0.3	0.5
Asst Warehouse Manager	29	0.6	0.6	1.0	1.3	1.5	2.0
Stocking/Shipping	21	0.5	0.5	0.5	0.8	1.0	2.0
Purchasing Agent	25	0.3	0.3	0.3	0.3	0.3	0.5
Receiving Agent	21	0.0	0.0	0.0	0.3	0.3	0.5
Order Tracking	21	0.1	0.1	0.1	0.3	0.3	0.5
Installation/Service Manager	31	0.0	0.0	0.0	0.5	1.0	1.0
Scheduling Coordinator	25	0.2	0.2	1.0	1.0	2.0	2.0
Customer Service Manager	25	0.0	0.0	0.0	0.0	0.5	1.0
Customer Service Rep	25	0.1	0.1	0.5	1.0	1.0	2.0
IT Manager	37	0.0	0.0	0.0	0.0	0.3	0.5
Programmer	31	0.8	0.8	0.8	1.0	1.5	2.0
Network Technician	29	0.3	0.3	0.3	0.3	0.3	0.5
Web Master	31	0.5	0.5	0.5	1.0	1.0	1.0
Total Production Management		3.5	3.5	5.1	7.8	11.0	17.0
% of All Employees		*25%*	*23%*	*20%*	*22%*	*23%*	*27%*

Total Headcount		**14**	**15**	**25**	**35**	**48**	**63**
Sales / Employee (000)		$158	$227	$209	$209	$214	$216
Percentage of Remote Users	**25%**						
Total Office Space Required (sq ft)		1650	1650	2084	2846	3939	5218
Manufacturing / Production / Warehouse Space (sq ft)		1650	1650	3754	3754	5000	5000
Total Space Required		**3,300**	**3,300**	**5,838**	**6,600**	**8,939**	**10,218**
Expected Rent per Month (in thousands)		$ 1.7	$ 1.7	$ 3.1	$ 3.5	$ 4.7	$ 5.4

Income Statement

:: Years 1-5 x Year

Solar Direct

(in thousands unless otherwise noted)

Sales	2006	% of Total Sales	2007	% of Total Sales	2008	% of Total Sales	2009	% of Total Sales	2010	% of Total Sales
ESM - Residential	2,300	*66%*	1,920	*36%*	2,735	*38%*	3,802	*37%*	5,184	*38%*
ESM - Commercial	200	*6%*	360	*7%*	432	*6%*	691	*7%*	829	*6%*
ESM - Wholesale	-	*0%*	360	*7%*	432	*6%*	691	*7%*	829	*6%*
SD - Residential	700	*20%*	1,800	*34%*	2,591	*36%*	3,456	*34%*	4,769	*35%*
SD - Commercial	200	*6%*	360	*7%*	432	*6%*	691	*7%*	829	*6%*
SD - Wholesale	-	*0%*	360	*7%*	432	*6%*	691	*7%*	829	*6%*
SD - Service	100	*3%*	120	*2%*	144	*2%*	173	*2%*	415	*3%*
Net Sales	$ 3,500	*100%*	$ 5,279	*100%*	$ 7,199	*100%*	$ 10,195	*100%*	$ 13,686	*100%*
Cost of Goods Sold										
Material	$ 1,761	*50%*	$ 2,403	*46%*	$ 3,205	*45%*	$ 4,462	*44%*	$ 5,928	*43%*
Labor	107	*3%*	278	*5%*	378	*5%*	529	*5%*	717	*5%*
Total Variable COGS	$ 1,868	53%	$ 2,681	51%	$ 3,583	50%	$ 4,991	49%	$ 6,645	49%
Total Fixed Cost of Goods Sold	$ 108	3%	$ 159	3%	$ 251	3%	$ 371	4%	$ 590	4%
Total Cost of Goods Sold	**$ 1,976**	56%	**$ 2,840**	54%	**$ 3,834**	53%	**$ 5,362**	53%	**$ 7,236**	53%
Gross Profit	**$ 1,524**	44%	**$ 2,439**	46%	**$ 3,365**	47%	**$ 4,833**	47%	**$ 6,450**	47%
Operating Expenses										
Sales & Marketing	$ 881	*25%*	$ 1,483	*28%*	$ 1,953	*27%*	$ 2,688	*26%*	$ 3,612	*26%*
Research & Development	26	*1%*	25	*0%*	34	*0%*	77	*1%*	79	*1%*
G & A (without Depreciation)	339	*10%*	495	*9%*	597	*8%*	739	*7%*	900	*7%*
Depreciation	17	*0%*	20	*0%*	21	*0%*	26	*0%*	23	*0%*
Total Operating Expenses	**$ 1,263**	36%	**$ 2,023**	38%	**$ 2,605**	36%	**$ 3,530**	35%	**$ 4,614**	34%
Income from Operations	**$ 261**	7%	**$ 415**	8%	**$ 759**	11%	**$ 1,303**	13%	**$ 1,836**	13%
Interest Income	$ -	*0%*	$ -	*0%*	$ -	*0%*	$ -	*0%*	$ -	*0%*
Interest Expense	(2)	*0%*	(25)	*0%*	(25)	*0%*	(25)	*0%*	(25)	*0%*
Income Before Taxes	**$ 258**	7%	**$ 390**	7%	**$ 734**	10%	**$ 1,278**	13%	**$ 1,811**	13%
Taxes on Income*	$ -	*0%*	$ -	*0%*	$ -	*0%*	$ -	*0%*	$ -	*0%*
Net Income (Loss)	**$ 258**	7%	**$ 390**	7%	**$ 734**	10%	**$ 1,278**	13%	**$ 1,811**	13%
Growth Rate			*51%*		*88%*		*74%*		*42%*	
EBITDA	$ 278		$ 436		$ 781		$ 1,329		$ 1,859	

Balance Sheet

:: Years 1-5 x Year

Solar Direct

(in thousands)

Assets	2006	2007	2008	2009	2010
Current Assets					
Cash	$ 489	$ 909	$ 1,660	$ 2,956	$ 3,793
Investments	-	-	-	-	-
Accounts Receivable	104	128	175	279	375
Notes Receivable	-	-	-	-	-
Inventory	168	175	234	367	488
Other Current Assets	-	-	-	-	-
Total Current Assets	$ 760	$ 1,212	$ 2,069	$ 3,602	$ 4,655
Property, Plant & Equipment					
Land (non-depreciable asset)	$ -	$ -	$ -	$ -	$ -
Buildings	-	-	-	-	-
Building/Leasehold Improvements	-	-	-	-	-
Automobile	18	18	18	18	18
Furniture & Fixtures	7	9	11	13	16
Machinery & Equipment	10	15	20	25	30
Office Equipment	31	39	47	55	65
Computers & Software	44	52	60	68	78
Accumulated Depreciation	(53)	(73)	(95)	(121)	(145)
Total Net Property, Plant & Equipment	$ 58	$ 60	$ 62	$ 59	$ 63
Other Assets	$ -	$ -	$ -	$ -	$ -
Total Assets	**$ 818**	**$ 1,272**	**$ 2,131**	**$ 3,661**	**$ 4,718**
Liabilities & Owners' Equity					
Current Liabilities					
Short Term Debt	$ -	$ -	$ -	$ -	$ -
Accounts Payable	301	365	489	741	987
Other Payables	7	7	7	7	7
Accrued Liabilities	0	0	0	0	0
Total Current Liabilities	$ 308	$ 372	$ 496	$ 749	$ 995
Long Term Debt	$ 250	$ 250	$ 250	$ 250	$ -
Total Liabilities	$ 558	$ 622	$ 746	$ 999	$ 995
Stockholder Equity					
Common Stock	$ (17)	$ (17)	$ (17)	$ (17)	$ (17)
Retained Earnings	276	667	1,401	2,679	3,740
Dividends Payable	-	-	-	-	-
Total Stockholders' Equity	$ 260	$ 650	$ 1,384	$ 2,662	$ 3,723
Total Liabilities & Equity	**$ 818**	**$ 1,272**	**$ 2,131**	**$ 3,661**	**$ 4,718**

Cash Flow

:: Years 1 - 5

Solar Direct

(in thousands)

Sources of Cash:	2006	2007	2008	2009	2010
Operating Activities					
Net Income (Loss)	$ 258	$ 390	$ 734	$ 1,278	$ 1,811
Adjustments to reconcile Net Income (Loss) used in operating activities:					
Depreciation & Amortization	$ 17	$ 20	$ 21	$ 26	$ 23
Changes in Assets & Liabilities					
Accounts Receivable	$ (70)	$ (24)	$ (47)	$ (105)	$ (96)
Notes Receivable	-	-	-	-	-
Inventory	(117)	(7)	(59)	(133)	(121)
Other Current Assets	-	-	-	-	-
Other Assets	46	-	-	-	-
Accounts Payable	94	64	124	252	246
Other Payables	1	-	-	-	-
Accrued Liabilities	-	-	-	-	-
Net Cash Provided (Used) in Operations	**$ 231**	**$ 444**	**$ 774**	**$ 1,318**	**$ 1,865**
Investing Activities					
Purchases of Fixed Assets	$ (11)	$ (23)	$ (23)	$ (23)	$ (28)
Sale of Investments	-	-	-	-	-
Purchase of Investments	-	-	-	-	-
Net Cash Provided (Used) in Investing	**$ (11)**	**$ (23)**	**$ (23)**	**$ (23)**	**$ (28)**
Financing Activities					
Sale of Stock	$ -	$ -	$ -	$ -	$ -
Payment of Dividends	-	-	-	-	(750)
Proceeds from Short Term Loans	37	-	-	-	-
Repayment of Short Term Loans	(37)	-	-	-	-
Proceeds from Long Term Loans	250	-	-	-	-
Repayment of Long Term Loans	(4)	-	-	-	(250)
Net Cash Provided (Used) in Financing	**$ 246**	**$ -**	**$ -**	**$ -**	**$ (1,000)**
Change in Cash Balance					
Net Increase (Decrease) in Cash	$ 466	$ 421	$ 751	$ 1,295	$ 837
Beginning Cash Balance (Deficit)	22	489	909	1,660	2,956
Ending Cash Balance (Deficit)	**$ 489**	**$ 909**	**$ 1,660**	**$ 2,956**	**$ 3,793**

Break-Even Analysis

Year 1 by Month

Solar Direct

(in thousands unless otherwise noted)

	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	2006	% of Total Sales
Sales	$ 140	$ 175	$ 210	$ 175	$ 105	$ 175	$ 420	$ 525	$ 560	$ 385	$ 315	$ 315	$ 3,500	
Variable Costs														
Material & Labor	$ 70	$ 89	$ 105	$ 89	$ 53	$ 89	$ 211	$ 286	$ 303	$ 215	$ 179	$ 179	$ 1,868	*53%*
Commissions	0	0	0	0	0	0	0	0	0	0	0	0	2	*0%*
Plus Reclassified Fixed Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	*0%*
Total Variable Costs	**$ 70**	**$ 89**	**$ 105**	**$ 89**	**$ 53**	**$ 89**	**$ 211**	**$ 286**	**$ 303**	**$ 215**	**$ 179**	**$ 179**	**$ 1,870**	53%
Fixed Costs (calc as % of sales)														
Fixed Cost of Goods & Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*0%*
Sales & Marketing (w/o Commissions)	25	31	37	31	19	31	74	93	99	68	56	56	619	*18%*
Research & Development	0	0	0	0	0	0	0	0	0	0	0	0	0	*0%*
G & A (without Depreciation)	5	7	8	7	4	7	16	20	22	15	12	12	136	*4%*
Total Fixed Costs (calc as % of sales)	**30**	**38**	**45**	**38**	**23**	**38**	**91**	**113**	**121**	**83**	**68**	**68**	**755**	22%
Fixed Costs (fixed amounts)														
Fixed Cost of Goods & Services	9	9	9	9	9	9	9	9	9	9	9	9	108	*3%*
Sales & Marketing (w/o Commissions)	19	19	19	19	19	19	19	29	29	29	19	19	260	*7%*
Research & Development	1	1	1	1	1	1	1	5	5	5	1	1	26	*1%*
G & A (without Depreciation)	12	12	12	12	12	12	12	12	22	22	22	22	183	*5%*
Depreciation	1	1	1	1	1	1	1	2	2	2	2	2	17	*0%*
Less Reclassified Fixed Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	*0%*
Total Fixed Costs (fixed amounts)	**$ 42**	**$ 43**	**$ 43**	**$ 43**	**$ 43**	**$ 43**	**$ 43**	**$ 56**	**$ 67**	**$ 67**	**$ 54**	**$ 54**	**$ 595**	17%
Income from Operations	**$ (3)**	**$ 6**	**$ 17**	**$ 6**	**$ (13)**	**$ 6**	**$ 76**	**$ 69**	**$ 69**	**$ 20**	**$ 14**	**$ 14**	**$ 281**	*8%*
Interest Income (Expense) - "Fixed"	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	(2)	$ (2)	*0%*
Income Taxes - "Variable"	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*0%*
Net Income After Taxes	**$ (3)**	**$ 6**	**$ 17**	**$ 6**	**$ (13)**	**$ 6**	**$ 76**	**$ 69**	**$ 69**	**$ 20**	**$ 14**	**$ 12**	**$ 278**	8%
Analysis														
Income from Operations														
Contribution Margin	**28.4%**	**27.5%**	**28.4%**	**27.5%**	**27.9%**	**27.5%**	**28.1%**	**23.9%**	**24.3%**	**22.5%**	**21.6%**	**21.6%**	**25.0%**	
Break-Even Sales Volume	$ 150	$ 155	$ 150	$ 155	$ 152	$ 155	$ 151	$ 234	$ 276	$ 297	$ 249	$ 249	$ 2,378	68%
Sales Volume Above Break-Even	$ (10)	$ 20	$ 60	$ 20	$ (47)	$ 20	$ 269	$ 291	$ 284	$ 88	$ 66	$ 66	$ 1,122	32%

Appendix 2. Marketing and Sales Collateral

The following section contains:

Company Profile and History

Executive Bios

Recent Press Releases and Press Coverage

Project Case Studies

Product Line Summary, featuring:

Vortex Solar Pool Heater
ProgressivTube Solar Water Heater
Solar Freedom PV Package

COMPANY PROFILE

Solar Direct

Bringing renewable technology down to earth!

