Business Plan

for

Solar Energy System Installations and Energy Efficiency Retrofits

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Executive Summary

This project for Solar Energy System Installations and Energy Efficiency Retrofits (SEER) is designed to be financially profitable, technically feasible and good for investors, customers, staff, the community at large, and the environment.

Vision

The modern world offers huge potential. More people are better educated than ever before and scientific knowledge and technology offers solutions to most of the world's problems. The responsibility of business is to ensure that there is economic activity that helps the world to progress, and initiatives that address the subject of solar energy and energy efficiency are a priority for this.

Goals and Objectives

The goals of this project for Solar Energy System Installations and Energy Efficiency Retrofits (SEER) is to be an efficient organization to implement these SEER activities and to do it in a way that the organization is financially profitable and therefore sustainable, so that investors have a low risk and safe investment opportunity, that customers get a good outcome and society as a whole gets a positive impact.

The Investment Opportunity

The energy industry is a major area for investment, and policy makers in the US and elsewhere are looking to this sector to be the driver of future prosperity. The basic economics of energy and developments in technology are making the area of Solar Energy System Installation and Energy Efficiency Retrofits increasingly attractive. SEER is positioned to grow in this segment of the energy market.

Sector studies show the vast potential of this segment of the market. Some well known investors including Warren Buffet have make long term investments in the sector.

But the studies do not explain why the growth of that sector has been quite slow relative to the potential. Our financial analysis suggests that this is because there are mismatches between the needs of the consumer and the structure of the suppliers of the systems and the financing. The SEER project addresses this constraint.

Strategy. Organization and Management

Accordingly, SEER has a strategy is to build to the maximum extent possible on what exists rather than to do create something new. The working level of the project uses existing contractors who are good at the practical work but get constrained by complex incentives, regulations and paperwork.

The strategy responds to the fragmented nature of the contracting market and respects the unique strengths of this community, including the role that local business plays in strengthening local community.

At the same time the project is organized so that the major issues of financing, negotiating incentive opportunities and ensuring good design and quality control are handled with units that address these matters: (1) A 'holding' entity with financing unit; and (2) A project management and oversight entity.

Financing Plan and Profitability

The proposed financing is a $25 million loan instrument with an effective interest of 4% per annum and repayment in 15 years.

The base scenario shows that that this funding will enable the SEER project to become profitable in Year 3, and grow in profitability thereafter. Repayment of the loan will be possible well before the maturity.

Risk

While there are all the normal risks of business, the financial and economic risk is small. The trends of technology should make the future of this segment of the energy sector more profitable not less, and future higher prices for fossil based energy makes the SEER project more attractive, not less.

Keys to Success

The key to SEER's success will be the careful matching of competence and cost.

The project is based on:

- the availability of modern technology that enables solar systems to be economical; and
- old fashioned hard work and supervision that makes it possible for decent wages to be paid while achieving low cost results.

Key Operating Statistics

United States Dollars

		Year 1	Year 2	Year 3	Year 4	Year 5
Solar Energy Systems						
Installations completed	KW	700	1,200	1,200	1,200	1,200
of which sold outright	KW	280	480	480	480	480
Installations under lease	KW	390	1110	1830	2550	3270

Key Financial Elements

United States Dollars

	Year 1	Year 2	Year 3	Year 4	Year 5
Key balance sheet items					
Construction in progress	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000
Solar energy systems on lease	1,860,000	4,990,000	8,110,000	11,240,000	14,360,000
Total assets less cash	$2,900,000	$5,790,000	$8,500,000	$11,020,000	$13,360,000
Total assets including cash	**$4,140,000**	**$13,730,000**	**$23,990,000**	**$25,240,000**	**$27,210,000**
Financed by:					
Loan finance instrument	5,000,000	15,000,000	25,000,000	25,000,000	25,000,000
Other creditors	0	0	80,000	400,000	710,000
Retained earnings	-860,000	-1,270,000	-1,090,000	-160,000	1,500,000
Total liabilities and equity	**$4,140,000**	**$13,730,000**	**$23,990,000**	**$25,240,000**	**$27,210,000**
Key income items					
Outright sale of solar installations	1,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Income from owned solar installations	220,000	1,400,000	2,700,000	4,000,000	5,290,000
Sales of energy efficiency retrofits	0	0	0	0	0
Total Revenue	**$1,620,000**	**$3,800,000**	**$5,100,000**	**$6,400,000**	**$7,690,000**
Sales of solar installations	220,000	380,000	380,000	380,000	380,000
Margin from owned solar installations	220,000	1,400,000	2,700,000	4,000,000	5,290,000
Sales of energy efficiency retrofits	0	0	0	0	0
Total Gross Margin	**$440,000**	**$1,790,000**	**$3,080,000**	**$4,380,000**	**$5,680,000**
Total general expenses	1,040,000	1,360,000	1,410,000	1,450,000	1,520,000
Financing costs	200,000	600,000	1,000,000	1,000,000	1,000,000
Depreciation and amortization	60,000	230,000	420,000	600,000	790,000
Tax on corporate profit	0	0	80,000	400,000	710,000
Profit after tax	**-$860,000**	**-$410,000**	**$180,000**	**$930,000**	**$1,660,000**

Economic Overview

Energy History

This project becomes important because of history. In very broad terms there have been several important themes as follows:

- The United States developed its industry and infrastructure over the past century with the assumption that there would be an unlimited and enduring supply of exceptionally low cost energy. This assumption was valid until the 1970s when countries like the United States had to face the OPEC 'oil shock' when global energy prices reset at levels much higher than had prevailed before;
- Because of the history of low cost energy, US industry and US infrastructure was built in ways that were extremely energy inefficient whether it was industrial processes, transportation equipment, residential housing or commercial and industrial buildings. Much of this infrastructure still exists … a large proportion of the buildings in the United States were designed and built more than 30 years ago when energy costs, especially in the United States, were much lower than they have been in recent years;
- Even though the 'oil shock' took place about 40 years ago, many building owners are still 'in denial' about the fact that in the present and increasingly in the future there will be very high energy costs relative to the past;
- Belatedly perhaps, but now policy makers (in Washington at the Federal level and in State Capitals around the country) understand the need to provide incentives to encourage the growth of the energy retrofit industry and are moving on a multitude of initiatives

Technology and economics are now driving investment towards energy efficiency projects.

It is worth noting that:

- Gasoline sold for 27 cents a gallon in 1973. In 2013 the price is around $3.50 a gallon.
- Crude oil was at $3.50 a barrel before 1973 and is now around $95.00 a barrel.

These examples are not adjusted for change in the value of the dollar over time, and the many changes in costs and prices that have taken place over the years.

This plan addresses two separate but associated segments of the construction business market:

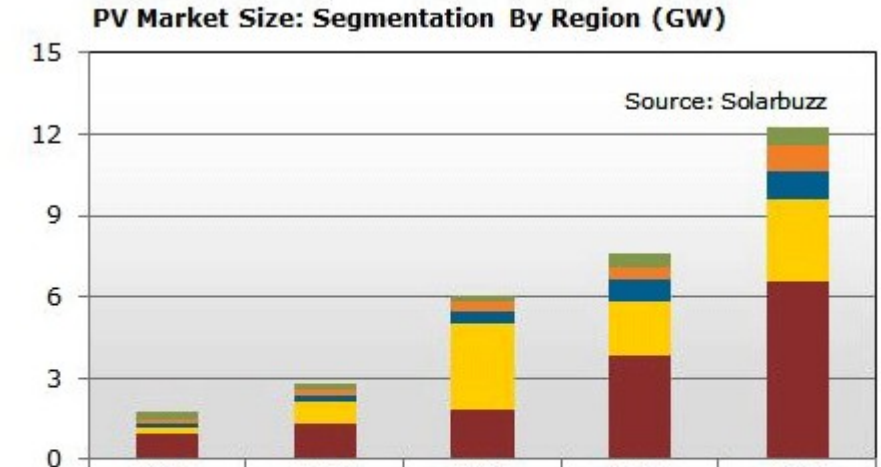
1. Solar Energy System Installation, and
2. Energy Efficiency Retrofits

While it is apparent that both these market segments have strong growth prospects, there is a big gap between what would appear to be the market potential and the actual achievement. The 'devil is in the detail', and the question 'Why then is there rather little investment in the sector relative to the potential?' needs to be answered.

