PhillipCapital
Your Partner In Finance

Company Initiation

SUNPOWER – Reputation, Reputation, Reputation

Phillip Securities Research Pte Ltd

11 August 2010

Exchange	Singapore Stock Exchange
Sector	Chemical Engineering
Reuters	5GD.SI
Bloomberg	SPWG: SP

BUY (Initiation)

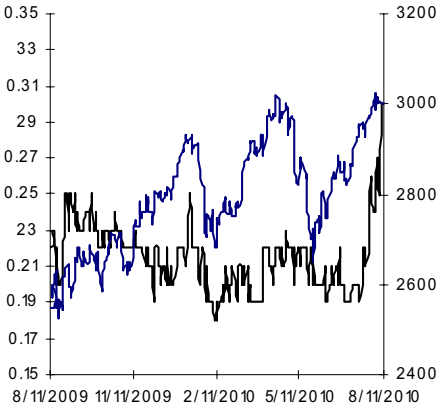
12h30 Closing Price
S$0.285
Target Price
S$0.46 (+61%)

ice

t Price	0.285
k High	0.315
k Low	0.180
ares Outstanding (mil)	329.000
arket Cap (S$ mil)	93.765
Daily Turnover (mil)	NM
loat (%)	27.4%
(X)	7.26
(X)	1.58

ice performance %

	1M	3M	6M
solute	42.5%	29.5%	50.0%
elative	1.4%	3.5%	7.4%



Major Shareholders		%
1	Guo Hongxin	23.19
2	Li Laisuo	21.00
3	Ma Ming	17.36

Analyst: Chan Wai Chee
☎ 65 65311231
FAX 65 65364435
✉ yebo@phillip.com.sg
Web: www.poems.com.sg

MICA (P) 153/01/2010
Ref No: SG2010_0270

This report will first discuss the reputation of the company's products, the reputation of the company's customers and the reputation of the company's management, before going on to analyze its financials. The discussion on reputation covers issues like the sustainability of demand for its existing products and the company's ability to deliver these, with bits of where its customers are heading thrown in.

As far as the near term macro-economics is concerned, we believe that China has shown good progress in switching allegiance from the exports to domestic consumption; and, China's fiscal stimulus can sustain its demand economy over the coming difficult years in Europe and the US. *SUNPOWER* did well in the slower years of 2008 and 2009 although this may be due to it coming off the earlier part of its growth path. But its peers suffered in 2009.

Sector performance is not relevant as *SUNPOWER* has delivered customized projects across the petrochemical, tobacco, transportation, chemical, coal, and metallurgical industries – thus reflecting its diversified business model. Besides China, It has also performed, on the international scene. More recently, it has made its entrance into the solar energy industry.

A cursory review of its 64 patents (listed on pages 14, 15) shows that these revolve around process heat transfer, which is the science dealing with rates of exchange of heat between hot and cold bodies called the source and receiver. Products involve chemicals and all patents can be pointed to revenue. This is chemical engineering – design, construction and operating machines and plants to solve problems or create products by applying chemistry. In other words – delivering ideas in a product for a fee. This is *SUNPOWER*'s forté.

For branding, *SUNPOWER* is a specialist in energy saving and environmental protection.

SUNPOWER's peers, which are spread over various exchanges viz. China, India, and Hong Kong, trade at a premium to their respective overall market by as much as 68%; and, *KNM Group* trades near the overall market P/E of the KLSE.

Given the many scandals among S-chips, it would be unreasonable to expect a similar 68% premium to the Singapore market valuation. But *SUNPOWER*, as this report goes on to prove, has not just built a reputation like its peers by the products that they have been delivering and by the reputation of the customers they keep but also by the reputation of its management team.

I therefore plead with the market to give *SUNPOWER* a valuation that it rightly deserves. This would be, first, an equal valuation to the overall market. Then, a premium to the market, which I believe *SUNPOWER* also deserves. Perhaps, the latter can come when *SUNPOWER* delivers its maiden dividend, which management had indicated it would seriously consider. I have put this into my forecast.

Let us see SG46 cents first. This is 61% higher than 12h30's closing price.

	PATMI RMBm	EPS RMB¢	DPS* RMB¢	BV RMB¢	ROE (%)	P/E (X)	Yield (%)	P/BV (x)
/09 A	64.2	19.5	0.00	89.8	21.7%	7.3	N/A	1.6
12/10 F	67.7	20.6	6.17	104.2	19.8%	6.9	4.4%	1.4
12/11 F	76.6	23.3	6.98	120.5	19.3%	6.1	4.9%	1.2
12/12 F	94.1	28.6	8.58	140.5	20.3%	5.0	6.1%	1.0

** Initiated by Phillip Securities Research, not Sunpower's guidance*

We visited two of *SUNPOWER*'s premises in Nanjing in March this year - one on a Saturday and the other on a Sunday. The two premises visited were:

- No. 2111 Chengxin Road, Jiangning Science Park
- No. 108 Jing Er Road, Nanjing Chemical Industry Park

Both have excellent road distribution but the latter is better off with its close proximity to the Yangtse River and the sea. In the context of *SUNPOWER* - *Sinopec* being a major customer – the Nanjing Chemical Industry Park is also near to *BASF-YPC* as well as other important enterprises of *Sinopec*, including *Jinling Petrochemical Corporation, Yizheng Chemical Fiber Company,* and *Nanjing Chemical Corporation Chemical Plant*.