Emerging into the new millennium, Solar Direct has defined itself as a leader in Internet marketing of renewable energy products.

Developing its vision for increasing consumer awareness of sustainable and renewable technology, Solar Direct is repositioning its strengths to promote eco-consciousness through advanced eco-education.

Unique to the alternative energy industry, Solar Direct is vertically integrated, combining manufacturing, engineering, marketing, and direct-to-customer distribution within one organization.

Beginning in 2000, Solar Direct's sales progressively increased, exceeding the $1.2 million mark for the first time.

During the 18 months following the startup of its Energy SuperMarket online shopping cart in mid-2003, Solar Direct's revenue dramatically increased by over $1 million. This was largely attributable to a greatly enhanced online shopping experience, combined with growing world-wide consumer demand for renewable green technology.

Beginning in 2004, Solar Direct began working closely with outside consultants, undertook a complete evaluation, followed by significant investments in an ongoing corporate coaching program, management and staff development, along with a substantial commitment to a consumer Internet eco-education program.

During 2004, Solar Direct's annual revenue exploded at 160%. Projections for 2006 indicate Solar Direct will exceed its goal of $5 million in combined sales volume.

In mid-2005, a broad new initiative was launched including website development, search engine optimization, video based online eco-education, advertising, marketing, and public relations campaigns.

Solar Direct also retained the services of Thorell Associates, an Orlando Florida public relations firm specializing in socially responsible marketing and promotions.

Solar Direct's mission is to
"Inspire others to discover environmentally responsible energy solutions!"

COMPANY HISTORY

Solar Direct

A leader in the world of renewable energy technology

Founded in 1986, Solar Direct's initial focus was in the solar heating market. The entrepreneurial start-up soon evolved into emerging technologies, specializing in NASA developed Heat Pipe and Geothermal Heating and Cooling systems. Major undertakings included installations of high profile government, commercial, and prestigious residential projects.

Beginning in 1995, as savvy consumers migrated toward Internet purchasing, Solar Direct began its online presence with the creation of SolarDirect.com.

In early 2003, it expanded its Internet presence with the creation of its major e-commerce website - The Energy SuperMarket.

Offering a web-based factory direct source for renewable, energy efficient products, the Energy SuperMarket is the fastest growing energy super-mall on the Internet.

Focused on providing an exceptional online purchasing experience, Solar Direct seeks to dominate its market with unsurpassed product selection support, combined with do-it-yourself technical assistance for customers.

Solar Direct has weathered several major market slumps, survived the solar market collapse following September 11th 2001, and the bursting of the dotcom bubble. Following the after effects of September 11th, Solar Direct's re-start team has steadily expanded from four core principles to a total staff of over twenty.

By 2004, Solar Direct's market had expanded to include well over 30,000 customers, with over 2000 unique visitors to the Energy SuperMarket each day.

Using state-of-the-art search engine optimization techniques, coupled with a reliable and secure e-commerce infrastructure, the Energy SuperMarket has now become the Internet's largest distribution point for solar pool heating products and accessories, and continues to attract a large and rapidly growing core of industry clients and consumers who discover energy saving solutions.

Currently, Solar Direct offers consumer direct marketing of over 350 renewable energy products worldwide, combining existing universal high-tech access of the Internet purchasing experience with an increase in personalized high-touch support.

Looking toward the future, Solar Direct is committed to accelerated growth, providing a quality purchasing experience for consumers, and partnering together with others in the environmental community.

LEADERSHIP BIOS

Dale A. Gulden

Chief Executive Officer, Director of Marketing and Sales

Dale Gulden is a highly knowledgeable and experienced 26-year veteran of the solar and renewable energy industry. As the leader of Solar Direct, Gulden has accelerated the company into one of the highest ranking e-commerce destinations for renewable technology.

In 1971, Gulden earned a BS in Business Marketing and Economics from Indiana State University. Following a successful career in promotions and management, Gulden transitioned by joining a start-up company selling solar energy systems in Florida. Gulden subsequently moved into sales management and consulting, advancing into positions with larger firms in the solar marketplace.

In 1986, Gulden partnered with Kirk Maust, a leading solar engineer and eco-entrepreneur, establishing Solar Direct – with the initial vision of marketing solar water and pool heating using a traditional localized business model.

Gulden then guided the company into the broader energy market by offering consumers emerging technologies for geothermal heating and cooling. He also pioneered break-through solutions for indoor air quality, humidity control, and energy management.

In 1992, Gulden envisioned a revolutionary new business model. The traditional in-home sales approach was eliminated and replaced by the cost saving concept of selling consumer direct, allowing Solar Direct to immediately expand statewide.

Gulden then expanded this unique model nationwide by establishing Solar Direct's Internet presence in 1995, becoming the first website to offer renewable product information and consumer eco-education online.

In 2003, Gulden's forward thinking vision resulted in the creative development of "The Energy SuperMarket" – the first major e-commerce website that encompasses an expanded spectrum of renewable energy products. Gulden continues to push the envelope of technology by conceptualizing ground-breaking methods to integrate Internet technologies with consumer education.

Gulden's responsibilities include oversight of the Sales and Marketing Departments, providing consultation to major clients, as well as conceptualizing future growth and direction for Solar Direct.

Former President of the Gulf Coast Chapter of the Florida Solar Energy Industries Association (FlaSEIA), Gulden often serves as a keynote speaker to environmental and business groups, on the economic and ecological "green benefits" of solar and renewable energy technologies.

LEADERSHIP BIOS

Kirk A. Maust

Chief Operating Officer, Director of Engineering

Kirk Maust represents the new breed of entrepreneurial executive; his defining characteristics encompass 25-years of "real world" solar and renewable engineering experience, Internet technology and digital communication skills, as well as having the spirit and aspirations of an e-commerce visionary.

In 1981, Maust earned one of the nation's first degrees in solar and renewable technology. He graduated from Pennsylvania State University's Mechanical and Nuclear Engineering Department, recognized as having the largest and most prestigious engineering degree program in North America. Moving to Florida, Maust managed and later acquired the solar division of an air conditioning firm.

In 1986, Maust joined with Dale Gulden to initiate the start-up of Solar Direct. The combination of Maust's engineering and computer science experience together with Gulden's solid history of marketing and sales in the solar industry created an effective and innovative partnership.

As the company moved into a broader energy market, Maust engineered inventive solutions for applications in the emerging geothermal, indoor air quality, and energy management fields.

In 1995, Maust constructed and launched the company's first website. Heralded as one of the earliest and most comprehensive renewable energy online destinations, SolarDirect.com was a pioneering effort that set the stage for intensified growth.

Building on the success of offering alternative energy information to consumers via the Internet, Maust developed Solar Direct's first electronic shopping cart – The Energy SuperMarket. This investment in an e-commerce platform dramatically increased revenues, and distribution expanded first nationally, and then globally.

Maust's responsibilities include working closely with the engineering, pre-sales engineering, and information technologies personnel, to ensure quality service to Solar Direct's customers. He also provides operational oversight, while maintaining a personal presence throughout Solar Direct's rapidly expanding organization.

Maust provides engineering and troubleshooting consultations for major clients requiring solutions to complex and challenging design obstacles. Maust has earned the coveted reputation of conceptualizing, designing, engineering, and managing the execution of large, complicated, and problematic projects.

Maust holds a Florida State Certified Solar License, and is a current member and former Vice-President of the Gulf Coast Chapter of the Florida Solar Energy Industry Association.

PRESS COVERAGE

Herald Tribune, July 2006
by Michael Pollick | Michael.pollick@heraldtribune.com

Floridians who go solar can get help with the costs

Floridians who go solar can get help with the costs
Folks who have always longed to go solar but have always feared the costs have a huge though possibly short lived opportunity to get the state government to shoulder as much as half cost.

Under a new state law that goes into effect today, the state will pay a rebate of up to $4 per watt for solar electric systems.

A solar hot water heating system would net a rebate ranging from $300 to $500 per customer. Bigger systems, ones that actually help power a house, cost in the neighborhood of $16,000. The renewable Energy Technologies Grants Program – signed into law by Gov. Jeb Bush on June19 – would kick in as much as 8,000 for a system at that price, said Kevin Lynn, senior research engineer at the Florida Solar Energy Center in Cocoa.

There is a catch – and really big one, considering the potential interest from consumers watching their power bill spike on rising gas prices: The state set aside only $2.5 million for the rebate,

"We all know that the money is going to go very fast," said Jeff Curry, alternative energy coordinator for Lakeland Electric.

One solar power equipment dealer guessed that the money will be used up in 90 to 120 days.

Leaving aside the larger solar photovoltaic systems – or PV's – that would only pay for 5,000 solar hot water systems rebates, Lynn noted.

The PV rebates are limited to a maximum of $20,000 for a residence and $100,000 for a business, publicly owned operation, or one owned by a not-for profit organization, including condominium or apartment buildings.

The new rebates that start today are on top of federal tax credit that started Jan.1 and are scheduled to continue throughout this year and next.

Under the internal Revenue service rules, tax payers are allowed a tax credit equal to 30 percent of their investment in a solar electric panel up to a maximum of $2,000,`and another equivalent credit for investing in a solar hot water heating system.

"I'm educating each client as they call me," said Doug Greenlaw, a long time solar power installer who operates in Sarasota as Greenlaw Solar Group: "My new business is coming from the fact that people want to save electricity, but they are not aware of tax credits, whether in the sate or federal"

The new state law comes with several restrictions.
The solar electric system must be installed by a state approved solar installer, a master electrician, or electrical contractor, the rebates are for grid tied systems, not those that operates off the grid; and the equipment used must be from an approved list maintained by the Florida Energy Center.

For solar electric, the new law specifies systems that are a minimum of two kilowatts in size.

"Basic PV systems cost about $8 a watt, "Lynn said "Solar hot water cost less, and you get paid back for it more quickly."

Folks in the solar business think that lawmakers and the governor could have done a better job at shepherding and funding the program.

"This has definitely been what we call last-minute legislation," said Dale A. Gulden, chief executive of Bradenton's Solar Direct. "The evolution of it, from the signing to getting the news out to customers, has been very slow and poor to say the least."

Gulden's web sites, chief of which is www.solardirect.com, play host to as many as 6,000 visitors each day, and he sells thermal and PV gear all over Florida and the nation.

Solar Direct has most of its e-mails on its lists, and the company's publicist, Lisa Thorell of Orlando, is busy sending out messages to inform potential clients of the rebates.

"There's not a lot of money to go around," Thorell said.
"People have to send a message back to the Legislature. The best thing that could happen is that all the money is spent within the first three months."

Even though you had to wait until today to install the system that would qualify for the rebate, Jeff Curry of Lakeland Electric warns that you should not expect a check from the state anytime soon.

"There is a group at the State, the Florida Energy Office, and they are doing what is called the rule making. They're still figuring out how to do it" Curry said.

"I think we are probably looking at September before that process will be available."

For more information
If you're hot for solar, visit www.heraldtribune.com for a set of links related to the state rebates and federal tax credits:

- Florida Solar Energy Industries Association, www.flaseia.org
- Overview of federal tax credits, www.greenenergyohio.org
- To find a solar business within your county, go to www.findsolar.com

PRESS COVERAGE


8 www.review.net
GULF COAST BUSINESS REVIEW
JUNE 2-JUNE 8, 2006
ENTREPRENEURS by Francis X. Gilpin | Associate Editor
Bright Future
Maust and Gulden always thought they were in the right place – the Sunshine State – to sell solar-powered hot water heaters, lightning and electrical systems. Finally, in 2006, it may also be the right time for two experienced hands in the solar business to help Florida take advantage of its nickname.
"It's becoming commonplace now for

Gulf Coast Business Review, June 2 – June 8, 2006
By Francis X. Gilpin | Associate Editor

Bright Future

Two solar energy equipment distributors have survived mean times. They hope their resilience will be rewarded.

Solar Direct Inc. co-owner Kirk Maust remembers the days when it wasn't so easy selling Floridians on alternative energy.