Market

Solar Energy System Installations

The global market for solar systems has been growing fast as shown in the following graphic. Note that Germany is the biggest user of solar systems.



	2006	2007	2008	2009	2010
JPN	0.30	0.23	0.23	0.48	0.62
USA	0.14	0.22	0.36	0.49	0.97
ROW	0.15	0.22	0.50	0.81	1.02
ROE	0.18	0.82	3.13	1.94	3.01
GER	0.97	1.33	1.86	3.87	6.60

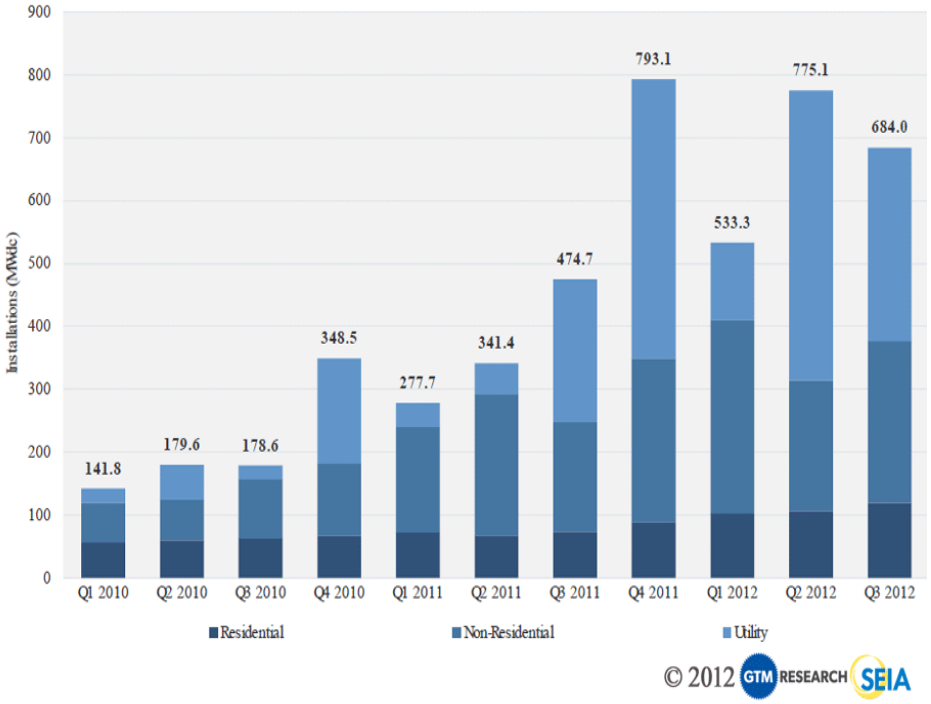
According to the solar industry observer SolarBuzz, in 2009 solar (PV) installations were 7,300 MW in 2009 and are expected to reach 8,400-13,100 MW in 2010. Their forecast scenarios predict demand rising to 15,400-37,000 MW in 2014, more than five times the size of the 2009 market.

Solarbuzz estimates that in 2009, the photovoltaic solar industry generated $38.5 billion in revenues globally, which includes the sale of solar modules and associated equipment, and the installation of solar systems. Their forecast scenarios, depending on their assumptions, project growth in the world PV market from $46.3 billion to $96.8 billion in 2014.

According to SolaBuzz, in the five years from 2005 to 2010 the generation of energy from solar in the United States increased from 140 MW to 970 MW, about a 7 fold increase. However, compared to Germany the installed solar capacity in the USA is small. The equivalent data for Germany is an increase from 970 MW in 2005 to 6,600 MW in 2010.

In 2011, according to the industry association SEIA, there were 297 MW of residential PV installations in the United States, compared to some 761 MW in Germany. There has been a higher rate of installation in 2012 according to the quarterly numbers that have been published.

FIGURE: U.S. PV Installations by Market Segment, Q1 2010 to Q3 2012



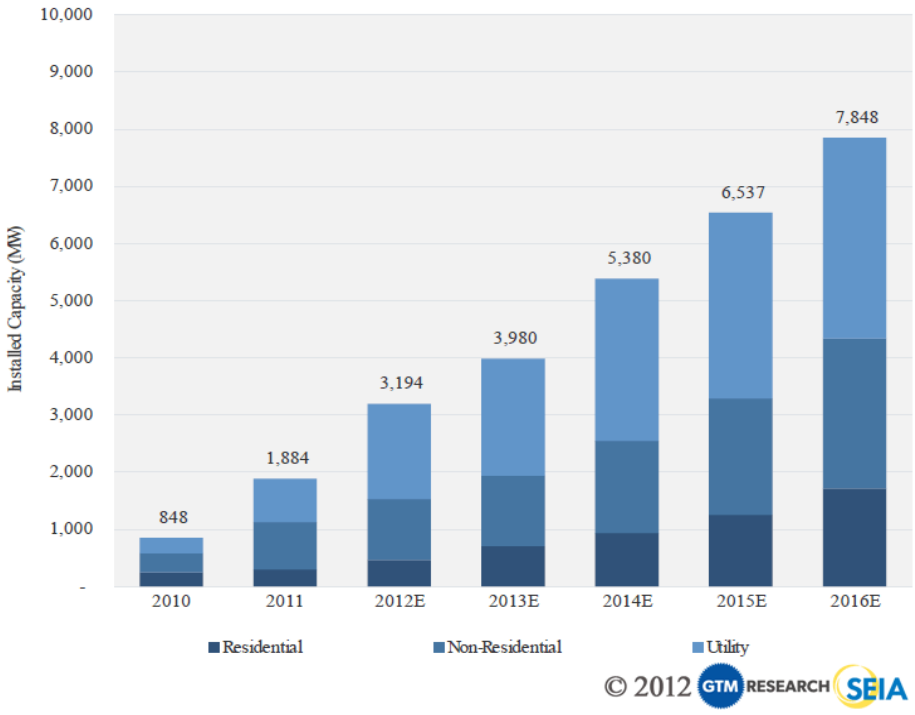
Source: SEIA/GTM Research U.S. Solar Market Insight

If the total for residential installations is 400 MW for the whole of 2012, at an average installed price of $5.00 /Wdc the residential market size is about $2 billion annually.

If the total commercial installations is 1,000 MW for the whole of 2012, at an average installed price of $4.00 /Wdc the commercial market size is about $8 billion annually.

Using this logic, the total would be about $10 billion annually. There has been rapid growth over the past three years and this may increase as the value to the end user becomes more obvious.