SUNPOWER's larger pressure vessels are also being fabricated here, especially if these require sea delivery. If you had seen one of those National Geographic clips on transporting huge equipment, you would have appreciated the choice of location. Such equipment can measure 200 feet in length and it moves very cumbersomely when transported.

More importantly, though, the workers at both premises were busy on that weekend.

Deethanizer Stripper of PDH Project Export to Thailand (measures 202 feet in length)

Source: *Sunpower*

The bottom-up approach dictates that one should talk about the builder first but let us try the other way and start looking at the objects he has built. This way, one can be more objective. Like, admire the pyramid and then find out the history behind its construction.

After all, Albert Einstein did say: "Truth is what stands the test of experience."

REPUTATION OF PRODUCTS

A visit to their website at: http://en.sunpower.com.cn/profile/define/experiences---applications-0a4c/1 will give you a detailed account of the products the company delivered. Aptly titled "*Experiences and Applications*", it demonstrates the specific area of expertise ("*applications*") that *SUNPOWER* possesses and the chalking up of its own "*experience*" of doing these jobs. The "*experience*" of their customers (in terms of their projects), which included many high profile ones, bears good testimony that potential customers can rely upon.

The categorized "*experience*" is tabulated in a roughly chronological manner so that you may appreciate the journey that *SUNPOWER* has been travelling.

Refinery & Ethylene

Year	Customer	Project
2000	Sinopec Yanshan	900kT/y ethylene plant
2001	YPC	650kT/y ethylene renovation
2001	Sinopec Shanghai	700kT/y ethylene renovation
2000	BASF-YPC	600kT/y ethylene renovation
2004	Shanghai SECCO	
2004	Sinopec Qilu	900kT/y ethylene renovation
2004	Sinopec Daqing	
2005	Sinopec Lanzhou	750kT/y ethylene plant
2006	Sinopec Maoming	850kT/y ethylene plant
2005	Sinopec Guangzhou	10mT refinery & ethylene projects
2005	Shenhua CTO	CTO plant
2007	CTCI	Thailand Petroleum ethylene
2007	Sinopec Engrg	Qindao 12mT refinery
2007	CNOOC Huizhou	10mT refinery energy saving
2008	Sinopec Zhenhai	1mT/y ethylene plant
2008	Sinopec Tianjin	1mT/y ethylene plant

Source: Sunpower Group

A few months ago, it was reported that a 1.3 million ton capacity ethylene plant built in Qatar costs US$1.3 billion or almost RMB9 billion. The ethylene plants listed above, although smaller, must still cost a lot even if China could produce all things cheaper. The enormity of the project value gives a good indication of its importance to the project owner and by giving it to *SUNPOWER* to do would mean that they have confidence in *SUNPOWER*'s capability.

Sinopec's website mentions "2009 annual planned ethylene production was 6.7 million tons, and realized production was 6.713 million tons. Among them (11 in total), 7 plants have built a capacity of over 0.6m tpa for ethylene production, including *Sinopec Shanghai, Sinopec Beijing Yanshan, Sinopec Qilu, Sinopec Yangzi, BASF-YPC, Shanghai Secco* and *Sinopec Fujian*. The ethylene production capacity in *Secco* and *Sinopec Maoming* exceeded 1.0 million tpa."

Checking the above-mentioned *Sinopec* ethylene plants against *SUNPOWER*'s list, only *Yangzi* and *Fujian* are not in. But it was involved in the biggest plants at *Secco* and *Maoming*.

Ethylene production falls under the chemicals segment in *Sinopec*. RMB25.5 billion was spent in capex in 2009 and the 2010 outlook is for another RMB20 billion, of which RMB5.5 billion had been spent in 1Q2010. *Tianjin* and *Zhenhai* ethylene projects were completed in 2009.

PO/SM Unit Dehydration Reactor for 1mT/y Ethylene Project

Source: ***Sunpower***

The outlook is for some upgrading, acceleration in construction of logistic facilities, and more work at the *Sinopec Zhenhai* ethylene projects.

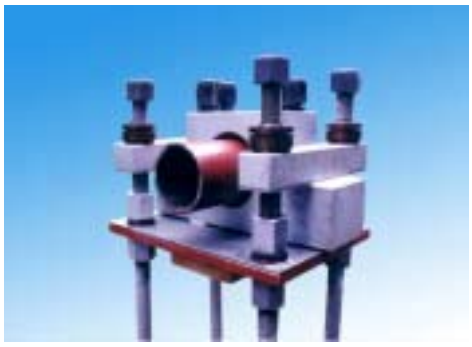
Although this is positive, we must however note that these ethylene projects that *SUNPOWER* did for *Sinopec* did not cross the RMB20 million limit for these to be separately announced. So, what is happening at *Sinopec* is positive for *SUNPOWER* but not hugely positive. There will not be additional emphasis placed on Sinopec in my forecasting of *SUNPOWER*.