During the second half of the 1980s, the Bradenton company sold most of its solar power products via demonstrations in the hones of potential customers. "People still weren't knocking on our door to buy these things," Maust says. You had to find a creative way to get in their door and then beat them up over the head."

"Otherwise known as consumer education," Lisa Thorell, Solar Direct's public relations adviser, wryly interjects.

Maust and his business partner, Dale Gulden, have since put away the blunt objects. Three dollar-a-gallon gasoline and escalating electric bills are threatening to turn America green.

Maust and Gulden always thought they were in the right place — the Sunshine State — to sell solar-powered hot water heaters, lightning and electrical systems. Finally, in 2006, it may also be the right time for two experienced hands in the solar business to help Florida take advantage of its nickname.

"It's becoming commonplace now for people to believe that the energy crisis is a real thing Gulden says. "It's not just a blip on the radar screen. It's something we're going to have to live with."

President Bush signed a federal energy bill last year that created new tax benefits for Americans who install energy-saving devices at their homes or businesses. Even the Florida Legislature has gotten into the act. State lawmakers passed a bill last month that adds more financial sweeteners for building owners who buy solar or other renewable technologies. That legislation awaits the signature of Gov. Jeb Bush.

"We're hoping all of these new incentives in Florida and the newfound consciousness bring about further action," says Gulden. "This is where we live with our own families and we would like to see Florida be a leading state in all of it."

Lost ground

Florida builders have spurned alternative energy solutions. One prominent Bradenton real estate developer even barred homeowners in one of his subdivisions from setting up photovoltaic panels on their houses, apparently fearful the sight of the contraptions would drive down the prices at which he could sell the rest of his inventory.

"I hate to see the ground that we've lost in the 27 years that I've been in the business. What we could have done," Gulden says. "All of this growth taking place and basically not even considering any of these things."

But Gulden doesn't dwell on the past. He projects Solar Direct will more than quadruple its 2005 sales of $2.2 million by 2009. Solar Direct has ditched the in-person sales pitches. The company now sells about 70% of its solar equipment to homeowners and contractors over its own Web site.

The two owners of Solar Direct are both transplants from the Northeast.

Gulden came to Florida to be a rock concert promoter in the 1970s. When that didn't pan out, he answered a newspaper advertisement for a solar equipment salesman. "1 always thought I was someone who could sell something successfully," Gulden says. But I always liked to go home at night thinking that whatever it was I sold did the customer some good"

Maust graduated from Penn State University with an engineering specialization in solar technology. But he says he didn't get into alternative energy to save the world. I didn't care about the environment," he says, smiling.

The son of an electrician, Maust came to Florida in the early 1984 to escape the Pittsburgh winters. He took over r nascent solar division of an air conditioning contractor and did well enough that the boss gave him half of the solar business.

Maust met Gulden at trade shows. They decided to go into business together l984, just as federal alternative-energy tax credits from the presidential administration Jimmy Carter were expiring. Without an energy crisis like now or in he 1970s, Gulden says, "The solar hot Water heating business just died."

Saved by the Web

Gulden looks back on the resulting shakeout as not all bad. "There were lot of people in the business then that, according to us, probably shouldn't have been in the business and weren't so well intentioned" he says. "In that respect, it kind of cleaned out the riff-raff."

The survivors got by hawking solar eaters for s pools that could extend backyard summers a few extra months.

During the lean years, Maust and Gulden hired themselves out to analyze "sick buildings" and recommend how owners could improve air ventilation so workers would stop coughing and sneezing.

The other salvation of what became Solar Direct was the Internet. By the middle of the 1990, Maust and Gulden were placing ads on the Internet that had revived sales of their hot water heaters. They eventually shifted from telemarketing and the early Internet ads to an e-commerce "super mall," managed by their own staff.

In 2001, Solar Direct sold $1.2 million worth of solar gear. They blame a sales dip in 2002 and 2003 on anxiety over the 2001 terrorist attacks. But they more than

doubled 2003 sales to $2.3 million in 2004. They expect 2006 revenue to come in around $3.5 million.

Only about 50% of their products are sold to Floridians. While studying ship-ping costs recently, Maust noticed: "Every other order is going into California."

Although the direct-to-consumer approach makes Solar Direct's prices quite competitive for Florida homeowners, some of Solar Direct California installation contractors. Gulden says the Golden State contractors mark up his equipment charges as much as threefold for home installations on the West Coast.

Gulden thinks Florida, which is the fifth-highest energy user per capita in the nation, is ripe for solar in this new era of huge energy bills.

Maust and Gulden, are talking to investors about growth capital that will help then meet their 2009 sales target. It would be great, they say, if Florida turns into the natural market for solar power that they always thought it could be.

Yet if Solar Direct ends up selling more solar equipment outside of his home state, Gulden says his company will do quite well. He intends to let investors know that too, I hope we're not viewed as being reliant on Florida," he says.

Incentives
Our Energy Future

Solar hot water heaters have paid for themselves, through lower electric or natural gas bills, since Dale Gulden got into the alternative energy business more than 25 years ago, he says.

But new federal and state tax incentives make other solar products almost as good a deal, says Gulden, co-owner of Bradenton-based Solar Direct.

Gulden cites a typical residential installation on Long Island, where New York offers, one of the best financial incentives in the country.

A state-of-the-art system providing electricity, hot water and lighting from the sun would cost about $42,900. The homeowner is eligible for a 122,400 rebate from the local power authority, a $3750 state tax credit, and a $2,000 Federal tax credit. The homeowners net cost: $14,750.

Alt-energy legislation signed by President George W. Bush last summer also could be a big help to the owners of businesses that use lots of hot walk such as health clubs and nursing homes. Federal 30% solar credits are capped at $2,000 for homeowners, but the dollar for dollar reduction on a corporate Income tax return has no ceiling.

Lisa Thorell, a spokeswoman for Solar Direct, says the private sector will find answers to the new energy crisis before government. Venture capitalists have millions of dollars to invest in alt-energy startups, she says.

"Just like American history, our free market tends to save us," Thorell says. "Where somebody can make money, we don't need laws to make the market. Companies and entrepreneurs come up and fill that gap."

PRESS RELEASE

Solar Direct Applauds Florida Governor Jeb Bush and State Legislators on Solar Incentives Action

Consumers and Businesses Encouraged to Line up Fast for Solar Rebates

June 19, 2006 - Bradenton, FL - Solar Direct, owner of one of the nation's most popular energy product super malls on the Internet, today congratulates Florida Governor Jeb Bush and state legislators on their efforts in creating the Solar Energy System Incentives Program as well as increasing attention to the state's need for renewable energy diversification.

Starting July 1, 2006, and extending through June 30, 2010, Florida consumers and businesses installing solar equipment, including solar photovoltaic (electricity) panels, solar water heaters and solar pool heaters will be eligible for the state's newly passed solar rebates program, slated for $2.5 Million in appropriations the first year.

"When coupled with the Federal incentives, the new state rebates should really spur energy-conscious Floridians to make the move to a renewable energy solution in their building improvements," said Dale Gulden, CEO of Solar Direct. "Consumers and businesses need to move fast, though. With some simple math and existing orders in the queue, we can see the year's available rebates are going to be exhausted quickly, some believing within a few months."

According to the recently signed energy bill, if rebate funds are insufficient for a given year, rebate requests will be processed for the following year's allocation. Prior year requests for rebates will be given priority.

Solar Direct's consumer advisory, "16 Tips on Doing a Solar Home Makeover in the Sunshine State", updated to include the latest Florida rebate incentives, and explaining how solar home improvements contribute to environmental stewardship, is available for download at www.SolarDirect.com/solarhome.pdf. Table 1 within this document summarizes the qualifying solar products and award amounts for the new state rebate program. Also to Floridians' benefit, these systems are eligible for federal tax incentives based on the 2005 Federal Energy Act.

About Solar Direct
A pioneer in the world of energy conservation products since 1986, Solar Direct began with a focus on residential and commercial systems including solar thermal and geothermal heat pumps. Solar Direct today hosts the Internet's fastest growing energy product SuperMall, www.SolarDirect.com, offering over 350 energy-efficient leisure and appliance products to home-owners throughout all 50 states. Over the company's history, solar-based product shipments have resulted in cumulative KWh savings of 1.2 Billion KW Hrs, equivalent to 487,000 tons of CO^2 savings or removing 487,000 passenger vehicles off the road for one year. The company's flagship product, the Vortex™ Solar Pool Heating solution, is nationally known for its home-owner-friendly self-installation, product reliability and high customer satisfaction ratings.

# # #

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PRESS COVERAGE

Herald Tribune Saturday, April 22, 2006
By Nichole L. Reber | Correspondent

Tax incentives mean going green yields green

Some new federal tax incentives shining light on the Sunshine State, especially today, which is Earth Day.

These incentives encourage the use of solar power and other alternative, renewable energy sources — not just to re- duce the nation's dependence on fossil fuels, but also for money savings.

President Bush signed into law the Energy Tax Incentives Act in August 2005, essentially giving homeowners tax relief for installing energy-efficient products and systems in their homes,

'The act is intended to make attempts to conserve energy and encourage use of alternative energy sources," said Mike Dobzinski, Internal Revenue Service spokesperson for southern Florida.

The tax incentives, which run through 2007, come in many options:

• Installing certain products — insulation systems that reduce heat loss/gain, energy-efficient windows (including skylights) and doors, and metal roofs that meet Energy Star requirements — earns a maximum credit of $500 for each of the two tax years.

• Outfitting homes with qualified solar panels or photovoltaic property (see photo at left) and solar water-heating equipment earns incentives of up to $2,000. This is not applicable to solar heaters for pools and hot tubs, however.

Going Solar

Employing solar products and electricity systems is the most common way to take advantage of these incentives.

Solar is not as complicated or aesthetically unappealing as many homeowners believe. For example, some entire communities in the Florida Keys are powered entirely off-grid, according to Dale Gulden, chief executive officer of Bradenton-based Solar Direct, a manufacturer and distributor of solar products. It takes tremendous planning for a home or community to be off-grid from the beginning, though, which is

why incorporating solar electric plans at the beginning of a construction project results in a lower installation cost.

Homeowners no longer need to worry about the aesthetic qualities of solar power equipment because the panels have evolved significantly since they started springing up in the 1970s. Today they are much less architecturally invasive — in fact, they are barely noticeable. They now look like shingles, roof tiles or flat screens adhered to the roof.

Deed restrictions shouldn't be a problem, either, because Florida statutes decree that installation of solar collectors or other energy devices based on renewable resources can not be prohibited.

Some of the negatives of solar panels include the fact that they cannot be upgraded; the life expectancy is only 20 years. And payback for complete systems takes several years. But various incentives help: "Green mortgages" from Fannie Mae allow homeowners to finance 100 percent of their energy improvements; FPL incentives; and the new federal tax incentives.

Contrary to popular belief, most solar equipment produces energy regardless of the amount of visible sunlight.

"One of the biggest things we're seeing is (clients are) buying it to ensure they have backup energy so they'll have some level of existence when the power grid goes down again," said Gulden, His company has a package designed to run a home's day-to-day operations giving savings on a daily, monthly and annual basis; while also providing energy storage. In such power- outage instances as a hurricane, this system will run the refrigerator and basic lighting so a homeowner doesn't have to rely on a generator.

'They require fuel. If you can't get fuel from a gas station, the generator is some what worthless," he said, adding that the cost of this simple system ranges between $16000 and $35,000.

How to get started

While most solar products are used to heat pools and in water heaters, full solarization of a home typically costs between $25,000 and $50,000. The most complete solar power system is a photovoltaic system that converts sunlight to energy, stores it and delivers it as necessary.

A three-panel kit from Solar Direct, for instance provides up to 3,000 watts for around $20,000. The costs are offset by the Florida sales tax exemption of $1,372, federal tax credits of up to $2,000, and reduced utility bills over the long run.

When considering the purchase of solar-power products or a solar system for your home, it helps to know some basic terminology:

• Solar efficiency: This is the percentage of output of a solar panel compared to the average solar energy hitting the earth.

• Watt-hours per square foot per day: This is the energy output stated as the number of watts generated per hour for each square foot of solar panel on a typical day.

• Solar water heater: Probably the most common solar product found in homes, water heaters pay back their cost within three to six years. They have a solar efficiency of 50 to 65 percent and an energy output of 200 watt-hours per square foot per day.

• Solar electricity: This is also known as a photovoltaic system. While it may be the most widely known alternative to fossil fuel-based energies, it is usually the most expensive option. Solar efficiency is rated between 10 to 25 percent, and it produces an energy output of 100 watt- hours per square foot per day.

• Solar pool heater: Also increasing in popularity, solar pool heating tends to run front $2,000 to $6,000. Typical payback is between one and three years for a solar efficiency of 55 to 70 percent.

PRESS COVERAGE

Maddux Business Report, March 2006
by Catherine Russo | catcobb@mac.com

The Perfect (Solar) Storm

THIS YEAR, SOLAR ENERGY MAY FINALLY HAVE its day in the sun. Pardon the pun, but a confluence of factors such as rising energy costs, tax incentives that kicked in on January 1, volatile weather conditions and a rising environmental awareness nationwide are making solar energy an increasingly attractive alternative to traditional energy sources in the U.S.