The following graphic shows how the industry association projects the growth of installed capacity until 2016. The combined residential and commercial segment is projected to almost triple in three years from 1,400 MW installed in 2012 to about 4,200 MW installed in 2016. An estimate of the installed cost would therefore be $5,6 billion in 2012 increasing to $16.8 billion in 2016, and increase of $11.2 or say $4 billion a year.



Source: SEIA/GTM Research U.S. Solar Market Insight

Though the specific size of the market is difficult to determine, the trend towards a bigger market is clear.

More important, is whether or not the market will be profitable. The profitability of the solar energy system installation business will be determined in large part by the way the business is structured and managed.

The confusion about prices and cost … and therefore profit is shown in the graphic later (page 10) which shows the range of prices for installed capacity in both the residential and the commercial segments of the market and the graphic later (page 12??) which shows a huge difference between the cost makeup in the United States relative to Germany.

There is a classic opportunity in the segment for a well managed business to grow faster and more profitably than the industry average because of the existing fragmentation of the industry and the proliferation of very small enterprises with low efficiency.

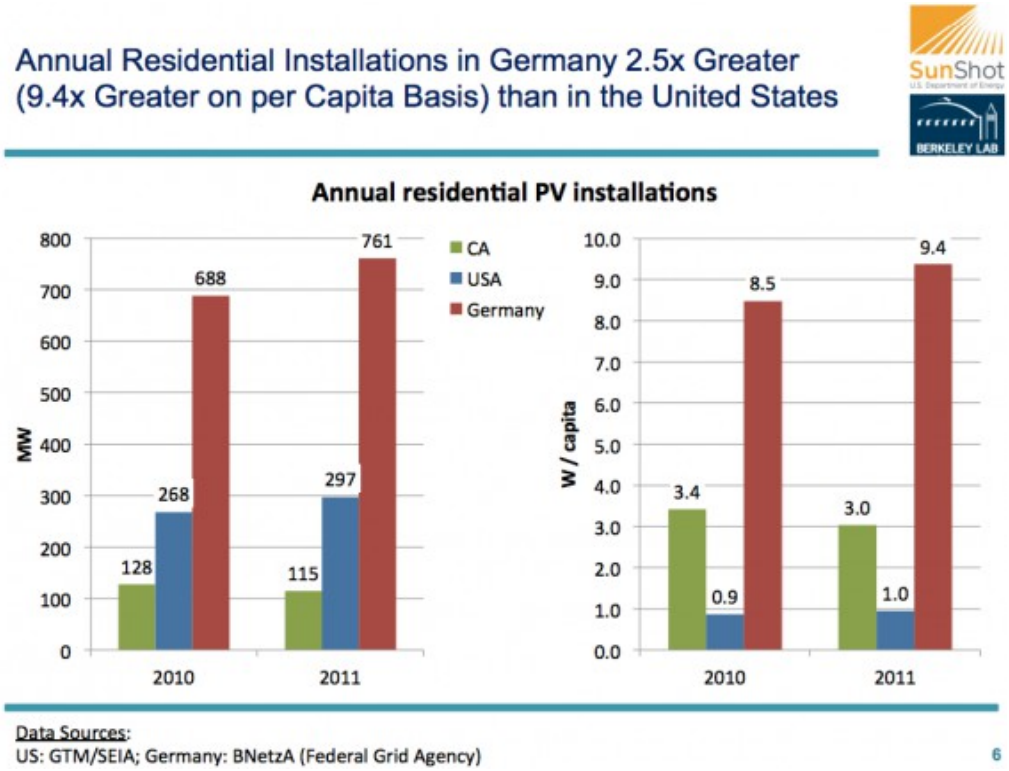
International Comparison of Solar Industry Growth

There was a time when the United States set the standard for industrial performance, but today the US is well advised to look very hard at international performance.

It can be argued that the German economy is presently the most successful in the world, and it is therefore reasonable to attempt to learn lessons from the Germans. A study by the Lawrence Berkeley National Laboratory (LBNL) that has been recently updated looks at various performance aspects of the sector in the United States and Germany

Doubts about the viability of solar in the modern global economy are set to rest to a great extent by the success of the solar industry in German which is bigger than the United States by a substantial absolute amount and even more when compared on a per capita basis.

The following graphic of annual residential installations for 2010 and 2011 from the LBNL study shows the size of the German solar market compared to the United States.



Source: From a study by Joachim Seel, Galen Barbose, and Ryan Wiser of LBNL , February 2013

Energy Efficiency Retrofits

A study prepared by Rockefeller Foundation and DB Climate Change Advisors in March 2012 (the Rockefeller/DBCCA study) estimates the size of the energy retrofit industry and the retrofit investment opportunity to be some $279 billion with an energy saving potential of $1 trillion over 10 years.

Another study prepared by the Energy Efficient Buildings Hub in Philadelphia (formerly the Greater Philadelphia Innovation Cluster for Energy Efficient Buildings / A US Department of Energy Innovation Hub) also describes the nature of the market and its potential.

In addition to the money profit impact of the sector activity, the Rockefeller/DBCCA study estimates an annual reduction of some 600 million tons of CO^2, about 10% of the US total from such an investment, and they estimate that direct and indirect job creation would be around 3.3 million job years in the US economy.

Not surprisingly policy makers are supporting development of the energy retrofit industry because of these characteristics … savings, reduced emissions and employment.

Why so little investment in the sector relative to potential?

This is a critical question, and the answer is probably related to the dysfunctional structure of the industry at the present time. This is a matter of history, and it takes time to get changed.

There are several components to the problem:

- The real estate industry is very fragmented. Even where an organizations owns many properties, they are often located in different jurisdictions with different rules. The projects at the implementing level need substantial detail to be successful;
- The incentive programs that exist and are in the legislative pipeline lack simplicity, and are difficult to use. For most small businesses and individuals these rules, regulations are unworkable even though some offer interesting and valuable incentives;
- Financing is not easy to obtain, and the rules tend to discourage owners to proceed;
- A substantial part of the effort in the sector is related to 'study' and related paperwork and less on the simple practical engineering that gets the job done.
- Experience suggests that the return on investment described is theoretical rather than practical, and owners are unconvinced by academic arguments.

Prices, Costs and Profit

Prices

Affordability

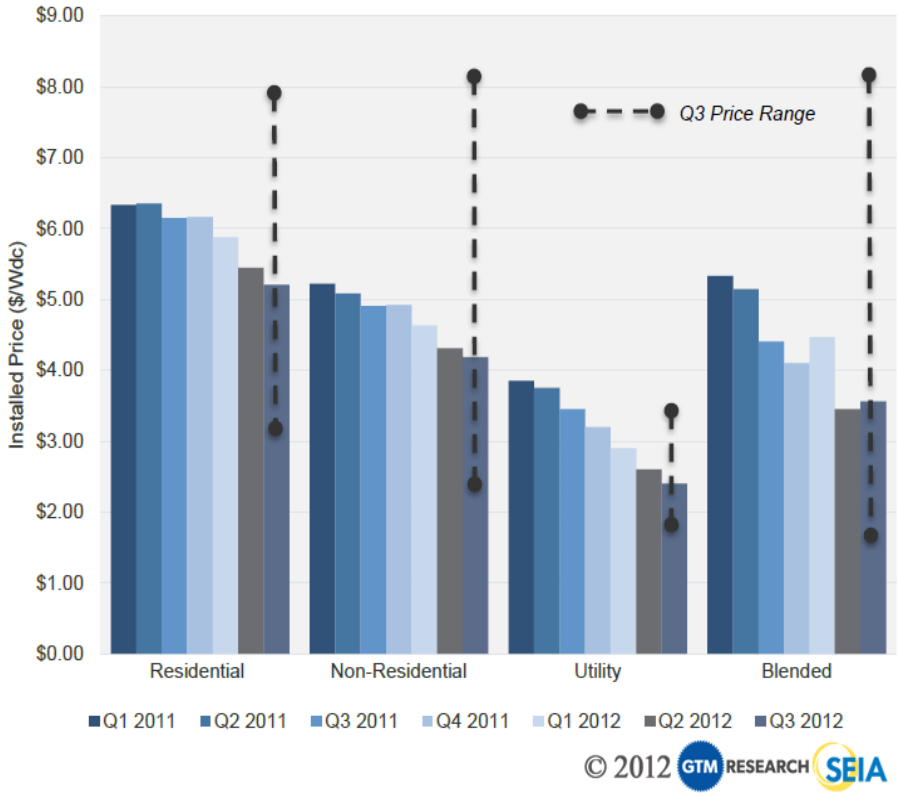
The revenues for the business of solar energy system installation and energy efficiency retrofits come mainly from the payment for the supply of material and labor to complete a project, rather the same as an automobile manufacture gets revenue from the sale of a car to a customer.