The products included in these refinery and ethylene projects are low temperature equipment, high-pressure non-ferrous pressure vessels, high flux tube heat exchangers and towers, dehydration reactors, hot- and cold-insulated pipe supports, heat pipe supports, high-pressure damping pipe supports, heat pipe equipment, heat pipe exchangers, high-pressure chrome-molybdenum steel heat transfer equipment, salty waste water treatment and, flare recovery system.

High efficiency heat insulating spacing clip

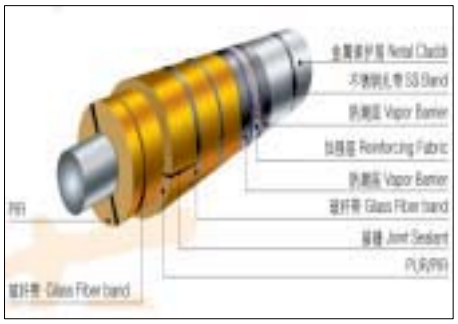
Source: ***Sunpower***

High-pressure damping pipe support



Source: ***Sunpower***

PIR cold pipe supports & Insulation



Source: ***Sunpower***

SUNPOWER* and the *Qinghai-Tibet Railway

At this juncture, let me take you a step back and relate to you the story that launched *SUNPOWER* into prominence: Chairman *Guo Hongxin*'s and *SUNPOWER*'s contribution to the building of the *Qinghai-Tibet Railway*.

This line goes through the Tanggula Pass, which is more than 5,000 m above sea level. At this altitude, permafrost is prevalent over about 550 km of the railway.

Permafrost is defined by the International Permafrost Association as "ground (soil or rock and included ice or organic material) that remains at or below 0°C for at least two consecutive years. The thickness of permafrost varies from less than one meter to more than 1,500 meters." Some could have been formed as far back as 10,000 years ago.

Problems occur when permafrost thaws and due to the difference in volume (ice and water), it would cause earth around it to cave in as the melted ice occupies a smaller volume. Structures built on this earth will also cave in.

This created a stir big enough to warrant TV coverage in 2005 and warranted the chairman's attention.

Permafrost *Its damage to road and rail*

Source: ***Sunpower***

He did not believe that the solutions, presented in that TV coverage, would be ineffective. He then went to bed but his mind was busy ticking away for a solution. He woke up in the middle of the night and …

Eureka!

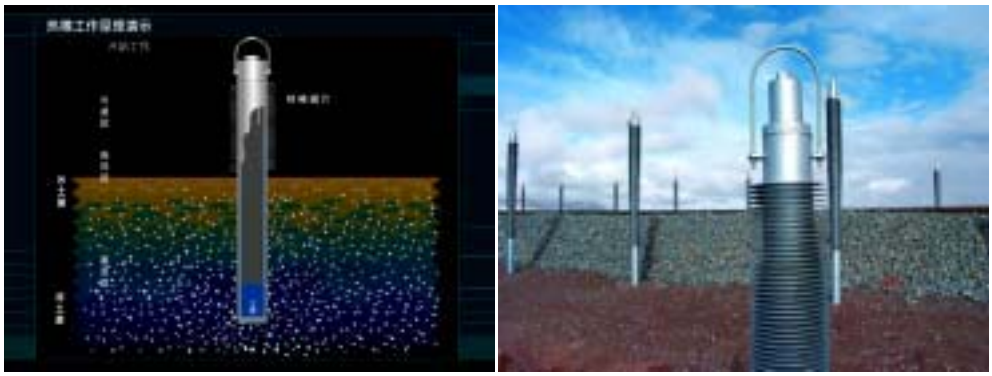
It had to be heat transfer. Simply put - when the air temperature heats up, transfer it away from the 'source' end to the 'receiver' end (which will be where the permafrost is) by way of conduction via the metal in a rod. Where the heat reaches the 'receiver' end, it meets up with a liquid that 'boils' at that temperature. The 'boiled' liquid, now a gas, evaporates upwards and then will flow back to the other end by some capillary action, which changes the pressure there and therefore the condensation point, to allow it revert back to its liquid state. The process repeats. The rod works without assisted electricity – that is, it works under gravity.

Although this can be simply put but there are many considerations.

There are operational parameters like the heat source location and environmental conditions that might contain corrosive gases. Then judgment is exercised as to the selection of the pipe material, which involves wick structure, and working liquid. The working liquid has to be compatible with the container material to avoid any chemical reaction that might alter the condensation of the gas. Freezing point must also be avoided. Obviously, the temperature of the rod can not be less than the freezing point of the working liquid. Somehow, the liquid and the gas must not mix. Heat transfer must also be one-way in this low-temperature pipe so that, in summer, heat would not be conducted to the permafrost.