Dale Gulden, CEO and half owner of Bradenton's Solar Direct, has been working since 1986 to position his company for just such an opportunity, and plans to continue to capitalize on what he calls an emerging 'green mainstream.' He began the company after working for several years with another solar startup, and quickly embraced the idea of renewable energy sources. Finally the American public is starting to as well, for years lagging countries like Japan and Germany. "

In terms of renewable energy, Japan makes up 50 percent of the world's use, Germany 25 percent and the U.S. joins the remainder. Yet we are the number one polluter and consumer in the world! But our people are finally seeing the writing on the wall," he says. "I'm now getting calls from individuals and contractors who two or three years ago would give you every excuse in the book."

Solar Direct sells a wide spectrum of solar products and services to more than 30,000 customers annually, and since 1996 has sold the products through its Internet presence (www.solardirect.com).

Gulden says that moving toward an energy-responsible future requires developing new methods of communication. "This means our mission must be to raise the bar of on-line access to renewable information and assistance, and to empower consumers into making moral, ethical and responsible choices," he says.

To that end, he says, the company has hired a PR agency from Windermere, FL, Thorell Associates, which specializes in socially responsible public relations. Baby boomers are now moving into the green mainstream, according to Gulden, an area once dominated by hippies.

"Solar is now hip, part of the 'eco-chic,'" he says.

Indeed, despite nearly two decades in business, the past few years have been the fastest growing. Revenues hit $1.2 million in 2000, fluctuated a bit, then grew 160 percent in 2004 and Gulden expects them to exceed $5 million this year. Margins range from 30 to 50 percent, depending on the product. Following 9/11, the company had four employees, including the founders. Today it boasts 20.

While Solar Direct does not manufacture its own products, it uses 350 different products from solar energy suppliers around the world. Vertically integrated, it custom designs, brands and installs solar packages for individuals, contractors, businesses and government agencies. For instance, it recently installed a system at the U.S. embassy in Nigeria and at the Boy Scouts of America Sea Base Training Camp in Marathon, FL.

THE SUN IS SHINING Solar Direct owners Dale Gulden (left) and Kirk Maust assemble and sell solar products that provide renewable energy sources.

Gulden and co-owner Kirk Maust initially focused on the solar heating market but soon became involved in emerging technologies, specializing in NASA-developed heat pipe and geothermal heating and cooling systems. It now focuses on residential and commercial markets.

Maust, COO, earned one of the country's first degrees in solar and renewable technology (Penn State, 1981, under mechanical and nuclear engineering). He oversees all engineering and troubleshooting for designing and executing the installation of small and large solar projects and saw the need early on for an Internet presence, now the primary generator of business.

Currently 60 percent of Solar Direct's business comes from outside of the state. While some of that is due to Florida's lack of incentives, another reason is ecommerce. "Somebody in Tampa can open the Yellow Pages and find whatever it is he needs. The guy running a cornfield in Nebraska, however, has much fewer options," Maust says. "Our energy supermarket online has made us the largest distribution point for solar pool heating products and accessories."

Roger Locke, director of sales for TCT Solar in Jacksonville, has collaborated with Solar Direct on a number of projects. He says Gulden has managed to be successful despite a very difficult environment. "We had few tax credits or incentives for years, then the dot. com bust and September 11, but Dale never gave up," says Locke. "So now he is poised to benefit from a number of things converging together to make solar a great place to be."

Gulden says that the stress on renewable energy is here to stay, and legislative initiatives will continue to dot the landscape as governments search for alternative ways to power their constituencies. Indeed, he is thrilled about the energy bill President Bush signed last summer. The Energy Policy Act of 2005 (EPAct 2005) is something he has been anticipating for years.

Why? Because for the first time since 1985, homeowners who install solar energy systems will receive a tax credit worth 30 percent of the system cost, capped at $2,000. And they can get separate credits for systems that generate electricity (called photovoltaic) and ones that heat water. A previous credit passed by Congress in 1978 allowed for purchase of solar water heaters, but the new credits will encourage purchase and use of such things as solar ovens, refrigerators and a plethora of other alternative power sources. As it stands right now, the tax credits will expire at the end of 2007.

Businesses that purchase solar equipment will also receive a credit worth 30 percent of the system cost in the same two-year time period, and that credit has no cap. "What people need to understand is that this is a tax credit, not a deduction. That means it is a dollar-for-dollar amount right off the top. This is big," says the CEO, "and we are all going to benefit from it with money savings and a hopefully greener environment." The EPAct 2005 requires that in 2007-2009 at least three percent of all electricity consumption must be derived from renewable sources. In 2010 to 2012 it rises to five percent, and 2013 and beyond, seven and a half percent. Says Gulden: "This is just the tip of the iceberg."

The Sunshine State?

Roughly 20 or more states around the country have passed legislative incentives rewarding consumers using renewable energy sources such as solar, with California usually at the forefront. For instance, the California Public Utilities Commission passed in January the California Solar Initiative (CSI), an historic long-term plan that allots $3.2 billion for solar energy rebates in that state for the next 11 years, providing for the installation of approximately 3000 MW of solar energy.

Contrast this with Florida, whose only real nod to solar is a sales tax exemption that went on the books in 1997, and finally became permanent last May.

Quite simply, says Gulden, Florida is known as an energy laggard. Hopefully that will change soon, as the governor's office recently announced it is working on a new statewide energy plan. "We are hoping that the state finally sees the light on this, so to speak, and makes some sweeping legislative changes including incentives for solar and other renewable sources," says Gulden. "With close to a thousand people moving into this state everyday, the state cannot afford to ignore this. And we are the Sunshine State, for goodness sakes!"

Despite the lack of legislation, however, many builders of new homes are beginning to ask for solar packages as a standard, particularly if the buyers are coming from other countries. Incentives can make a big difference in ultimate costs, too. For example, a person living in a state with various tax incentives can receive significant savings on the purchase of a solar system long before the lower energy bills are even factored in.

Say somebody in Long Island pays $42,900 for a system. Because of where they live, they'll receive $22,400 for the Long Island Power Authority Rebate, $3,750 in state tax credits, and the two grand credit from the newly created federal government program. "This is before they start getting lower energy bills and renewable energy credits from the power companies," Gulden says.

Locke of TCT Solar says that now is the time for everything to finally converge to make solar very attractive. Tax incentives, high costs of traditional power sources, power outages. "The value proposition is high," he says. "There is nothing you can put on your house and get your money back as fast as you can with solar."

The Technology

So how does it work? While a full scientific discussion of the technology is impossible in this venue, we'll give a short overview of the technologies. Some options include the more simple systems for solar pool and water heating or the more complex photovoltaic (PV) devices.

Solar pool heaters use an existing pool pump to circulate the water through the heater. It is usually located on the roof and warms the pool. Solar pool heaters are the most common in Florida and extend the swimming season to almost year round.

Solar water heaters, on the contrary, utilize a circulating pump and some type of temperature control, while passive systems do not have any moving parts and rely on the basic principle of physics – that hot water rises and cold water falls. With solar water heaters, he says, a family of four can save roughly $650 per year, yielding a tax-free return on investment of 17-35 percent.

PV devices generate electricity directly from sunlight via an electronic process that occurs naturally in certain types of material. Electrons in crystals are freed by solar energy and can be induced to travel through an electrical circuit, powering any type of electronic device or load. They can be used to power small devices such as road signs, calculators, homes or even large stores or businesses.

Gulden says that solar electric systems are becoming more popular due to the generation of free electricity, plus the added security of power during outages.

"When Wilma went through South Florida last year, we could barely keep up with the volume of telephone calls of people wanting solar systems immediately," he says. While the costs can seem prohibitive – a three- to four-kilowatt PV system can range from $20,000 to $40,000, and solar water heaters are usually somewhere between $3,000 and $5,000 – the cost savings can be dramatic.

"The immediate results from the installation of a PV system are a dramatic 20- to 80-percent reduction in electricity bills," he says. "Say your utility bill is $900 monthly on a 3,000- square-foot home. That's a substantial savings that will pay for itself in less than a decade." Gulden adds that often the cost can be factored into a low-interest mortgage. Aside from the attractiveness of reliable power during hurricanes, these systems avoid price hikes and many offer do-it-yourself installation.

"Usually the day after a hurricane is a perfect beach day, but the power is still gone, if only for a short time. But think of what retirees on fixed incomes can do with this," he says. "The systems are very low maintenance with no operating costs."

Locke of TCT Solar says that Gulden is in a position of extreme growth potential: "It's the perfect solar storm."

PRESS COVERAGE

IMAGO Magazine, February 2006
By Chris Crist | Sr. Vice President of InterLogic Media

Here Comes the Sun!

Solar Power has never really gained the full appreciation it has deserved until recently. With the most brutal storm season on record, people in Tampa Bay are searching for new energy solutions to replace their electricity during a potentially long term power outage. Many homeowners across Florida, who had been displaced from their homes by previous storms, purchased generators to provide basic power. Unfortunately when fuel supplies started to run out, those generators also stopped running. For Tech Appeal, we sought out an alternative product that might provide a quiet and reliable power solution under the worst possible conditions. We found it in a product called "Solar Freedom" from Solar Direct, a company that has called Tampa Bay home for over 20 years. CEO, Dale Gulden says the "Solar Freedom Starter Kit" has a lot of benefits for the Florida homeowner. This new product is really an All-In-One, entry-level solar photovoltaic package that provides immediate power backup and allows your home to run in critical-mode during power outages. In addition when power is restored, the system provides regular monthly utility savings. The product is scalable and could eventually provide complete energy-independence as extra panels are added." So how does it work we asked? "Solar Power technology has really improved in two areas, the solar BIPV (Built In Photo Voltaic) panels, which collect the energy and the inverters, which receive and distribute the energy", said Gulden. The home would be powered via the inverter that is connected to the existing household circuit breaker box. Typically, heavy energy consumption devices such as air-conditioners, electric stoves, heat pumps, and e hot water heaters are left running directly on the utility power. These devices are seen as non-critical during a utility outage due to their high instantaneous power and daily energy consumption. In the event of a utility power outage, power would be lost to the "Big" non-critical loads. At the same time, the inverter takes over supply to the "Dedicated' loads, supplying it with power until the utility power is restored.

Since Florida happens to be the third largest energy consumption state in the United States, local utility prices have continued to rise with strong demand. Recent rate hikes have been approved to cover restoration of damaged infrastructure from recent hurricanes like stations, poles and lines. In addition, with over one thousand people

moving into the state per day, the cost of fossil fuel will not lessen anytime soon. While reviewing this technology along with what Progress Energy offers as energy audit suggestions, a homeowner could potentially save up to 50% on their current utility bills, literally thousands of dollars over the life of this solar system. Another benefit starting December 31, 2005, is the new Federal Energy Tax incentive Bill. This program creates a 30% tax credit for residential solar installations for two years that is capped at $2,000. After January 1, 2008, the credit is reduced to only 10% and will be a permanent tax credit. The "Solar Freedom" kit costs about $1 1,700 and can be easily installed by an electrical contractor. The systems have a life cycle of up to 25 years and provide excellent return on the investment. When you stop to think about protection for your family, your home and its contents, solar power appears to be the only true off-line solution. Developers in new home construction are now working with architects to build smart houses, where solar systems can pull every ounce of energy from the sun and not lose its curb appeal. In fact, solar powered homes increase the value of the property and likely increase home resale opportunities. If you would like to learn more about solar power and the residential solar products offered by Solar Direct, please go directly to their website at www.solardirect.com

PRESS COVERAGE

Tampa Bay Business Journal, December 2005
By Jane Meinhardt | Staff Writer

Tax credit to heat up sales for Solar Direct
More homeowners expected to buy energy-efficient products

Bradenton — A free natural source of energy and a growing market for it fuel Dale Gulden's company. Now, an impending federal tax credit will make Solar Direct Inc. grow even more.

The Bradenton company focuses on energy-efficient products. It blends manufacturing and engineering with marketing and direct distribution for residential and commercial customers including the U.S. Fish and wildlife Service, NASA, U.S. Geological Survey and the U.S. Embassy in Nigeria. The company began in 1986 with four core employees and now has 22, including five in sales.

Gulden's growth strategy includes diversification, factory direct marketing, product development and capitalizing on the power of the Internet. Sixty percent of the sales comes through Solar Direct's online Energy Product SuperMall, which offers more than 350 energy-efficient products, including its flagship pool heating system. The site gets 2,000 first-time visitors a day.

"The Internet changed our business tremendously," Gulden said. "It's a blend of the Internet and a lot of customer hand holding and helping them to engineer their projects and making sure they function properly."

The company's biggest market is pool owners looking for an alternative source of energy to heat their pools.

It was nor easy for Solar Direct to get to this point.

In the mid-'80s, federal legislation that offered a tax credit for using renewable energy products died. Overnight, the solar energy industry found itself at death's door.

"We lost a lot," Gulden said. "The whole industry lost about 93 percent of its business. To give you an idea of the effect, there were about200 manufacturers of solar water heaters in the 1980s. Now there are six."