In the same way that the automobile industry has increased its revenues by creating a financing dimension to the business, the solar energy installation and energy efficiency retrofit business should do the same. In the automobile industry, cars are financed by industry owned financial units and cars are leased.

SEER establishes an organizational framework that comprises both the technical operations and the financing and lease activities in a complete and integrated structure.

Prices

Prices are a determinant of revenues and profits for the supplier organization and the amount of benefit for the customer. The installed prices for solar systems have been going down. The following graphic shows the recent downward trend in prices



Source: SEIA/GTM Research U.S. Solar Market Insight

Note that the price range is enormous, reflecting an important characteristic of the market, the variety of different individual situations and the cost and price of the solution. In turn price and the installed cost determines the return on investment for the investors in the industry and the value to the user.

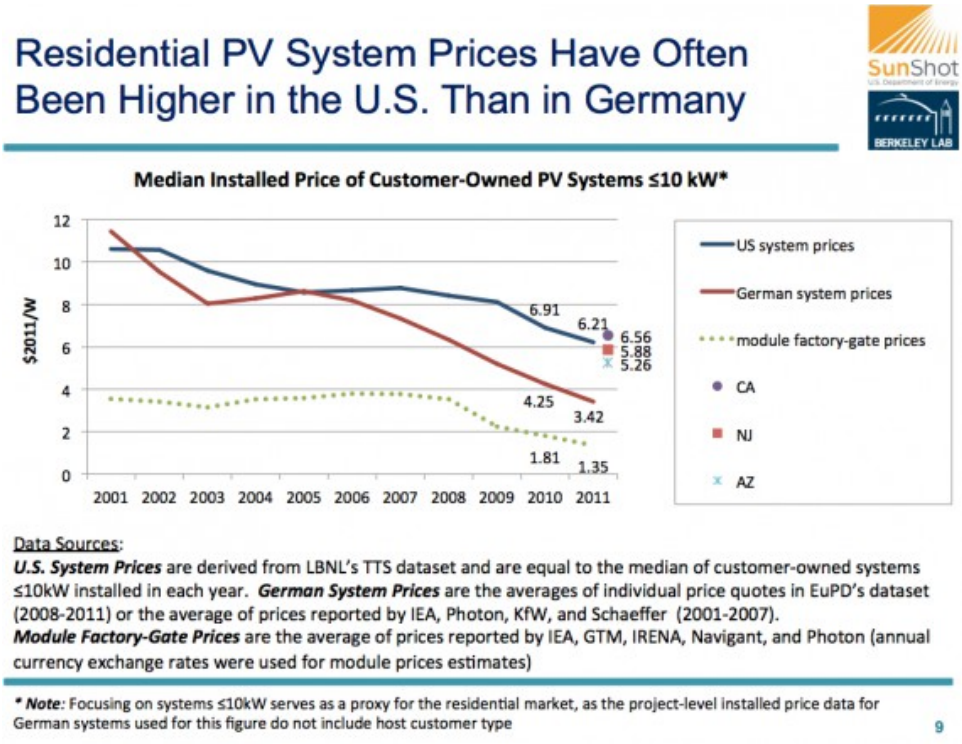
As market prices have dropped some parts of the industry have become unprofitable. As prices of components have dropped, the costs of the installed systems have decreased and profits have been enhanced. There are many moving parts.

International Comparison of Solar System Prices

The LBNL study looked into reasons why a residential German solar system can be installed for $3.00/watt while a residential U.S. solar system costs the homeowner $6.19/watt. Why is German solar about half the price of U.S. solar?

The history of prices for systems in the US relative to prices in Germany shows that while the prices were more or less the same in 2005, the prices came down substantially in Germany by 2011 but rather modestly in the US.

According to this study, in the United States the margin between factory gate and installed system remained constant for this period, while the margin in Germany became significantly smaller as shown in this graphic:



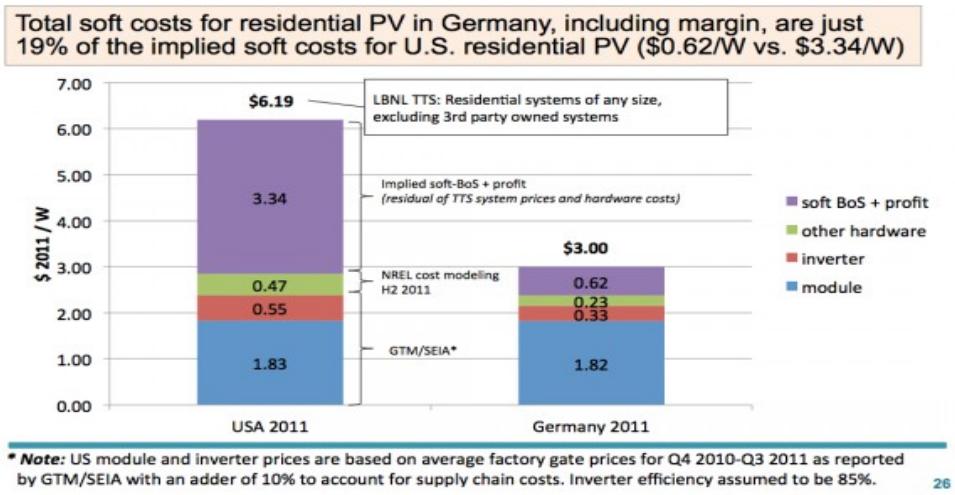
Costs

Operationally the project management and oversight team are able to carry out projects at less cost than is the broad average norm for the industry. This is nothing more than a practical attention to detail, good supervision and timely oversight of all activities.

However there are some big elements of cost in the industry that appear to be out of control in the United States relative to other countries, and specifically Germany.

International Comparison of the Makeup of Cost

The following graphic shows the makeup of the price … the different elements of cost in the United States and in Germany. It is interesting to note that the technical costs are not very different. It is the 'soft costs' in the United States that are high, and arguably excessive.