SUNPOWER does not, for obvious reasons, disclose the gas/liquid used in the rod. Typically, the working liquid can be liquid ammonia, magnesium, mercury, methanol, liquid nitrogen, potassium, lithium, silver, or sodium. The container material can be aluminum, copper, nickel, stainless steel, tantalum, tungsten, or zirconium.

The *SUNPOWER* solution – heat rods to facilitate the heat transfer are anchored at one end in the permafrost and the other end extends above ground – as illustrated below.



Source: ***Sunpower***

The Nanjing government gives recognition to *SUNPOWER*, not just for its contribution to the cooling 'magic rods' roadbed test section on the *Qinghai-Tibet Railway*, but also for other "projects such as the permafrost foundation engineering of *Golmud-Lhasa* 500kv dc transmission tower, the permafrost foundation engineering of the first *Mohe* stop of the Sino-Russia oil pipeline, the permafrost foundation engineering of 200kv dc transmission tower supporting the Sino-Russia oil pipeline, and the permafrost foundation engineering of *Xingjiang-Tibet Highway*."

The National Railway Ministry has approved *SUNPOWER* to draft the 'Qinghai-Tibet Railway Company Pipe Technical Specification and Acceptance Standard.

Despite all this recognition, the total of the *Qinghai-Tibet* railway and highway projects that were announced amounted only to RMB100 million.

One should not jump to conclusions without adequate proof. I am, however, tempted to think that *SUNPOWER*'s contribution to these national projects of pride has helped them garner project wins from industry giants like *Sinopec*. The company management must excuse me for this unjustified inference.

LNG, LPG and Air Separation

Year	Customer	Project
2001	Sinopec Zhongyuan	Low temp LNG plant
2001	Praxair Shanghai Meishan	Air separation unit
2001	Praxair Beijing/ Guangzhou Xianggang	Air separation unit
2001	Sinopec Shanghai	Air separation unit
2001	Nanjing Chemical Industry Corp	Air separation unit
2001	Sinopec Yangzi	Air separation unit
2002	Yangzi BOC Gas	Air separation unit
2002	Sinopec Yangzi	Air separation unit
2002	Sinopec Tianjin	Air separation unit
2002	Sinopec Jinling	Air separation unit
2003	Xinjiang Guanghui	LNG plant
2003	Sinopec Jiujiang	Air separation unit
2003	Zhejiang Juhua	Air separation unit
2004	Shanghai Tongda Energy	Guangdong LNG plant
2004	Wuxi Yongda Natural Gas	Guangdong LNG plant
2005	Shangdong Weifang Zhongyuan Fumao	East China LNG plant
2005	Guangdong Shaoguan Steel Mill	East China LNG plant
2005	UNOCAL (USA)	LPG plant
2006	Zibo Coal Gas Corporation LNG Station	LNG plant
2006	Shanghai Golden Philips	LNG plant
2007	Guangdong Dapeng LNG Station	LNG plant
2007	Shanghai Gas	LNG plant
2007	Huaneng Cleaning Resource	LPG plant
2007	Shanghai Jindi	LPG plant
2008	Sinopec No. 14, Fuzhou	LNG plant
2008	Shanghai Gas Co., Ltd.	LNG plant
2001-8	Xin'ao Fuel Gas Co.,Ltd.	East China LNG plant

Source: Sunpower Group

SUNPOWER builds air separation plants for the production of industrial gases like oxygen, nitrogen and argon, in gas or liquid form; as well as, building LNG and LPG plants

Air separation units are most important for the efficient use of oxygen in the steel industry – which is reason that led to the development of air separation units. Nitrogen and argon are other important air separation products for the steel industry.

In the oil and gas industry, however, nitrogen is the prominent air separation product. Its uses include stimulation of oi producing wells through high-pressure pumping; cleaning LNG tanks and reservoirs; or, as a safety gas in explosion-proof and fire-extinquisher systems. As a liquid, it can be used to freeze soils when doing drilling work in an unstable environment. Oxygen is the other important gas.

Back in 2001, it did two projects with *Praxair*, one of the world's top five companies in the air separation space.

SUNPOWER's contribution (besides the manufacture) is in the process and system design, which helps its customers balance cost of equipment, energy and quality of output.