Solar Direct downsized and shifted its focus from domestic solar water heating to solar pool heaters. Since there are about 40,000 new pools a year, this segment has

remained strong, Gulden said. About half the company's pool-related sales are outside of Florida.

Solar energy system installations average about 15,500 a year in the state, according to figures from the Florida Solar Energy Industry Association.

"It's a small industry right now, but there are some positive things on the horizon," said Bruce Kershner, the association's executive director. "With the new energy bill creating tax savings for consumers, we're encouraged.'

The Federal Energy Act passed this year provides a 30 percent tax credit to residential and commercial purchasers of renew able energy-efficient systems, including solar hot water technology, starting Jan. 1 Effective for two years, the bill sets a $2,000 limit for homeowners, but there is no cap for commercial purchases. Also, in Florida, the sales tax exemption for purchasing solar energy systems is permanent.

The fastest growing customer segment for Solar Direct is composed of people and businesses concerned about the environment and fossil-fuel costs and reliance particularly during the past six month and after Hurricane Katrina, Gulden said

"There is definitely more of a national awareness," he said. Baby boomers are very energy conscious and dominant in the market.'

Gulden has positioned Solar Direct take advantage of the expected growth next year because of the tax incentives and has some large commercial projects on the table, Commercial sales are about 2 percent of the company's business, but that segment is expected to increase with the introduction of products such as solar packages that are integrated into the utility grid, he said.

SOLAR ENERGY INSTALLATIONS IN FLORIDA

Year	Annual	Cumulative
2003	17,839	456,459
2002	17,748	438,620
2001	14,724	420,872
2000	12,698	406,148

REVENUE

Year	**Revenue**
2005	$3.2M (estimated)
2004	$2.3M
2003	$1M

SOLAR DIRECT, INC

HEADQUARTERS	5919 21st Street East, Bradenton FL
NATURE OF BUSINESS:	Manufacturing of solar energy-efficient products
PHONE:	800-333-9276

PRESS RELEASE

Solar Direct's Solar Freedom Starter Kit Saves on Homeowner Energy Bills While Protecting Home from Storm Power Outages

December 5, 2005 - Bradenton, FL – In the wake of the energy crisis worsened by two years of hurricanes, energy rates are predicted to rise this winter: 75% for heating oil, 35% for natural gas and 20% for electricity. Coming to the aid of home-owners seeking lower-cost and more reliable home power solutions, Solar Direct Inc. today announced their new Solar Freedom ™ Starter Kit, an entry-level solar photovoltaic (PV) package, combining immediate power backup, monthly utility savings and the long-term ability to grow the home solar system toward environmentally-friendly energy-independence.

The Solar Freedom Starter Kit consists of the following key components:

- A 550 W-hr three-panel photovoltaic (PV) system sufficient for running select critical home appliances.
- A 14.6 KW-hr battery backup, allowing appliances to run during power outages and "off-the-grid".
- A 3 KW inverter, providing scalability so that a homeowner can ultimately build up to a full-fledged 3000 KW home solar PV system.

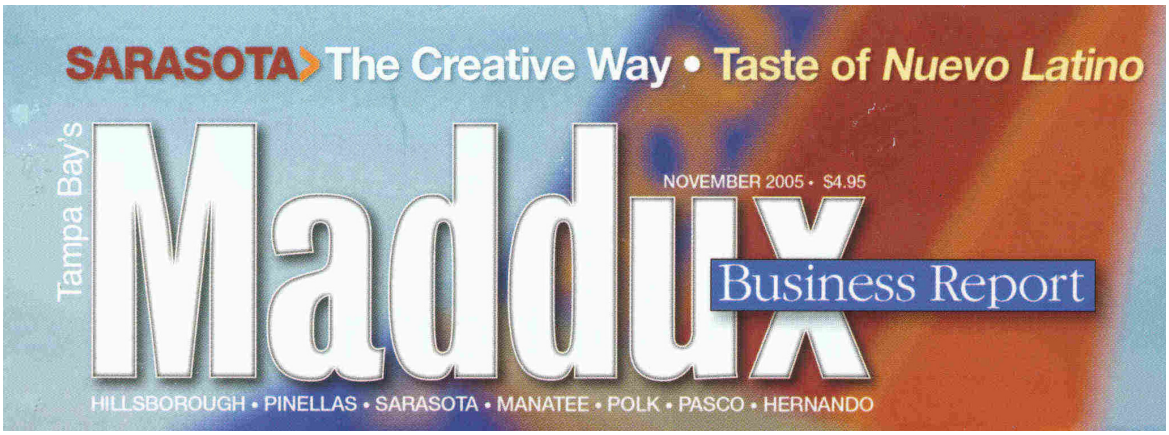
The kit also includes Sustainability Press' 276-page book, "The Solar Electric House" as well automatic enlistment in Solar Direct's new "Frequent E-Buyer" program, including startup points crediting their initial starter kit purchase. With the ability to accrue award points for purchasing other energy-saving Solar Direct products. Award points can be applied to substantial discount savings in future PV solar add-on packages as well as solar water heating and pool heating products. Used in concert with the 2006-2007 Federal Energy Tax Credits available to residential buyers of solar equipment (as well as state-based incentives), the awards program provides potential savings of thousands of dollars towards the purchase price of the solar PV home system.

"With the Solar Freedom Starter Kit, a homeowner can power the essential appliances they need for day-to-day living through a 3-5 day electrical outage", said Dale Gulden, CEO of Solar Direct. "Unlike other 'cabin' kits on the market, our entry-level solar kit includes the key components of battery backup for emergency use and is also upgradeable – so homeowners can add to their investment over time. The homeowner gets immediate energy savings, protection against storm outages and

the ability to scale up their system for complete energy-independence, protecting themselves against certain future energy price hikes."

The Solar Freedom Startup Kit will be available to Florida residents starting January 2006 with a base system package price of $11,690 (battery included).

PRESS COVERAGE



Maddux Business Report, November 2005
by Catherine Russo | catcobb@tampabay.rr.com

The Power of Solar

BRADENTON'S SOLAR DIRECT (www.solardirect.com) is designing a solar water heating (SWH) system for the U.S. embassy in Nigeria. Dale Gulden, CEO of Solar Direct, says: "Electricity is a precious resource in almost all West African countries, where blackouts are routine."

Solar Direct's initial focus in 1986 was NASA-developed heat-pipe technology and geothermal heating/cooling systems. It now sells 350 solar energy products and pool heating systems. The consumer migration to the Internet allowed Solar Direct to create in 1996 its online source for renewable, energy-efficient products that Gulden says has grown to include over 30,000 customers with 1,000 visitors per day. "In a little over a year and a half, we have grown from $1 million to $3 million in revenue. In 2004 alone, our revenues grew 160 percent," he says. Employees have also grown from four to 17.

PRESS COVERAGE

Herald-Tribune, September 2005 | Letters from our readers

Consider solar storm-proofing

In the aftermath of catastrophic Hurricane Katrina, many Gulf Coasters are left in the dark as utilities struggle to get electricity, grids back online, with estimates of up to one month or more before all customers have power restored.

After last summer's storms, many Floridians are purchasing electrical power generators costing $800 to $10,000. Ironically, a 500-watt solar photovoltaic electric system – a $5,000-$7,000 system that also reduces a home's ongoing utility bills – was rarely considered. For the small group of Floridians with solar PV systems, there are no power outages.

There are two other economic incentives for "solar storm-proofing".
"Upgrade as you Go" Utility Price Protection. Useful to retirees, homeowners can gradually increase the system size to eliminate 20 percent to ultimately 90 percent of their electricity bill, also protecting themselves from future price spikes.
The recently signed Federal Energy Act provides an upcoming two-year "sale" on solar equipment, offering a federal tax credit of 30 per-cent of the system cost up to $2,000 per system.

When Floridians "storm proof" with solar renewable energy they support:
Reducing our nation's reliance on foreign oil.
Increasing Florida energy independence. (Florida's population is expected to double over the next three decades, increasing demand for electricity.)
Improving the environmental quality for ourselves and future generations. (The average home solar water heater replaces two tons of annual CO2 emissions, equivalent to a passenger car driving 20,000 miles per year.)

Think twice about how to preserve home power needs today. The storm outages are temporary and unpredictable, but 10-year outlook on energy price escalation and scarcity is becoming more certain.

Dale Gulden
Note: the writer is CEO of Solar Direct, a Bradenton base solar company.

PRESS COVERAGE

HomeownerNet.com, August 2005
Article courtesy of Dale Gulden, CEO Solar Direct, Bradenton, Florida, ©Solar Direct

Solar Home Make-Over

(Ed. Note: While this article mentions Florida, most of this information can apply to other locations as well)

Florida has a virtually limitless and nearly untapped natural resource at its fingertips, and on its rooftops. Here Dale Gulden, CEO of Solar Direct, gives homeowners an overview of ways to tap into solar power to reduce utility bills as well as have an environmentally friendly home with "Tips to Doing a Solar Home Make-Over".

1. Q. What is a Solar Home Make-Over?

A. Simply stated, a solar home make-over harnesses the power of the sun through the use of solar panels to provide your home with an efficient, clean and renewable energy source. This energy is then converted into a form of heat, such as solar water heating, or as electricity, such as solar photovoltaic, making your home energy independent. Especially for Floridians, using solar energy for your home has particular value during the hurricane season, allowing you to avoid storm-related power outages. Stories are in the news daily regarding homes being built or retrofitted with solar systems. ABC's "Extreme Makeover: Home Edition" presented James Dolan of St. Petersburg, Florida, with a new home fit with a solar system.

2. Q. Why should I consider a Solar Home Make-over?

A. First of all, you will become energy independent. This means that you will have your own supply of energy allowing you to avoid any future sharp increases in fossil fuel-based electricity. Second, there is also an increasing consensus that "green" energy-efficient upgrades such as solar water heating, solar pool heating and solar photovoltaic will add resale value to your home. According to the Green Building Appraisal Journal, for every $1 in annual energy savings, $20.73 is added to a home’s resale value. In fact, many mortgage finance companies such as Fannie Mae recognize this idea with "Green Mortgages", where the financing of energy-efficient appliances and solar devices are rolled into the total mortgage. By spending less money on utilities, mortgage companies believe that homeowners will have greater discretionary income to spend on upgrading other aspects of their home.

Finally, there are immense environmental benefits to consider. Did you know that the energy required by a typical water heater emits 2 TONS of carbon dioxide per year? A single passenger car driven 10,000 miles per year contributes approximately 1 ton of carbon dioxide per year. Contrary to popular belief, car emissions do not produce the highest amount of carbon dioxide per year. According to the Earth Policy Institute, electricity generation is by far the largest share at 35%. This is due to the fact that heating and cooling buildings constitutes about 14% of all energy use of the building. More reliance on solar energy causes a reduced demand for fossil fuels and will improve the environment by reducing air and water pollution as well as the heat-trapping gases that cause global warming.

3. Q. What can I do to "solarize" my home and what are the primary benefits?

A. There are three main ways to "solarize" your home:
First of all, you can invest in solar electricity, also known as photovoltaic (PV). Because the media has written a lot about this subject it is the most well-known, but it is also the most expensive. A 3-4 KW [Kilowatt] system for a 3000 square foot home can cost from $24,000 to $40,000. While payback doesnít occur for some 10 years or more, this option is becoming more appealing to Florida homeowners with $400 - $900 per month utility bills. Electric bills can be reduced immediately by 20 to 90%. Plus solar can be used as a backup during power outages, a big plus during hurricanes and storms.

Solar Water Heating (SWH) is a second option. Hot water heating accounts for 25 to 30% of an average U.S. household's energy usage. Given the upfront costs for a system ($3,000-$5,000), a SWH on a new house provided as part of "Green Mortgage" or conventional mortgage, allows for immediate pay-back. (The savings in monthly utility bills exceed the corresponding increase in monthly mortgage payments.) Even as a retrofit, a SWH results in an average 2 to 4 year return on investment. Installing a solar domestic hot water system can reduce your hot water heating bill by 75 to 95%, potentially saving you hundreds of dollars a year. Using sunshine to heat your water is free, environmentally friendly and cost competitive.

Finally, you can install a solar pool heating system. Solar pool heaters start at less than $2000 and go up to $6,000, depending on the size of the pool. The cost of heating a pool with conventional fuels ranges from about $500 per season to more than $2000 per year. Most pool owners with electric, fuel oil or propane heaters no longer use them because of high cost. Here in Florida Solar Pool Heating offers the tremendous additional value of doubling your effective pool use season all for zero operating costs.

SOLAR FACTS

Solar Water Heater
Solar Efficiency: 50 - 65%
Cost per Sq Ft: $ 85.00
Energy Output: 200 Watt - Hrs/Sq Ft /Day
Typical Payback: 3 - 6 years

Solar Electricity (PV)
Solar Efficiency: 10 - 25%
Cost per Sq Ft: $ 90.00
Energy Output: 100 Watt - Hrs/Sq Ft/Day
Typical Payback: 10+ year s

Solar Pool Heater
Solar Efficiency: 55 - 70%
Cost per Sq Ft: $9.00
Energy Output: 300 Watt - Hrs/Sq Ft/Day
Typical Payback: 1-3 year s

DEFINITIONS:

Solar Efficiency - this is the percentage of output of a solar panel compared to the average solar energy hitting the earth from the sun.