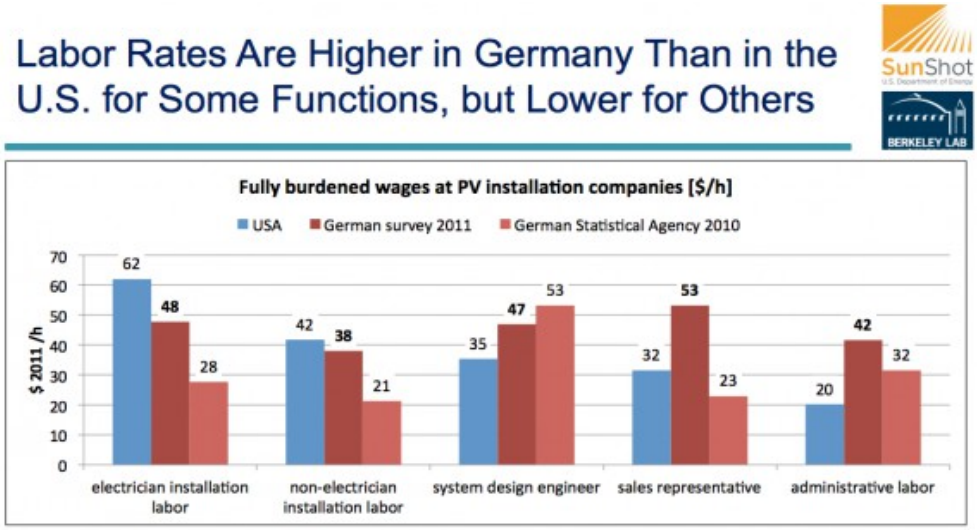


Source: From a study by Joachim Seel, Galen Barbose, and Ryan Wiser of the Lawrence Berkeley National Laboratory, February 2013

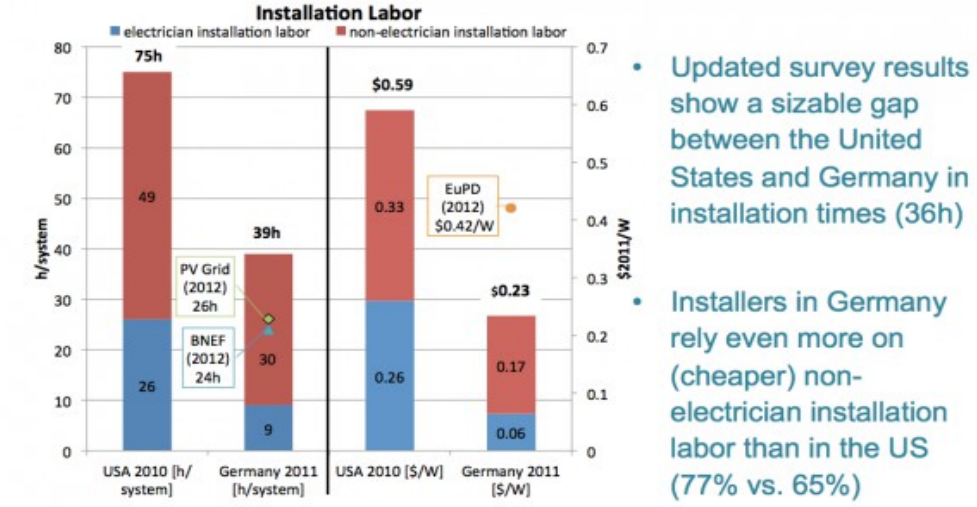
The BWBT initiative addresses this very important matter, as will be described later.

Labor costs

The conventional wisdom is that labor costs are higher in the United States than in German, but the study suggests that this does not apply for all classifications of labor. In any event, the cost differential relates to basic management and operating issues that need to be addressed.



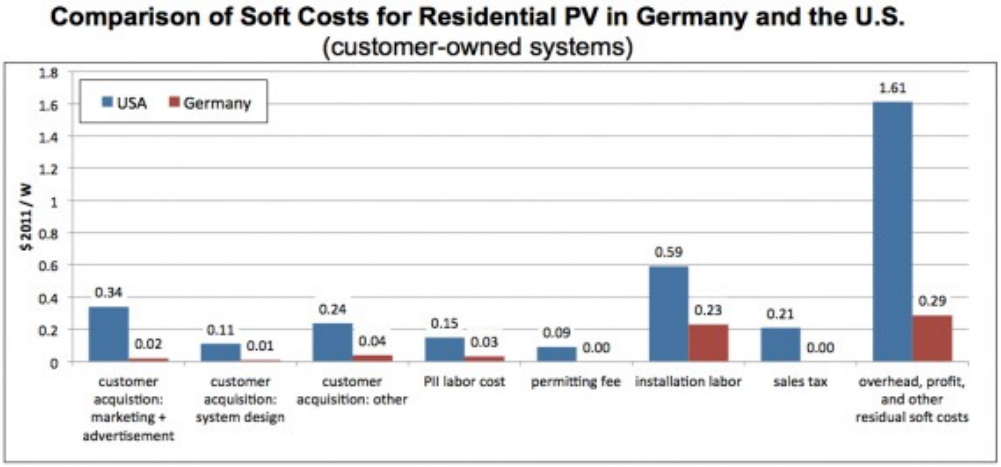
The question of 'electrical trades' versus non-electrical trades is highlighted in the last graphic and the one following.



Soft costs

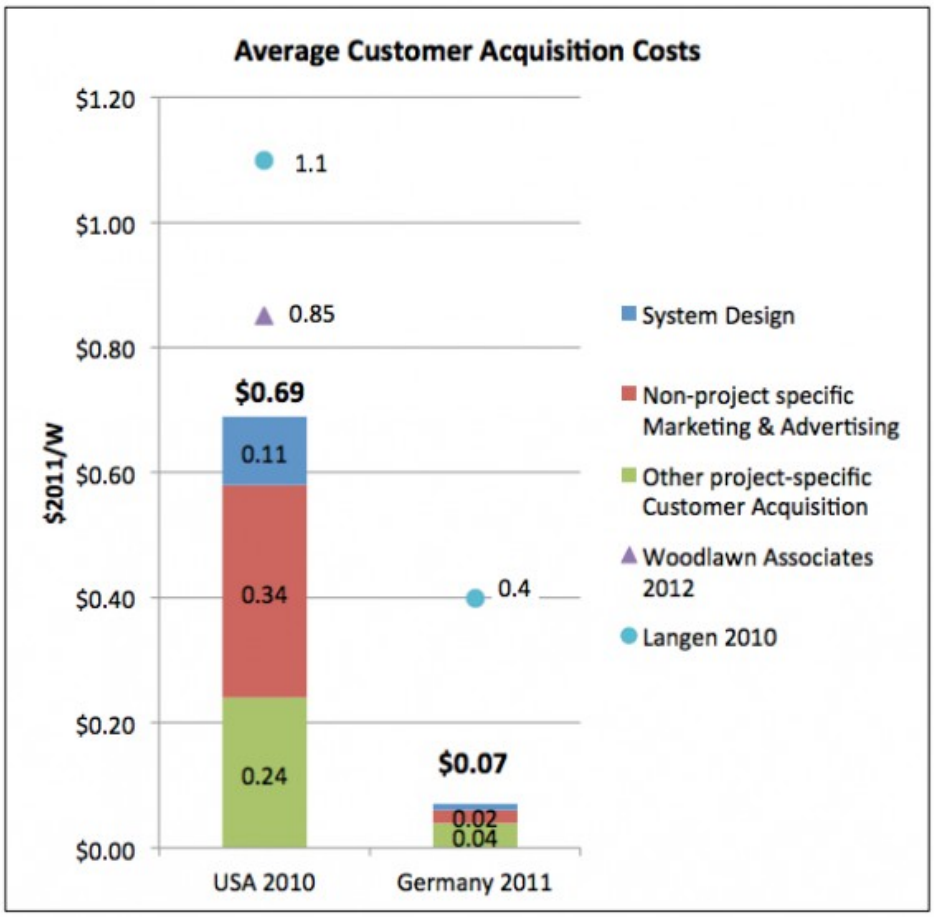
There has been an explosion in the soft cost component of US business since the early 1980s. While there has been an impressive increase in 'productivity' at the operations level, this has been absorbed by the cost of profit and some elements of overhead. In the case of the US solar industry, the high level of 'soft costs' are associated with a high cost structure that does not facilitate business efficiency.