PTA

Year	Customer		Project
2004	Zhejiang Yisheng	600kT	Upper air flare, PV & HE
2005	Zhejiang Hualian Shanxi	120kT	Ground flare, PV & HE
2006	YPC	120kT	Towers, HEs, Ti pipings , pipe supports
2006	Shanghai Petrochemical	600kT	TE201 Titanium HEs ,pipe supports
2006	Zhuhai BP Chemical	900kT	Ti-CS clad pressure vessels and HE
2006	Petrochina Liaoyang	600kT	Ground flare, pipe supports
2007	Jialong Petrochemical Fiber	600kT	Dehydration columns & heat exchangers
2007	BP Chembel N.V.	120kT	Ti clad towers, heat exchangers
2007	Yisheng Dahua	1.5mT	Ti clad towers, SS heat exchangers
2008	Jiangyin Hanbang	1.5mT	Ti clad towers, SS heat exchangers

Source: Sunpower Group

PTA is purified terephthalic acid. PTA is used to produce polyethylene terephthalate (PET), which is used in the manufacture of textile, bottles, film, food containers, furniture finish etc.

Its customer, BP Zhuhai, uses BP's then world's best (BP's claim) SOX technology. Using less feedstock chemicals - acetic acid and paraxylene, It focuses "on the steam used for heating, drying and other tasks throughout the process. The steam and gases that vent from the process are run through one of two separate turbines, and those turbines will generate all the electricity that the entire plant needs. It is 7 times more efficient at internal recycling of water that a typical PTA plant. SOX also incorporates very sophisticated wastewater treatment technology, and gases leaving the process are treated in high-temperature catalytic reactors that destroy all of the organic materials."

PTA Ti-clad dehydrate tower exported to Belgium

Source: ***Sunpower***

Acetic Acid

Year	Customer	Project
2006	Shanghai Coking	150kT/y acetic acid anhydride plant
2007	Shandong Hengsheng	200kT/y acetic acid plant
2007	Tianjin soda plant	200kT/y acetic acid plant
2007	Guizhou Crystal Organic	Acetic acid plant
2008	Jiangsu Sopo	Acetic acid plant

ɹurce: Sunpower Group

Acetic acid is used in the production of vinyl acetate monomer. Other uses of acetic acid include PTA, acetic anhydride and, acetate esters.

Checking out the website of *Jiangsu Sopo*, the *SUNPOWER* customer listed above, we find that this project is part of *Sopo*'s installation of a plant with a "capacity of producing 200k tons of acetic ether annually, catapulting it to be the biggest acetic ether manufacturer in China."

Zirconium U-tube Heat Exchanger

Source: *Sunpower*

Zr-CS Claded Plate Reactor

Source: *Sunpower*

All the pressure vessels and boilers are ASME-qualified. The ASME Boiler and Pressure Vessel Code (BPVC) was the first comprehensive standard for the design, construction, inspection, and testing of boilers and pressure vessels, when it was published in 1916, almost a hundred years ago Today, according to the ASME website, "112 countries accept the ASME Boiler and Pressure Vessel Code as a means of meeting their government safety regulations. The quality systems of more than 4,500 companies in more than 65 countries are currently accredited."

SUNPOWER has two certificates of the S category (boilers) and U category (pressure vessels) accruing to the Jing Er Road plant but only one certificate of the U category accruing to the Chengxin Road plant. Separate locations need different certificates. There are, presently, in issue in China a total of 124 S category certificates and 400 U category certificates.

Source: *Sunpower*

While the ASME is a must for boilers and vessels into most of US and Canada, *SUNPOWER* is also similarly qualified into Europe with their PED (Pressure Equipment Directive).

Stacked Flare

Year	Customer	Project
2004	YPC	8mT/y refinery renovation flare
2004	Shanghai Secco	260KT/y acrylonitrile flare
2005	BASF-YPC	C1 flare
2008	Sinopec Balin	Baling petrochemical fertilizer plant
2008	Sinopec Liuzhou	Liuzhou petrochemical fertilizer plant
2007	Shenhua	CTO flare & flare gas recovery
2008	CNOOC Huizhou	Refinery flare gas recovery
2007	Shanghai Coking	Acetic acid anhydride flare
2008	Shanghai Coking	Methanol flare.
2008	Sinopec Qilu	Qilu No 2 Fertilizer plant flare
2008	Sinopec Dazhou	Dazhou large fertilizer plant flare
2008	Sinopec Qingdao	12mT/y refinery flare
2008	Sinopec Jinzhou	8mT/y refinery flare
2008	JV	Shanxi 3-D flare
2008	Anhui Lingquan	Methanol flare
2008	Fujian Combined	Fujian refinery ethylene flare
2008	BASF-YPC	YPC BP acetic acid flare
2008	Blue Star Nanjing	TCC butadiene flare
2009	Sinopec Tianjin	Ethylene flare
2009	Sinopec Ammocco	Turkmenstan flare system
2009	Tianjin Dagu	Flare system

Source: Sunpower Group

These orders involve the burning, discharging and recovery of coal, low calorie and hydrocarbon gases.

An interesting point worth noting is since *SUNPOWER* started this business of cleaning up the air for their customers back in 2004 (date of earliest project), the bulk of activities happened in 2008. Could it be that 2008 (13 orders) was a prelude (think, refineries and the like are the economies' leading indicator) to the 2009 (4 orders) global recession (to this, I include China's low GDP number as part)? There were a total of only 2 orders in the boom years of 2005-2007. This is despite, in 2005, scientists formally appraised its waste gas recovery system that was built for Sinopec Yangzi Petrochemical. Saving to its customer is about RMB127m/year.