Watt-Hrs/SqFt/Day - this represents energy output stated as the amount of Watts [1000 Watts = 1 KW] per hour generated for each square foot of solar panel on a typical day.

4. Q. Which solar upgrade is best to reap maximum energy savings?

A. Solar Facts box above compares the efficiencies and costs for photovoltaic solar electricity (PV) versus solar water heating (SWH) versus solar pool heating (SPH). Given the same size solar collector, SPH turns out to be the most efficient in converting the sunís energy into useable energy, with an average output of 300 watt-hours per square foot per day; household solar hot water heating produces 200 to 250, whereas PV's output is only 100. Overall SPH is the best bargain, with a very low cost per square foot of panels, and the shortest payback period of one to three years. The PV systems, although attractive for other reasons, have the highest cost per square foot, and longest payback period. A very important consideration when designing a solar electric system is to reduce consumption through other methods in order to reduce the amount of electric required by the system. Areas such as usage habits, insulation, air conditioning, water heating, lighting and more should be examined for solutions to reduce power consumption.

5. Q. Which groups receive the most benefit from adopting solar energy sources?

A. Everybody benefits from the economic savings drawn from solar energy sources - homeowners and businesses. Homeowners can benefit from all three technologies. Solar Pool Heaters are the most common in Florida ñ eliminating the high cost of fossil fuel heaters, and extending the season almost year-round. Solar Water Heaters are also very attractive, as the annual savings for a family of four can average $650 ñ yielding an average tax free return on investment (ROI) of 17-35%. Solar Electric systems are becoming more popular due to the generation of free electricity, plus the added security of power during outages. The immediate results from the installation of a photovoltaic (PV) solar system are a dramatic 20-80% decrease in electricity bills. One example translates into an actual monetary savings of $6,480 per year for a 3000 square foot home with a monthly utility bill of $900. In 10 years, that savings would be $64,800; 20 years it would be $129,600. These systems avoid price hikes in electricity, especially attractive to people living on a fixed income such as retirees, who would benefit greatly from a solar energy system’s economic savings, Solar energy is very low maintenance, with no operating costs, thus giving you one less monthly line expense to preserve discretionary spending.

Home Owner Associations (HOAs) also would find the economics particularly appealing. Solar water and pool heating adds property value and decreases overall utility bills on common areas supported by membership fees.

Businesses benefit mostly when using Solar Water Heaters to offset the high cost of process water heating. Many industries use large volumes of heated water in various processes, and with the cost of gas increasing 50 to 150% over the last several years, these costs can be greatly reduced using solar energy. Solar Electricity is also

a viable alternative in many applications, especially where local utility power is not available, or costly to bring on-site.

6. Q. There are many states that have rebates and tax incentives that can reduce the cost of home solar equipment. What kind of state or utility solar incentives exist in Florida?

A. A Renewable Portfolio Standard (RPS) is a policy that requires those who sell electricity to have a certain percentage of renewable power (i.e. wind, solar, biomass, geothermal) in their mix. While there are 19 U.S. states that support a Renewable Portfolio Standard (RPS), Florida does not. This means our state utilities have no incentives to convert to renewable energy sources. Consumers should urge their state representatives to enact more incentives to use the most abundant resource Florida has, the sun. The only present incentive for all state residents is the exemption from Florida's sales and use tax on solar energy systems. In addition, the Jacksonville Electric Authority (JEA) launched the Solar Incentive Program to provide financial incentives to residential and commercial customers who install new and retrofit solar hot water heaters on homes and businesses. There is a maximum award of $25,000 for each new installation and up to 30% of total cost (up to $500) to restore an existing solar water heating system to working order. Lakeland Electric pioneered a most innovative program, offering solar water heater systems free to residents who only pay for the 20-30% of electricity needed to heat their home water.

More important than state tax incentives is a Federal Energy Tax Incentive Bill that is currently awaiting President Bush’s signature. This bill increases the existing 10% tax credit for commercial solar installations to 30% for two years with no cap on amount of credit. This credit applies to all property placed in service after December 31, 2005 and before January 1, 2008. After that point, the credit reverts to the permanent 10% credit. It also creates a new 30% tax credit for residential solar installations for two years that is capped at $2000. It can be applied to all property placed in service after December 31, 2005 and before January 1, 2008. Finally, all solar technologies, including photovoltaic electricity (PV), solar water heating, CSP, and solar hybrid lighting, are eligible to claim the credit.

7. Q. How do I know if my home can support solar upgrades?

A. Generally, unless densely covered by trees, most homes can use a solar solution. While the general rule is that "South facing" roofs work best, (for obvious sun exposure), you can also use roofs facing East, West and even flat roofs. Where limited or steep roofing presents an issue, many find ground-based systems workable, providing there is enough property to support the panels. Undoubtedly, the best time to consider installation is while the house is still in design phase to maximize the sun exposure and roof placement. However, systems can generally be retrofitted to most homes.

8. Q. Can I install a Solar System myself?

A. Many Solar Pool Heaters are available as do-it-yourself kits with easy to follow instructions and readily available customer service support. At Solar Direct, over 50% of our solar pool heaters are installed by homeowners. Solar Water Heaters can also be self installed by an experienced handyman, but are often best installed by a licensed solar contractor due to plumbing intricacies. Solar Electric PV systems are more complex, and generally require a licensed contractor - do-it-yourselfers will

often install some part of the system, and then hire a Solar or Electrical Contractor to complete the wiring and electronic components.

9. Q. Will solar equipment obscure and devalue the property value of my home?

A. Solar has increasingly come to be aesthetically acceptable and even has an "Eco-Chic" value. Traditional solar panels are not the only variety currently available. There are low relief profiles that mold with your roof contour as well as solar tiles and even solar patios in the market. Property values of "green homes" actually have a 5% premium value increase according to Environmental Building News (EBN).

10. Q. What does a homeowner want to look for in a solar system?

A. There are many types of solar water heaters available, but for a highly reliable, care-free system, a passive-type system known as Integral Collector Storage (ICS) should be given strong consideration. These systems contain the water storage and collector all in one simple unit. The system has no moving parts for near-zero maintenance. ICS systems are also low profile, aesthetically pleasing and many of these systems have a 30-year life. Active-type systems are also popular, but have higher maintenance costs due to mechanical parts, so replacement costs can lower the savings benefit.

Solar Pool Heaters have very similar efficiencies, so important considerations would include the quality, warranty and price. SPH panels are typically made from plastic, and like roofing shingles, eventually wear out in the brutal Florida sunshine ñ so look for heavy grade panels with a proven track record for extended life expectancy.

Solar Electric PV systems are relatively new in the market, so they all tend to be state of the art. Look for features that give added value like monitoring readouts to let you know how much you are saving, or battery backup options for power during outages.

11. Q. How do I know if the solar equipment is reliable? What kind of warranties can I get?

A. Florida requires that all solar equipment be certified by FSEC (Florida Solar Energy Center). FSEC tests all equipment and publishes output and efficiency ratings. The Florida Solar Energy Industry Association (FlaSEIA) publishes a member directory, including trained and certified installers. To further insure that you are getting reliable equipment, FlaSEIA has created a program for homebuilders called SunBuilt. The SunBuilt Program is an incentive-based solar program, designed to give builders and potential clients the opportunity to interact with solar water heating technologies. In order for a SunBuilt provider to receive an incentive, they must follow strict guidelines to install reliable equipment. In addition, most solar equipment has an exceptional 10 year warranty!

12. Q. How am I contributing to the environment by using solar water heating and solar pool heating?

A. Solar water heaters do not pollute. By investing in one, you will be avoiding carbon dioxide, nitrogen oxides, sulfur dioxide, and the other air pollution and wastes created when your utility generates power or you burn fuel to heat your household water. For example, by installing a solar water heater, a family of four, who currently use an electric water heater and consume an average of 80 gallons of hot water per day, will

prevent 3,400 pounds of greenhouse gas emissions each year. This represents a reduction in household greenhouse gas emissions of 20% or more for a typical household. Considering the fact that monthly solar savings would exceed the impact of its cost on your mortgage payment; this is something no new Florida home should be without.

13. Q. Can my utility meter "spin backwards" using solar power? Will my utility give me credit for my solar-based energy usage?

A. Net Metering is a method of crediting customers for electricity that they generate on site in excess of their own electricity consumption. If such customers generate more than they use in a billing period, their electric meter turns backwards to indicate their net excess generation. In some areas of Florida, customers are indeed selling back and getting credit for excess electricity.

14. Q. Is using solar energy for electricity and hot water heating a new concept?

A. No, it is not a new concept. Although the use and acceptance of solar energy in this way has gone through many cycles of popularity as new fossil fuels were discovered, solar water heating has been a common use of solar energy for more than 100 years. Today, more than one million buildings in our country alone use state-of-the-art solar equipment to heat water, and over three hundred thousand families use solar for heating of their swimming pool.

15. Q. Don’t solar panels require a lot of maintenance?

A. Your solar-electric system requires little to no maintenance. Photovoltaics have no moving parts and the system needs as much maintenance as your home's main electrical panel. In fact, normal weather such as rain and wind clean the panels sufficiently to maintain efficiency. Solar water heating collectors such as the Integral Collector Storage (ICS) system has been known to perform flawlessly for 20-30 years without maintenance. Solar pool system collectors of the heavy duty variety can last 15-20 years or more and only require an occasional simple check-up to be sure that they are securely fastened. Last season's hurricanes had little affect on well installed solar systems.

16. Q. Where can I find more information on solar upgrades to my home?

A. You can go to www.SolarDirect.com for more information on a wide variety of solar upgrades for your home. To view approved systems visit the Florida Solar Energy Center . Solar Direct provides installations state-wide in Florida; find a detailed list of other contractors at the Florida Solar Industries Association website.

PRESS RELEASE

Solar Direct and TCT Solar Announce First Joint Solar Water Heating Solution Designed for Commercial Applications

New product solution code-named "Azteca" merges proven, reliable solar water heating technology with commercial packaging

Solar World Congress, Orlando – August 10, 2005 – Solar Direct and TCT Solar today announced they are jointly developing and planning to offer a new commercial solution, code-named "Azteca", that will help pave the way for volume purchases of solar water heating (SWH) solutions. "Azteca" will link Solar Direct's value-added engineering expertise with TCT Solar's highly reliable ProgressivTube® technology. With this joint venture, Solar Direct and TCT Solar aim to make SWH more accessible to large-scale commercial and industrial projects, such as multi-unit residential and hot water intensive industries (e.g. Hospitality, Agricultural, and Food Processing).

"Azteca" is designed to answer the specialized needs of commercial customers whose multi-unit SWH systems require (1) high reliability, supporting up to 24/7 application use, (2) the solar energy use can be measured in equivalent electrical kw-hrs and (3) the equipment is supported by commercial-grade customer service. "Azteca" also differs from the conventional stand-alone SWH residential products in the following ways:

- An "Azteca" SWH unit is part of a minimum quantity 20 unit system installation.
- A meter is integrated into the system, either to an individual SWH unit or to an array of SWH units.
- A back-up system is integrated into the base-system platform.
- A PV-based power source for the metering, making the system completely energy-independent.

By integrating "net metering" into the "Azteca" solution, where the thermal energy production is expressed in kw-hrs, the environmental and social attributes of the energy can be traded like those from other green generation sources (e.g. Solar PV, wind energy, etc.).

This means owners of "Azteca" SWH systems will be able to calculate in real-time the demand reduction of fossil-fuel based electricity associated with their investment as well as include solar tradable renewable energy credits (TREC's) as a component of their project financing and ROI.

Jeff Curry, of Lakeland Electric, a Florida utility, pioneered the use of TREC's. He is a strong supporter of using TREC's with Solar Thermal applications, and heralded the "Azteca" plan as a "major step in bringing viable solar energy technology to the commercial marketplace."

The "Azteca" solution builds upon the well-established ProgressivTube® technology which supports:

- The Industry's Lowest Operating and Maintenance Costs. ProgressivTube's® highly reliable design, with no moving parts, allows a product life expectancy of 30 years and has a 10-year warranty.

- Certification to all key SWH standards including those of the Florida Solar Energy Center (FSEC), HUD International Association of Plumbing and Mechanical Officials (IAPMO), Solar Rating and Certification Corporation (SRCC), and the State of Florida wind loading requirements.

- The product is among the highest rated SWH systems as indicated by independent rating services due to its unitary Integral Collector System (ICS) design.

- A Flexible, Scaleable Design that Grows with Your Business. Ideal for process/industrial applications, SWH units are modular, easily chained together to produce N-unit arrays, allowing a business to expand their hot water capacity as needed.

As part of their role in the venture, Solar Direct will perform value-added engineering in the form of:
- Integration of the metering and back-up components of "Azteca".
- Evaluation and design optimization to ease the installation process.
- Support of E-commerce front-end and online first tier customer support.
- On site project management and turnkey installation services.