The following graphic showing the various components of 'soft costs'. This graphic includes the installation labor component which has already been addressed above.



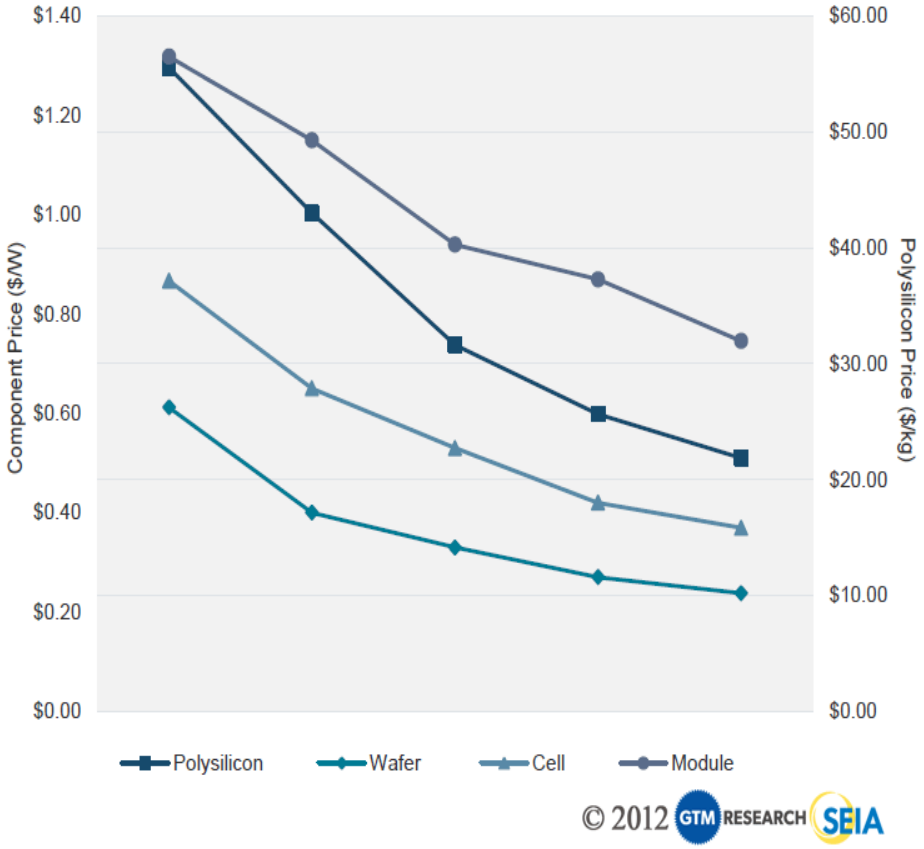
The biggest cost element in 'soft costs' is the overhead, profit and other residual soft costs. These are huge in the United States compared to Germany, being $1.61 per KW installed for US and $0.29 for Germany. In a well managed organization that is well structures, the soft costs referred to can be mitigated substantially.

The following graphic shows the elements of the marketing function.



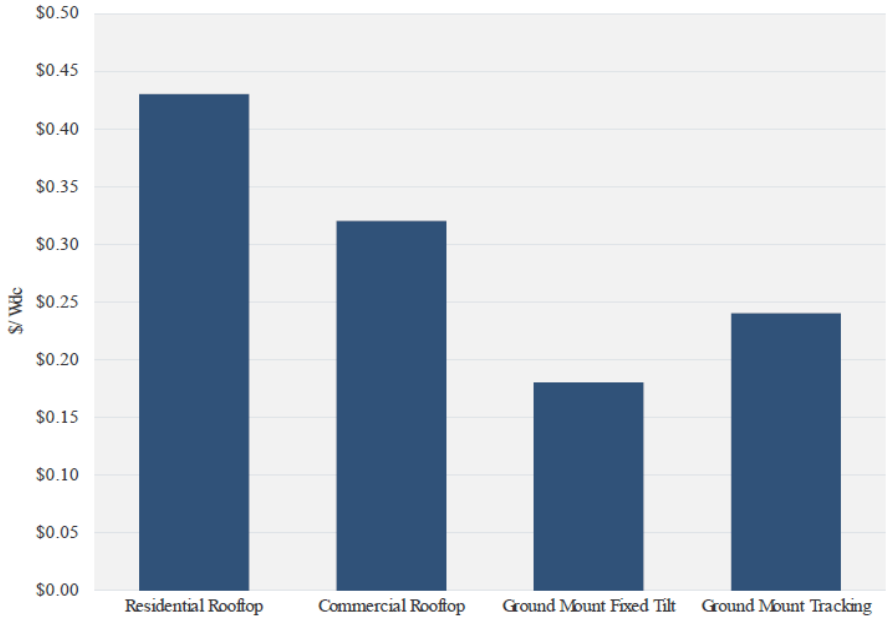
The very high costs in the United States for the 'marketing' element relative to Germany, being $0.69 in the US versus only $0.07 for Germany, can be mitigated considerably by appropriate organization and marketing practices.

Due to technology some parts of the solar industry have been subject to significant cost reduction. This is apparent in the production of polysilicon as shown in the graphic below. This translates into lower wafer costs, lower cell costs but less so module costs.



Source: SEIA/GTM Research U.S. Solar Market Insight

The above graphic does not show this, but the cost reduction is even less evident in the cost of the installed system, especially small systems in the residential market, where the work is labor intensive and uses mature materials.



	Q3 2012
Residential Rooftop	$0.43
Commercial Rooftop	$0.32
Ground Mount Fixed Tilt	$0.18
Ground Mount Tracking	$0.24

Source: SEIA/GTM Research U.S. Solar Market Insight

Incentives, Profit and Benefit

Government incentives

The role of government incentives is important, but not as important as the basic facts of technology and global economics. They help, but only at the margin.

It is likely that there will be quite generous government incentives in the United States in the immediate future both from the Federal Government and from State Governments.

The SEER project will take advantage of these incentives to the maximum extent possible, with the caveat that many incentive programs are administratively onerous and costly, and the benefits net of costs often not worth very much.

One of the tasks of the Holding Entity with Financing Unit is to explore all the incentive possibilities and design working procedures that will enable SEER to make use of these incentives efficiently.

Profit and Benefits

The profit potential is substantial, but requires management. Social benefits are also important, in fact they may be more important than the money profit potential.

The trend of some costs are down because of technology.

Other costs are determined by labor and materials which have stable or increasing costs.

Other costs, like the soft costs are amenable to reduction by good organization and management.

The trends of prices are down because of a competitive environment. Prices, however, must stabilize at a level where the well organized efficient operators in the industry are profitable.

Prices that are low are good for the owner or user of an installed solar system and deliver benefit, and help grow the industry. On the other hand low prices reduce profit for the individual installation project, though may not for the organization as a whole. Getting this right is the key to success for both the organization and for society.

As the cost and price of fossil fuel based energy goes up, the benefit of having a solar system also goes up. Solar based power has more attractive benefits at current prices for fossil fuel based energy than it did five years ago, and this money saving benefit is likely to increase substantially in the future.