It is not unreasonable to think that when economic activities slow, there would be sufficient time to overhaul the existing, dirty systems and replace these with the environmentally-friendly *SUNPOWER* flare system.

If this conjecture were true, then *SUNPOWER* could face an avalanche of orders for flare systems in the coming weak period of 4Q2010 to 2013, which is based on a probable double bottom in the 40-year cycle of 2013-2016 (Terry Laundry http://www.ttheoryfoundation.org/t-theory-super-cycles-the-40-year-cycle.html).

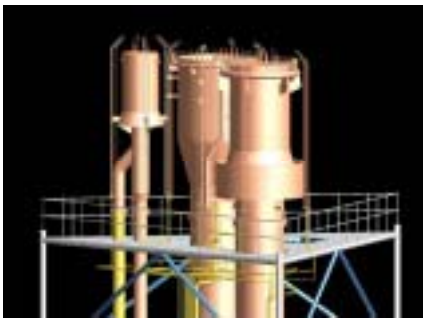
The 21 projects are still supported by the big guns. *Sinopec* had 8, of which half is from its fertilizer plants. There are 3x *BASF* projects and 2x *Shanghai Coking*. There is even one project from *CNOOC*.

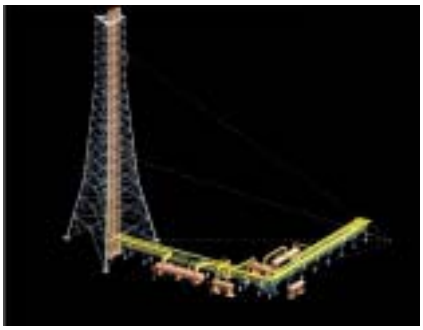
The following patents sustain the flare gas business:

- ZL200420079150 - Auto-controlling water sealing (different water sealing height for different flare gas components) valve system for recovering, exhausting of torch gas under normal conditions; and, combustion and discharge of flare gases during accidents.
- ZL200420079152 - Low-heat value acid gas burning discharge torch head, which ensures heat accumulation and high combustion thereby reducing gas consumption.

Two substantial projects include:

Shenhua Baotao Coal Olefin Flare System (RMB45.8m)





Source: *Sunpower*

Flare system for Shenhua Coal Direct Liquefaction Project (RMB32m)

Source: *Sunpower*

Ground Flare		
Year	**Customer**	**Project**
2005	Zhejiang Shanxi	Methane for waste water treatment
2006	Liaoyang Petrochemical	Methane for waste water treatment
2007	Sasol Yihai	
2007	Jiangsu Anbang Electric	C3 flare gas discharge
2008	Dalian Dahua	Methane for waste water treatment
2004	Nibo Yisheng	Methane for waste water treatment

ɹurce: Sunpower Group

In burning waste gases, energy is released through thermal radiation, light and sound. When there is a need to control the sound, which is caused by either the gas exiting the burner into the environment or combustion, covered ground flares can be used. Covered ground flares make use of acoustic design of a wind-fence and the stack to minimize the noise.

Ground flares also has a large combustion chamber, which contains the flaming process, and therefore the flame is not visible.

Ground Flare for Sasol-Yihai

Ground flare, part of a 500kT/y PTA plant

Source: *Sunpower*

The experience up till 2005 had been rewarding and *SUNPOWER* decided on an IPO in Singapore, which yielded RMB39.3m (net of share issue expenses), to embark on expansion.

The IPO prospectus was dated March 8, 2005.

Gross margins for previous years were: 2001=21%, 2002=18%, 2003=29%, and 2004=35%. In the first annual report (for 2005) after listing, the chairman's message mentioned that as production capabilities and the workforce expanded; gross margins suffered due to delay in some major pipe supports contracts that resulted from delays in *SUNPOWER*'s customers projects; as well as, competitive pricing strategy being pursued in the heat pipes and heat exchangers.

Still, gross margin for 2005 was still a respectable 27%, even though it was down from the previous year's record high of 35%.

Net margin suffered due to increased marketing activities.

The chairman's message also mentioned that to counter contract delays, *SUNPOWER* would intensify market diversification (different countries) to secure more projects so that delay in any particular project would have a less of an impact on the overall performance.

Their subsequent experience, as illustrated by the table below, confirms their success in venturing overseas. There were 18 overseas contracts in the four-year period 2006-9 or 4.5 contracts a year versus 5 overseas contracts in the two-year period of 2004-5 or 2.5 contracts a year.