In turn, TCT Solar will support "Azteca" customers by:
- Offering their Commercial Leasing Program.
- Supporting accelerated delivery of systems.
- Maintaining second and third tier customer support services for businesses requiring minimal downtime and/or where guaranteed hot water availability is mission-critical to a commercial, multi-residential or industrial application.

As part of this expanded partnership, Solar Direct and TCT have agreed to co-market the value-added product solution.

The new product solution is slated for availability to select customers for early access during the 4th quarter of calendar year 2005, with full roll-out in 2006.

"For the first time in the 100-year history of Solar Water Heating, the Industry is now entering a market-driven phase," said Dale Gulden, CEO of Solar Direct, "This is fueled by several factors: heightened concern over energy price hikes, education via the green building movement, and more recently, the emergence of 'Green Marketing' programs."

"With 'Azteca', we offer customers a 'ready-to-go' package," said Steve Gorman, President and CEO of TCT Solar. "The economics of SWH, particularly for 20+ unit installations, now allows self-financing via the fossil-fuel electricity reduction (enabling credit for environmental compliance), marketable securities (through TREC's) and, in most geographies, rebates and other incentives."

Solar Direct and TCT Solar have been working together to deliver SWH solutions to customers for two decades, including design of solar water plant systems to the U.S. Embassy in Nigeria and U.S. Coast Guard in Puerto Rico.

About Solar Direct
A pioneer in the world of energy conservation products since 1986, Solar Direct began with a focus on residential and commercial systems including solar thermal and geothermal heat pumps. On the consumer-side, Solar Direct hosts the Internet's fastest growing Energy Product SuperMall, www.SolarDirect.com, offering over 350 energy-efficient leisure and appliance products to home-owners throughout all 50 states. The company's flagship product, the Vortex™ Solar Pool Heating solution, is nationally known for its home-owner-friendly self-installation, product reliability and high customer satisfaction ratings.

About TCT Solar
From its headquarters in Jacksonville, Florida, TCT Solar manufactures the ProgressivTube® passive solar water heating system. TCT Solar (www.TCTSolar.com) markets its products and systems in more than 75 countries and has a workforce of approximately 15 employees. Over the past two decades, thousands of homeowners and businesses have enjoyed the benefits of the ProgressivTube®. It has earned a reputation of high reliability, durable design and low maintenance. ProgressivTube® is considered the most "Obvious Technology®" in solar.

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LEE CENTER FOR REHABILITATION AND WELLNESS
CAPE CORAL, FLORIDA

CASE STUDY

Hospital Pool reduces a health risk, adds luxury amenity

Cape Coral Hospital, listed as one of the 100 Top Hospitals in the United States, has served Lee County, including the communities of Cape Coral, North Fort Myers and Pine Island for over 20 years. Associated with the hospital is the Lee Center for Rehabilitation and Wellness Center. The Center's many amenities include an indoor 25,000-gallon chlorinated therapy pool used by patients and wellness club members.

Problem. The hospital facility manager was concerned about the health-risk issues surrounding chlorine pool use, particularly within a healthcare facility.

Chlorine, its byproducts and even the pH levels of pools, have all been associated with patient health issues. Recent studies in both the US and Europe found swimming regularly in chlorinated pools puts children at risk for asthma as well as other deleterious health issues. Indeed, the existence of respiratory problems in competitive swimmers has been known widely for some time.

The facility manager was seeking a solution that would not only address the health issue, but one which would be perceived by patients and members as more than a "utility change" but also as an improvement to the facility's environment.

Solution. In May, 2006, Solar Direct, in partnership with AutoPilot Inc., designed and installed an advanced pool purification system for the Center's therapy pool. Using the Digital Pool Pilot (a salt chlorine generator) the system maintains low levels of pH-balanced chlorine that purify the water automatically, while elimininating chlorine's side-effects. (Chlorine remains but in very low trace-level amounts.)

The system addresses the health issues, improving both water and air quality. Further, from a hospital marketing viewpoint, the system is well-received as the system produces soft, silky and clear water for pool users.

From a facilities maintenance view, the system is cost-efficient, reducing the need and therefore cost for pool maintenance chemicals. Longer term, pool equipment corrodes at a much slower rate compared to traditional chlorine generators.

System configuration: 2 Digital Pool Pilot Systems
2 salt conversion cells

Indoor Pool Size	25,000 gallons
Bather Load	75 people/day
Temperature Requirements	84-94 deg F.
Costs and ROI	
System plus installation Cost	$4420
Pre-Install Chemical Costs/Year	$1550/Year
Post-Install Chemical Costs/Year	**$0/Year**
Payback Period	2.9 Years
8-yr. chemical & Equipment Maintenance savings	$1790

UNITED STATES EMBASSY
Abuja, Nigeria
CASE STUDY

LOCATION: **Abuja, Federal Republic of Nigeria, Africa**

SYSTEM CONFIGURATION: **20 ProgressivTube® (PT—50) ICS Units**
One electric backup storage tank system

COLLECTOR FOOTPRINT: **640 SF**

System Performance:	**574,000 Btu/Day**	**[168 KWH/Day]**
Total Hot Water Heating Loads:	**Max/Hr:**	**286 Gal/Hr**
	Av/Day:	**1080 Gal/Day**
	Max/Day:	**2980 Gal/Day**
Water Heating Requirements:	**Input Level:**	**77 deg F**
	Max Temp Req.	**140 deg F**
Solar Provision (%) of Daily Load:	**Daily Average Load**	**101 %**
	Daily Maximum Load	**36.4%**

Project Background

In 2001, the United States State Department decided to relocate the Nigerian embassy to Abuja and selected the Berger Group as part of a joint venture with DMJM to take part in the design and construction of a new compound. Berger prepared civil, geotechnical, mechanical, electrical and sanitary designs, to enable self-sufficiency.

As part of the goal toward energy self-sufficiency, project managers enlisted **Solar Direct** to design and deliver a solar water heating system for the 5-story, 90,000 SF Chancery Building within the compound. The building's water heating requirements are mixed-use including 190 offices, a cafeteria and five live-in apartments for visitors. Solar water heating, in reducing the use of fossil-fuel based electricity succeeded in reducing the overall system load and therefore required size of the compound's independent power plant.

What motivated the State Department's investment in solar water heating? Electricity is a precious resource in almost all West African countries, where black-outs are routine due to little investment and maintenance, leaving the infrastructure creaking at the seams. ***Nigeria, a prime example, operates at one-third of its installed capacity*** due to aging equipment. Nigeria has become one of the world's leading consumers for stand-by generators.

BOY SCOUTS OF AMERICA
National SeaBase Training Camp
CASE STUDY

LOCATION: **Marathon, Florida Keys USA**

SYSTEM CONFIGURATION:
224 sf of Flat-Plate Active Collectors
4 Building Installation
Open Loop Design

Total Domestic Hot Water Heating Loads:	**Av/Day: 350 Gal/Day**
Water Heating Requirements:	**Input Level: 78 deg F** **Max Temp Req: 140 deg F**
Solar Provision (%) of Daily Load:	**82% Daily Average Load** **65% of Daily Maximum Load**

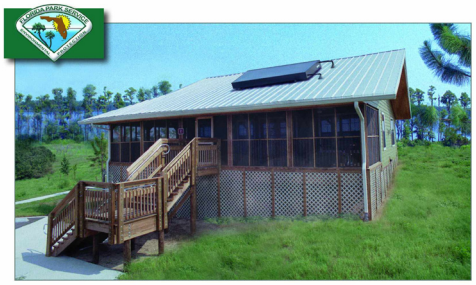
Project Background

The Boy Scouts of America (BSA) National SeaBase is a recently constructed training facility that hosts over 5000 scouts annually. In their design, BSA project engineers sought an approach which would support low monthly operating expense but also would protect the environmental integrity of the Florida Keys' fragile ecosystem.

As the Keys are an area susceptible to both strict environmental laws as well as storm-based power outages, the architects designed the seven-unit facility to incorporate a renewable energy source.

Solar water heating (SWH) was chosen primarily for its reliability and operating cost efficiencies. The SWH panels passed final testing by remaining in place and intact during Hurricane Hugo's sustained winds of 180 mph and gusts in excess of 230 mph.

FLORIDA PARK SERVICE
Lake Louisa State Park
CASE STUDY



LOCATION: **Clermont, Florida USA**

SYSTEM CONFIGURATION: **SWH System – 20 Cabins**
ProgressivTube® (PT—50) ICS Unit

40 Gal. Electric backup storage tank

System Performance:	**574,000 Btu/deg [168 KWH/Day]**
Total Domestic Hot Water Heating Loads:	**Av/Day: 2000 Gal/Day**
Water Heating Requirements:	**Input Level: 75 deg F** **Max Temp Req: 140 deg F**
Solar Provision (%) of Daily Load:	**100% Daily Average Load** **70% of Daily Maximum Load**

Savings and Return on Investment

Energy (DHW) costs without Solar:	**$12,000**	**Annual Energy Savings:**	**$10,200**
DHW costs with Solar:	**$1,800**	**Payback Period:**	**5.1 Years**
SWH System Costs:	**$52,000**		

Project Background

Part of the Green Swamp Conservation Area, Lake Louisa State Park covers more than 4,000 acres and hosts one of 13 lakes in a chain connected by the Palatlakaha River. Overlooking Lake Dixie on a ridge, its 20 newly built cabins offer modern lodging facilities – including state-of-the-art solar water heating systems.

The Lake Louisa State Park Project is but one of many solar initiatives funded by Florida's Department of Environmental Protection (DEP) under Governor Jeb Bush. DEP's well-known conservation programs include Front Porch Sunshine, Sunshine Schools and Sunbuilt.

These programs promote solar adoption by those who can best benefit from its superb economics (e.g. low-income families) as well as solar's inclusion in future Florida infrastructure (namely, home-building and schools).

Following this line of public education, in June 2003, the Energy Office within DEP provided funding to the Florida Park Service to use solar technology. The Park Service selected the park sites based on solar access and high visitor traffic. Lake Louisa State Park's 20 cabins were fitted with SWH units and opened for rental in July 2005.

Serving its mission to both protect the environment and educate the public on the role of solar power in energy conservation, the Florida DEP invested in Lake Louisa State Park (as well as other parks) to "bring solar before the mainstream". park visitors who rent the cabins can learn through first-hand experience that solar water heating is not only working technology but is completely transparent for their domestic water applications.

From the Park Service side, SWH allows lower park operating expenses associated with solar energy use supplanting fossil-fuel based electricity. This combined with ProgressivTube's 30-year product life expectancy and near zero maintenance costs, made ProgressivTube the truly "Natural" choice.

PENSACOURT HEALTH, RACQUET AND FITNESS CLUB
Pensacola, Florida
CASE STUDY


LOCATION: **Pensacola, Florida USA**

SYSTEM CONFIGURATION: **Solar Pool Heater - 42 Vortex™ Collectors**
Solar Water Heater- 5 ProgressivTube® (PT-50) ICS Units

Combined System Performance:	**1.9 M Btu/Day [603 KW-Hr/Day]**
Pool Size:	**25,500 Gallons**
Pool Heating Requirements:	**Continuous 87 degrees F**
Solar Provision of Daily Winter Load:	**80%**

Savings and Return on Investment

Energy costs without Solar:	**$1250/month (natural gas)**	**Annual Energy Savings:**	**$13,500**
Energy costs with Solar:	**$250/month**	**Payback Period:**	**5 years**
SWH System Cost:	**$12,500**		

Project Background

Serving hundreds of people's athletic activities every day, health and fitness clubs require considerable and ongoing (some 24x7) demand for hot water for members' cleaning/showering as well as pool heating for swim work-outs and aquatic exercise.

The Pensacourt Health Club serves over 400 fitness members per day, where members take advantage of the club's exercise equipment and instructor led classes. Facilities include a year-round use 25,500 gallon pool that is bubble-domed in the winter.

Before the solar installation, the showers and pool were heated with gas. Why did the fitness club owner invest in solar? Reducing monthly energy expense to improve club operation profitability was a core goal. Solar pool heating in particular allowed the health club to retain swim-oriented members over additional months, as solar extends the useable pool season.

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VORTEX

Enjoy the feel... of a Solar heated pool or spa.

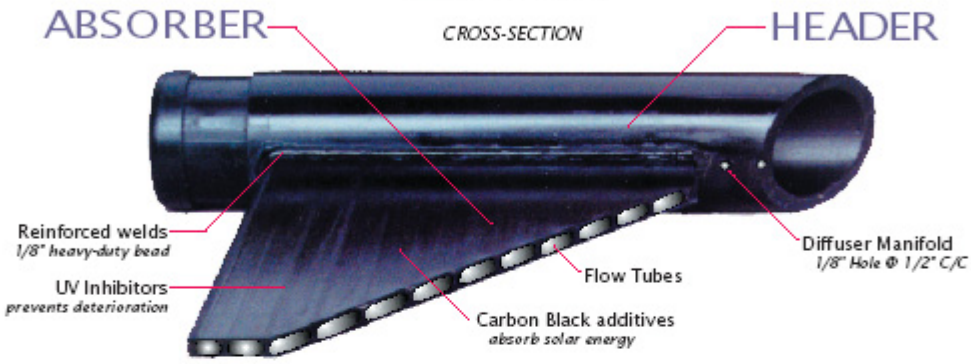
VORTEX is committed to providing the very highest quality, most durable pool heaters in the solar industry, and we back it up with the best customer warranty offered today.