There is also a social valuadd for the environment as clean solar based power displaces carbon emitting fossil fuel based power, and energy efficiency is built into new construction and old building retrofits.

Another social valuadd is the job component of the work. Every job helps to support a family and a community and enables both individuals and society to satisfy needs.

In the case of the United States, some high costs that presently exist in the industry are a result of a disorganization that can be managed so that they do not constrain the industry.

In addition to the money profit benefit of the project, there are important social impacts. The replacement of fossil fuel generated energy with renewable carbon free solar is a big benefit, that may well be monetized in the future.

An increase use of distributed power generation will make the existing grid more resilient to high load problems.

It can be concluded that the fundamental economics of solar power installations and energy efficiency retrofits are sound. The money profit potential is positive because with the present price and cost structures, the end user will benefit from the work. At the same time, all the components of the industry have potential for profit as well.

Proposed Structure for the Organization

The following are the core entities of this proposed organization:

1. A 'holding' entity with financing component
2. A project management and oversight entity
3. A marketing entity
4. A team of contractors
5. A team of suppliers
6. A project portfolio

A 'holding' entity with financing unit

The 'holding' entity obtains financing on the best possible terms. The legal structure and its specific structure are to be determined based on the respective interests of investors and other stakeholders.

The funds available in this entity are on-lent to the projects to finance project implementation and the associated systems.

The funds are reimbursed from the cash flow from the implemented projects:

- For solar system projects the norm for cash recovery is 5 years. The life of a typical solar installation is 25 years.
- For energy efficiency retrofit projects the cash recovery is 8 years. The life of a typical retrofit project is 20 years.

These results may change substantially depending on the assumptions being made in the projections for inflation and other factors.

In some cases funds are used to provide 'construction financing' to fund the acquisition of equipment and pay contractors prior to payment by the owner.

A project management and oversight entity

The project management and oversight entity has responsibility for project implementation, costs and performance. This entity is the link between the what the customer wants and the system suppliers and the installation contractors do to deliver, install and commission the system.

This entity has an important role in collaborating with contractors so that they are able to operate efficiently and do their work well.

A marketing entity

The high cost of client acquisition in the United States relative to Germany was highlighted in the study. This has been caused by the fact that every project is unique and needs individual attention. This high cost will be mitigated by a team approach involving lead generation, technical support and local contractor involvement.

A team of contractors

The installation of systems needs to be done to high standard and at low cost. This is best done by small contractors with low overhead which is facilitated by the way they are able to collaborate with the project management and oversight entity.

The contractors are the local 'face' of the organization … and in this support the efforts of the marketing entity.

A team of suppliers

Equipment is manufactured in volume by a small number of large companies. In most cases they benefit from high volume and economies of scale.

A typical project in the project portfolio

A building owner wants to install a solar system or improve the energy efficiency of a building.

There are different ways to proceed:

1. The owner purchases and installs the items needed to improve energy efficiency using an organization like SEER to manage the project. In this approach the owner pays for the equipment and installation and has the benefits of energy savings accrue directly to the owner. For these projects, SEER uses 'Construction Financing' to fund the supply of equipment and installation and earns a return from the sale of the project.
2. The owner agrees to have a solar energy system installation installed the owner's building with SEER retaining ownership of the equipment. The benefits of energy efficiency improvement accrue to the owner and SEER on an agreed basis.

Management Team

The 'holding' entity with financing unit

Peter Burgess, currently CEO of Tr-Ac-Net Inc. will oversee the operation of the 'holding' entity and financing unit. Burgess studied engineering and economics at Cambridge University, and subsequently trained as a Chartered Accountant with Coopers and Lybrand in London before working in the United States in a variety of positions and industries (field accountant, controller, budget manager, VP finance and CFO, project manager, not to mention VP manufacturing). Subsequently Burgess did international business consulting as well as planning and oversight work for the World Bank, the UN system and other agencies. His concern for excellence in management as well as accounting and financial controls goes back more than 30 years. He is an advocate for the modernization of society by the more efficient use of energy, as well as more efficient business processes and organization, and effective use of modern technology. He is the founder and CEO of the TrueValueMetrics value accountancy initiative.

The project management and oversight entity

Toni Lynch, currently BWBT's Chief Operating Officer will be in charge of the project management and oversight entity. He has been a champion of energy-efficiency building construction and the practical use of renewable energy sources in Pennsylvania, New Jersey and New York State since the mid-1970's as a building contractor and project manager. He has promoted educational for tradespeople in these fields and promoted the incorporation of renewable energy and energy efficiency in public buildings for a very long time. He has experience with insulated concrete construction, geothermal heating and cooling, insulation systems, energy efficiency equipment and solar energy systems. He is an authority on these matters in the region. He is a consultant to Cinium Financial Services on Solar matters.

Peter Ypsilantis, currently with IGT will assist Toni Lynch in project management and oversight. He has a degree in engineering and a long time part of the green movement. He has conducted seminars in green construction that enable architects and related professionals to obtain continuing education credits. He has built energy efficient affordable housing projects which are case studies in state-of-the art design of structures, mechanical systems and renewable energy sources, and is an experienced designer of Photo Voltaic systems.

Brad Kennedy, a graduate of Lafayette College, also currently with IGT has had a long career associated with energy efficient systems and construction. In the 1980s he was a juror for the New Jersey Department of Energy's annual Residential Design Competition and built a subdivision of solar homes. In the 1990s he was a pioneer in geo-thermal systems and spokesperson for JCP&L. He has recently been administering solar improvement works for the New Jersey Housing and Morgage Finance Agency (JHMFA)

Mark Landgrebe with Solar Home NJ has a commitment to the alternative energy industry. He has also engaged in not for profit social work including a program to feed the homeless and hungry through an organization known as The HomelessBus.org which he founded.

The marketing entity

A team for the marketing entity will be identified later.

All of the core team listed above are well known in the energy systems industry, their local communities and the broader environment and sustainability movement. There is no lack of people who can be recruited, but the key is to have a product and service to sell, and an ability for the customer to finance the project.

The team of contractors

A preliminary selection of contractors to work on projects has already been made. These are contractors and sub-contractors that have already worked with the core management team described above.

There are hundreds of independent contractors who are qualified to do the work required. As fully independent contractors their work may be inferior as they cut corners, but under the project management and oversight regime they will do high quality work at an efficient cost.

Some contractors have a specialization in the energy-efficiency sector, others are specialized in trades which have application to the projects. The right mix will deliver the right project at the right cost.

The team of suppliers

For certain items there are relatively few large vendors. The proposed organization is a structure that gives more purchase leverage with large vendors than many independent operators. As time goes by, it is to be expected that there will be more concentration among these major vendors.

For other items it is possible to buy locally from a large number of small vendors.

The organization will mix the purchase operation so that costs are minimized while quality is enhanced.

Financial Analysis and Projections

A base case scenario

The financial statement set that follows is a five year summary of detail calculations of how the SEER program can perform.