Outside of China

Year	Customer	Project	Country
2004	JGC Kalugin	Heat pipes & heat exchangers	Russia
2004	China Metallurgical	Heat pipe evaporator	India
2004	China Petroleum	Heat insu pipe supports & hangers	Kazakstan
2005	Petrotime China Inc.	Heat insu pipe supports & hangers	Sudan
2005	Yunnan Zhongliao	Ti clad equipment	Laos
2006	Seghers	Air preheaters	Singapore
2007	De Smet Ballestra	Hydrogenation reactors	Russia
2007	CISDI	Pressure vessels	Iraq
2007	CTCI-Bangchak	Towers & heat exchangers	Thailand
2007	CTCI-Phonel	Columns	Thailand
2007	BP Chembel N.V.	PTA pressure vessels & HE	Belgium
2008	CTCI-HMC Polymers	Towers & heat exchangers	Thailand
2008	Dow Chemical	Heat exchangers	Portugal
2008	Dow Chemical	Heat exchangers	Spain
2008	BP AMI	Titanium fittings	Indonesia
2008	Samsung	Pressure vessels & heat ex.	Thailand
2008	TCC	PIR cold pipe supports & Insulation	Pakistan
2008	Uhde GmbH	Low temp cold supports & hangers	Egypt
2009	Alcoa	Pressure vessels	Australia
2009	CNC Turkmenistan	Flare systems	Turkmenistan
2009	Fluor Daniel	Heat exchangers	Mongolia
2009	BP Chembel	Heat exchangers	USA
2009	Dow Chemical	Pressure vessels	Thailand

urce: Sunpower Group

As *SUNPOWER* chalks up the experience, this also leads to recognition by organizations overseeing quality. From murmurings, the Chinese government has been turning up the volume in their 'up the value chain' tune. Of the RMB4 trillion fiscal stimulus, technology advances and industry restructuring is now 9%, which is RMB360 billion. This is logical as costs would inevitably go up, given the Chinese are expected to have, by 2020, more graduates than the whole workforce of the USA (From "Accounting with Heart – China's Role in International Finance and Business" by *Wang Jun*).

Quality has to go up. Therefore, those higher up the value chain should survive better. *SUNPOWER* is demonstrating its ability to be there as they continue to impress the judges. Awards are many in China. Companies will display these at their entrances. Restaurants and retail shops are doing likewise. One has to be careful if relying on these clues to determine quality.

On a more rarified level is the China's 2007 Top Brand award. This was won by *SUNPOWER* in 2007 and is valid until September 2010.

A total of 856 awards were given out for products spanning 162 categories.

SUNPOWER won in the "high efficiency and energy saving heat exchangers" category. There were only 4 winners.

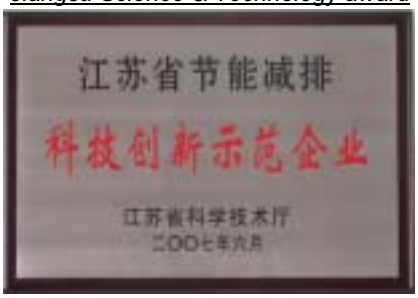
China's Top Brand

Source: *Sunpower*

In 2007, *SUNPOWER*, was awarded the *Jiangsu Province Science & Technology Achievement* by the *Jiangsu Science & Technology Department* for excelling in energy-saving innovation. It was the first year of the award and *SUNPOWER* was one of only ten model enterprises selected. The low number suggests high degree of difficulty in being selected. Up to now, there are only 63 enterprises that are qualified.

This award entitles *SUNPOWER* to do certain projects or to assess cheaper borrowing rates from banks.

Jiangsu Science & Technology award



Source: *Sunpower*

Similarly, at the state level, the *National New Products Program* of the *Ministry of Science & Technology* provides tax reduction or exemption over certain periods. Progress in technological innovation and industry restructuring are targeted at these: micro-electronics and IT; space and aviation; optic-mechanic-electronic integration; life sciences; material sciences; renewable energy and high efficiency energy saving techniques; environmental protection; geosciences and ocean engineering; radiology.

It places emphasis on ownership of Intellectual property rights; exports or substitution of imports; and, products that attain international standards.

SUNPOWER has been awarded:

- *Key National New Product* (Flare Gas Recycling System) – Nov 2006 3 years,
- *Key National New Product* (New Low-temp. Heat Pipe) – Dec 2007, 3 years,
- *Key National New Product* (Spiral Baffle Heat Exchanger) – Nov 2008, 3 years,

SUNPOWER is also on the *National Torch* program since September 2006. As an awardee, it should serve as a role model in its respective industry and to own its intellectual property rights. The state and provincial government gives marketing, financing and management support, if required.

And, the *ISO9001:2000* is in place for the design and manufacture of pressure vessels classes 1, 2 and 3 for the non-ferrous materials and carbon steel categories; for the design and services of environmental protection projects for wastewater and waste gas; for pipe supports spring rack and hanger products as well as, for manufacture of T-shaped grove pipes, threaded pipes and high-frequency welding finned pipes.

Besides, the best recognition is the recognition by its customers, especially the exclusive kind.