VORTEX panels are designed to meet heavy-duty commercial grade specifications, and are totally covered by a TEN YEAR Full-Replacement warranty, which includes labor and freeze protection.[1]

VORTEX
Quality Solar Heaters

VORTEX™

VORTEX
Commercial Grade Solar Panels



- Flow rate/pressure and construction characteristics:

VORTEX panels are designed to combine high flow rates with low system pressure. This allows for a maximum transfer of heat while reducing strain on the pool pump. Material composition is 30% heavier than industry standards.

MODEL	VT32	VT40	VT48
	US | Metric	US | Metric	US | Metric
THERMAL PERFORMANCE[2]			
Panel Output Btu/day | Kj/day	45,600 | 48,100	38,100 | 40,181	30,400 | 32,060
Sq Ft Output Btu/ft² | Kj/m²	958 | 10,858	958 | 10,858	958 | 10,858
Efficiency Btu/ft²/(1600 Btu/ft² A/C)	60%	60%	60%
DIMENSIONS ~WEIGHT~ FLOW/Parallel forced circulation			
Nominal Size ft | m	4x12 | 1.22x3.66	4x10 | 1.22x3.05	4x8 | 1.22x2.44
Collector Length in | cm	144 | 365.8	120.25 | 305.4	95.575 | 242.8
Absorber Width in | cm	47.50 | 120.7	47.50 | 120.7	47.50 | 120.7
Header Width in | cm	50.75 | 128.9	50.75 | 128.9	50.75 | 128.9
Header OD in | cm	1.90 | 4.83	1.90 | 4.83	1.90 | 4.83
Header ID in | cm	1.48 | 3.76	1.48 | 3.76	1.48 | 3.76
Gross Collector Area ft² | m²	47.64 | 4.43	39.79 | 3.62	31.65 | 2.88
Dry Weight lbs | kg	30 | 13.6	25 | 11.3	20 | 9.1
Wet Weight lbs/ft² | kgs/m²	1.35 | 6.74	1.39 | 6.95	1.46 | 7.18
Fluid Capacity gal | l	4.12 | 15.57	3.64 | 13.76	3.18 | 12.02
Max Flow gpm | mlps	10 | 633	10 | 633	10 | 633
Min Flow gpm | mlps	3.0 | 190	2.5 | 158	2.5 | 158
Recommended gpm | mlps	4-5 | 253-316	4-5 | 253-316	4-5 | 253-316

Pressure: Drop 0.15psi | 1.03kPa Max 90psi | 620kPa Operating Φ140°F 35psi | 241kPa
Optical Radiation Performance: Solar Absorptivity 95% Infrared Emissivity 92%

[1] See Warranty for complete details [2] Test results from Florida Solar Energy Center (FSEC)

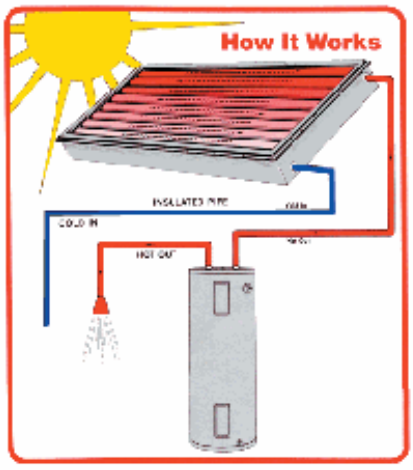
VORTEX manufactured by:

Quality and Service since 1986
© Pool heating Distributors 1998

Authorized VORTEX Dealer:

V O R T E X
Quality Solar Heaters

ProgressivTube®
SOLAR WATER HEATER



The ProgressivTube® Passive Solar Water Heater is a self-contained unit that acts as a solar collector and storage tank integrated into one piece of equipment. In most systems the unit is utilized as a pre-heater to a instantaneous or conventional water heater. It can also be used as a stand-alone heater when no backup is required.

The **ProgressivTube®** is a passive system because it has no moving parts and operates on local water pressure and solar radiation. There are no pumps or controls to maintain and no electrical energy is required to make it function. Once installed the system will operate automatically. When hot water is used in the household, solar pre-heated water is drawn into the conventional water heater (reducing or eliminating electricity or gas usage for heating water) or directly to the tap. However, as with all solar water heaters, the total amount of solar contribution to the system is dependent upon the hot water consumption pattern, daily weather conditions, and variable amounts of available sunlight throughout the year.

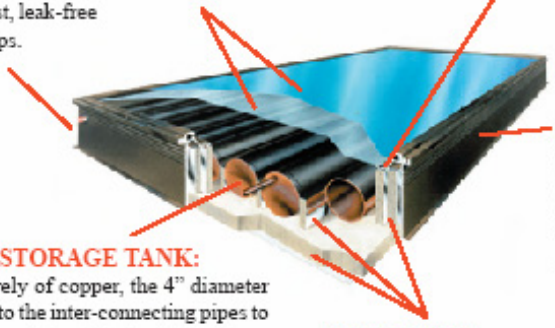
The collector/storage tank of the **ProgressivTube®** absorbs solar radiation through its selective surface coating which raises the temperature of the water stored in the collector. It is well insulated with closed cell foam and the unit is double glazed for increased heat retention. The eight copper tubes are welded into a series flow pattern so that the top of the lower tube feeds the bottom of the next tube. This allows the **ProgressivTube®** to contain the colder replacement water in the lower tubes where it is heated by the sun as it flows from one tube to the next. Each time hot water is used, the **ProgressivTube's®** innovative design eliminates the cooling down of the remaining heated water that normally occurs in other types of batch heaters. Not only does this design ensure the delivery of the hottest water, but is also provides more hot water at a higher temperature and with a faster recovery time than solar systems of similar capacity.

SUPERIOR CONSTRUCTION

GLAZING:
Outer glazing is tempered low-iron solar glass with 91% transmittance. Inner glazing is Teflon® film, known for its high temperature tolerance (525°F) and its long term durability and stability, transmittance 96%. The 1" air space between glazings reduces heat loss.

GLAZING GASKETS:
A continuous gasket made of special long life EPDM synthetic rubber is compressed by the glazing caps to seal out the weather. The inner glazing spline is made of high-temperature tolerant EPDM.

FLUID CONNECTIONS:
Inlet and outlet connections are made of nominal 3/4" diameter hard copper pipes. This allows for fast, leak-free plumbing hook-ups.



CASE:
The baked-on bronze acrylic finish of the hard temper extruded aluminum framewall and glazing caps assures years of attractive rust-free appearance. All rivets and bolts are aluminum or stainless steel. Aluminum back sheet .025".

ABSORBER / STORAGE TANK:
Constructed entirely of copper, the 4" diameter tubes are welded to the inter-connecting pipes to form a series flow pattern. The tank is pressure rated to 300 psi, holds 41.13 gallons of water, and is coated with a high-temperature "selective" solar radiation absorption surface that maximizes heat gain and reduces heat loss.

INSULATION:
Rigid phenolic foam board, the most efficient insulation available, is used to maximize heat retention. Sides and ends of the unit have 1.5" board, R-value 12.5; bottom has 2" board, R-value 16.7; between tank tubes has 1.5" board, R-value 12.5.

REASONS FOR INSTALLING THE PROGRESSIVTUBE®

1. Solar water heating reduces the monthly operating expense of the household.
2. Reduced operating expenses give homeowners more cash for discretionary purposes, savings, etc.
3. Solar water heaters are the only home appliance that saves money without reducing comfort or convenience.
4. Solar water heating is a hedge against higher future energy costs, which are a certainty.
5. Reduce dependence on foreign oil and the need to build expensive new power plants.
6. Solar is environmentally safe, conserves resources and reduces air pollution which causes acid rain, the "Greenhouse Effect" and respiratory health problems.
7. The **ProgressivTube®** has no moving parts to fail or maintain.
8. The unit doubles the hot water supply of the house when added to an existing water heater.
9. The **ProgressivTube®** unit comes with a Ten Year Factory Warranty, including freeze damage and has a minimum design life of 30 years.
10. Solar Energy is technology that contains the cost of the fuel in the initial price of the equipment.
11. Can be used as a stand alone heater; great for remote areas or where no electric is available for heating water.
12. Can be installed on almost any house as a retrofit, connecting to the existing water heater.
13. Can be installed on the roof or the ground.
14. The best time to install a solar water heater is when a home is being built. The homeowner is immediately in a positive cash flow position because the utility savings are far greater than the mortgage

WHAT SIZE DO I NEED?

First estimate your hot water demand in gallons per day; use the chart below for an average figure (Note: add 15 gallons per additional person or 20 gallons per additional room). It varies widely with lifestyle (from 10 to 30 gallons or more per person) and with season (most people take longer and hotter showers in the winter). For situations involving small families in a large house, the number of bedrooms should be considered in sizing a solar water heater. A system sized to meet the needs of two people in a five bedroom house today will likely be inadequate for a family of five living in the same house tomorrow.

People	Gallons	Bedrooms	Gallons
1	20	1	30
2	40	2	50
3	55	3	70
4	70	4	90
5	85	5	110

Next, choose a system from the following chart based on the gallons required. Note that multiple units may be combined to achieve the total gallons desired. It is generally wise to slightly oversize the system to help reduce backup requirements.

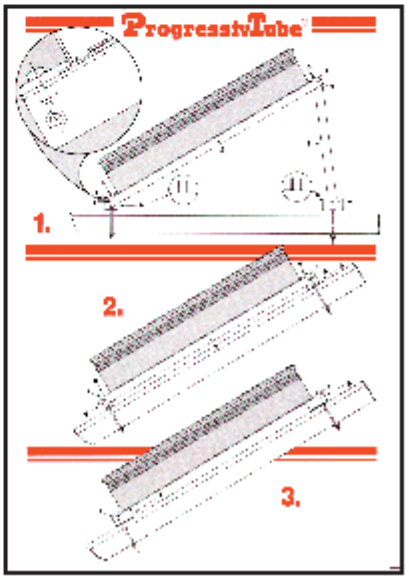
Model	PT-30	PT-40	PT-50
Average Output (gallons)	60	80	100

SPECIFICATIONS & TYPICAL INSTALLATION METHODS

Performance System Ratings:
PT-30CN 22,100 BTU/Day
PT-40CN 28,400 BTU/Day
PT-50CN 28,700 BTU/Day

Flow Pattern: Series
Test Pressure: 300 PSI
Design Pressure: 150 PSI
Maximum Design Temperature: 350°F
Normal Operating Temperature: 40 - 200°F
Wind Loading Testing to 180 MPH

Model	PT-30	PT-40	PT-50
Capacity (Gal)	30.84	41.13	51.40
Length (Inches)	97.44	97.44	97.44
Width (Inches)	35.44	47.44	47.44
Depth (Inches)	8.44	8.44	8.44
Gross Area (Sq Ft)	23.98	32.10	32.10
Dry Weight (Lbs)	190	241	268
Wet Weight (Lbs)	448	575	695
Wet Weight per/sqft (Lbs)	18.7	17.9	21.7



WHAT IS THE COST?

Model	Description	List Price	Your Cost[1]
PT-50	ProgressivTube 50 Gal Unit	$6650.00	$ .00
PT-40	ProgressivTube 40 Gal Unit	$6450.00	$ .00
PT-30	ProgressivTube 30 Gal Unit	$5950.00	$ .00

SAVINGS & RETURN ON INVESTMENT

An average family of four uses 70 gallons of hot water per day at a cost of $535[2] per year.
The typical Solar Water Heater will **save 90% or more of the heating costs, or $482.00 per year.**
A typical heater of this size (PT-40CN) with installation averages $6650 minus a 30% tax credit; your net cost is $4655.00

The **tax-free return** on this investment would be 9.6% ROI ($482 / $4655)

Calculate your own Tax-Free Return On Investment (ROI):

Estimated Savings _____ divided by **Your Cost**[1] _____ equals _____ % ROI

[1] Call for "Your Cost" on a Complete Do-It-Yourself Kit or Installation.
[2] Based on 72°F incoming water heated to 140°F in Florida with an electric rate of $0.10 per kilowatt plus standby heat loss from a new electric water heater. As the age of the tank increases, the cost of operation increases. Your savings may vary based on your usage, water temperature, climate and electric rate.

For more information contact:

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Solar Freedom™ Starter Kit

◆ Peace of Mind ◆ Energy Independence ◆ Environmentally Responsible Choice

Enough sunlight hits the United States each day to provide for the entire world's electricity needs. Taking advantage of this clean, renewable and highly available resource could put Americans in control of their electrical needs. While devastating storms will continue to ravage the country, Americans could potentially avoid the electrical blackouts left in their wake.

Coming to the aid of home-owners seeking both lower monthly bills and reliable home power solutions, Solar Direct offers consumers the **Solar Freedom™ Starter Kit**, an All-In-One entry-level solar photovoltaic (PV) package, combining immediate power backup, regular monthly utility savings and the long-term ability to grow the home solar system into complete energy-independence.