This is a base case that shows the essentially sound financial situation that can exist with the proposed strategy. The following are the highlights:

- A financing of $25 million will fund a project that installs 1.2 MW of solar energy systems a year.
- The financing has been time-phased with three tranches as follows: (1) 5 million in the first year, (2) a second tranche of $10 million in the second year, and (3) a third tranche of $10 million in the third year.
- The financing allows for 40% of the projects are outright sale and 60% of the projects are operated on a lease basis.
- Outright sale is the required option where financing is the constraint a constraint. In this option, the installer earns benefit from the construction margin but not from the energy investment,
- The lease option is a more attractive for the SEER program where there is sufficient financing to handle the longer time-line investment
- Though the project will be unprofitable for the first two years, it is projected to increase in profitability over subsequent years.
- The cash flow from operations will enable the debt instruments to be retired as they become due
- The cash flow from operations will enable the debt instruments to be retired as they become due

The financial model has been prepared without specifically considering energy efficiency retrofit projects. The financial model for this segment of the business plan would be similar to the outright sale of solar energy system installations.

Balance Sheet

BALANCE SHEET						
	Opening	Year 1	Year 2	Year 3	Year 4	Year 5
All figures in US$ except where noted						
ASSETS						
CURRENT ASSETS						
Cash	$0	$1,240,000	$7,940,000	$15,490,000	$14,220,000	$13,850,000
Inventory	0	0	0	0	0	0
Accounts Receivable	0	0	0	0	0	0
Construction in progress	0	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000
Prepayments and other	0	50,000	50,000	50,000	50,000	50,000
Total Current Assets	0	2,340,000	9,040,000	16,590,000	15,320,000	14,950,000
Fixed assets						
At cost	0	1,860,000	4,990,000	8,110,000	11,240,000	14,360,000
Provision for depreciation	0	60,000	290,000	710,000	1,320,000	2,100,000
Net fixed assets	0	1,800,000	4,690,000	7,400,000	9,920,000	12,260,000
Short term investments	0	0	0	0	0	0
TOTAL ASSETS	**$0**	**$4,140,000**	**$13,730,000**	**$23,990,000**	**$25,240,000**	**$27,210,000**
LIABILITIES AND STOCKHOLDERS' EQUITY						
CURRENT LIABILITIES						
Accounts Payable & Acc. Liab	$0	$0	$0	$0	$0	$0
Corporate tax payable	0	0	0	80,000	400,000	710,000
Total Current Liabilities	0	0	0	80,000	400,000	710,000
LONG TERM LIABILITIES						
Financing loan instruments	0	5,000,000	15,000,000	25,000,000	25,000,000	25,000,000
Total Long Term Liabilities	0	5,000,000	15,000,000	25,000,000	25,000,000	25,000,000
Total Liabilities	0	5,000,000	15,000,000	25,080,000	25,400,000	25,710,000
Stockholders' Equity						
Subscribed Capital	0	0	0	0	0	0
Loan Capital	0	0	0	0	0	0
Retained Earnings BOY	0	0	-860,000	-1,270,000	-1,090,000	-160,000
Net income for period	0	-860,000	-410,000	180,000	930,000	1,660,000
Stockholders' Equity	0	-860,000	-1,270,000	-1,090,000	-160,000	1,500,000
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	**$0**	**$4,140,000**	**$13,730,000**	**$23,990,000**	**$25,240,000**	**$27,210,000**

Profit and Loss Account

PROFIT AND LOSS ACCOUNT					
	Year 1	Year 2	Year 3	Year 4	Year 5
All figures in US$ except where noted					
Revenues					
Outright sale of solar installations	1,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Income from owned solar installations	220,000	1,400,000	2,700,000	4,000,000	5,290,000
Sales of energy efficiency retrofits	0	0	0	0	0
Total Revenue	**1,620,000**	**3,800,000**	**5,100,000**	**6,400,000**	**7,690,000**
Cost of sales					
Costs of solar installations sold	1,180,000	2,020,000	2,020,000	2,020,000	2,020,000
Expenses related to owned solar installati	0	0	0	0	0
Costs of energy efficiency retrofits	0	0	0	0	0
Total Cost of Sales	**1,180,000**	**2,020,000**	**2,020,000**	**2,020,000**	**2,020,000**
Gross Margin					
Sales of solar installations	220,000	380,000	380,000	380,000	380,000
Margin from owned solar installations	220,000	1,400,000	2,700,000	4,000,000	5,290,000
Sales of energy efficiency retrofits	0	0	0	0	0
Total Gross Margin	**440,000**	**1,790,000**	**3,080,000**	**4,380,000**	**5,680,000**
General expenses					
Holding Entity with Financing Unit	230,000	240,000	250,000	260,000	270,000
Project Management and Oversight Entity	680,000	900,000	930,000	950,000	990,000
Marketing Entity	130,000	230,000	240,000	240,000	260,000
Total general expenses	**1,040,000**	**1,360,000**	**1,410,000**	**1,450,000**	**1,520,000**
Financing costs	200,000	600,000	1,000,000	1,000,000	1,000,000
EBITDA	-800,000	-180,000	680,000	1,930,000	3,150,000
Depreciation and amortization	60,000	230,000	420,000	600,000	790,000
EBIT	-860,000	-410,000	260,000	1,320,000	2,370,000
Tax on corporate profit	0	0	80,000	400,000	710,000
Profit after tax	**-860,000**	**-410,000**	**180,000**	**930,000**	**1,660,000**

Cash Flow

CASH FLOW					
	Year 1	Year 2	Year 3	Year 4	Year 5
Source of funds					
Profit after tax	-$860,000	-$410,000	$180,000	$930,000	$1,660,000
Depreciation	60,000	230,000	420,000	600,000	790,000
Cash from operations	-800,000	-180,000	600,000	1,530,000	2,440,000
Cash from loan instruments	5,000,000	10,000,000	10,000,000	0	0
Cash from financing	5,000,000	10,000,000	10,000,000	0	0
Total Sources of cash	**$4,200,000**	**$9,820,000**	**$10,600,000**	**$1,530,000**	**$2,440,000**
Changes in working capital					
Inventory	$0	$0	$0	$0	$0
Accounts receivable	0	0	0	0	0
Construction in progress	1,050,000	0	0	0	0
Prepayments and other	50,000	0	0	0	0
Accounts payable	0	0	0	0	0
Taxes payable	0	0	-80,000	-320,000	0
Total changes in working capital	1,100,000	0	-80,000	-320,000	0
Acquisition of fixed and other assets					
Fixed assets	1,860,000	3,120,000	3,120,000	3,120,000	3,120,000
Total fixed asset acquisition	1,860,000	3,120,000	3,120,000	3,120,000	3,120,000
Repayment of financing					
Dividend payment	0	0	0	0	0
Total financing	0	0	0	0	0
Total use of funds	**$2,960,000**	**$3,120,000**	**$3,050,000**	**$2,800,000**	**$3,120,000**
Net change in cash position	**$1,240,000**	**$6,700,000**	**$7,550,000**	**-$1,280,000**	**-$370,000**
Cash position at end of year	**$1,240,000**	**$7,940,000**	**$15,490,000**	**$14,220,000**	**$13,850,000**

Reference Material

Web Resources

A copy of the Rockefeller/DBCCA report is available at:
http://www.truevaluemetrics.org/DBpdfs/Energy/EnergyRetrofitIndustry.pdf
or
http://www.dbcca.com/dbcca/EN/_media/Building_Retrofit_Paper.pdf

A copy of the Philadelphia Hub 2011 report is available at:
http://www.truevaluemetrics.org/DBpdfs/Energy/EnergyMarket_PhiladelphiaRetrofits2011.pdf

Glossary of Terms / ACRONYMS

AC	Alternating Current
AEM	Active Energy Management
DC	Direct Current
ECM	Energy Conservation Measures
ESA	Energy Service Agreements
ESCO	Energy Service Company
LED	Light Emitting Diode
PACE	Property Assessed Clean Energy
PV	Photovoltaic

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