Sinopec

The strong marketing influence of *Sinopec* has made a positive impact on its trading "Equipment and Materials" division. By using its subsidiary, *Sinopec International*, as a joint product developer with its strategic partners, also called integrated factories: There are eight each in the upstream and downstream sectors.

SUNPOWER is one of the eight downstream integrated factories. It has to pass certain audits on a yearly basis to remain such.
http://english.sinopec.com/products_service/equip_mat/downstream_integrated_factories/

The *Sinopec* website states that it has established "long term cooperation with *BP, Shell, ExxonMobil*, and global engineering companies such as Technip, Akler Kvaerner, Saipam and CBI". Towers, reactors and heat exchangers are listed among the products that are sold to many countries like "USA, Canada, Russia, Poland, India, Brazil, Thailand, South Africa & Middle East countries, widely used in oil fields,oil refining and chemical industries".

Source: *Sunpower*

We see *SUNPOWER*'s selection as a testament to the quality of its products as well as a good source of future revenue.

A cursory glance reveals two major products worth RMB141m delivered to *SINOPEC*.

PetroChina

SUNPOWER is also a first-class member unit of the *PetroChina Vendor Network*.

PetroChina's Class 1 supplier requirements are extremely stringent. In addition to sufficient production capacity and a strict quality management system to ensure product quality, Class 1 suppliers are r equired to adhere to timely delivery schedules and strict service standards. PetroChina will use other suppliers only if supplies from Class 1 suppliers are insufficient.

Patents

Last, but not least, in this discussion of reputation of its products *SUNPOWER* has registered 64 patents. Mr Ma confirms that all 64 are live patents, meaning they can relate to some revenue. A cursory review confirms this is so.

Patents, table 1

	Description of patent	Number prefixed ZL
1	High-perfomance bellows cooler	02258563
2	High-performance bellows reboiling devices	02258565
3	High-performance heat exchanger with external spiral pipes	02258564
4	High flux heat exchanger	02258566
5	High-performance T-shape spiral pipe heat exchanger	02258567
6	High-efficiency spiral corrugated heat exchange pipe	200520072655
7	Drum type gas heater	200520069205
8	Inner concave groove structure high efficiency heat exchanger	200520072657
9	Spiral baffle high-effective heat exchanger	200620068683
10	Spiral-plate heat exchanger	200620068681
11	Low pressure-reduction highly effective heat transfer tube	200720036427
12	High-efficiency quick-cooling waste heat boiler	200720036428
13	High-temp. thermal insulating sliding pipe carrier	98242855
14	Super-lpow temp cool insulation tube bracket	00221272
15	High-pressure ultrahigh-pressure vibration damping pipe carrier	02221034
16	Screw pressing tight type spring ball air releasing valve assembly	200520069209
17	High efficiency heat insulating spacing clip	200620068682
18	Slide pipe frame with self-cooling device	200720036429
19	Medium high-temp heat pipe exchanger	02220956
20	Low temp heat rod with central temp measurement tube	03221816
21	Vertical pipe-plate small resistance reducing heat pipe air preheater	200420079151
22	Separator tube hot-tube type steam generator	200520069010
23	Equal-flow rate hot-pipe heat exchanger	200520069204
24	Heat pipe smoke gas temperature reductioner	200520069206
25	Gas making technology air-cooling heat pipe type steam generator	200520069008

ource: Sunpower, Phillip Securities Research

Patents, table 2

	Description of patent	Number prefixed ZL
26	Pneumatic fast liquid-filling device	200520069210
27	Straight tube plate heat pipe heat exchanger	200520069203
28	High-temp heat-pipe gas-gas heat exchanger	200520069007
29	Gas clean heating device	200520069202
30	Heat pipe coal-saving device for waste heat recovery of sulfuric acid production	200520071206
31	Separating heat pipe oil cooler	200520069208
32	Air cooling heat-pipe vapor generator for continuous rich oxygen content gas production	96231421
33	Heat pipe type waste heat boiler	00220211
34	Heat pipe type waste heat boiler	00220212
35	Safety integrated heat-pipe heat exchanger of reactable gas	01237492
36	High-efficient hot bar	200520072656
37	Corrosion resistant enamel heat pipe	200720045231
38	Flexible heat stick	200720036430
39	Auto-controlling water sealing valve system for recoverin, exhausting of torch gas	200420079150
40	Low-heat value acid gas burning discharge torch head	200420079152
41	Integrated hot-pipe gas-gas heat exchanger for desulfurizing smoke	200520069207
42	Energy-saving apparatus for producing steam by using residual-heat from metallurgical sintering machine	200520069009
43	Waste heat recovery system and device of sulfuric acid productn	200520071208
44	High-temp steam generator for recovering after heat from H2SO4	200520071207
45	Chemical industry heating furnace with coal water slurry as fuel	200720045230
46	Revolving furnace, electric stove, martin furnace steel-smelting high temperature air-cooling down heat-recovering steam generating energy conservation system device	200620077073
47	Large-power flexible hot rod	200710021057
48	Reinforcing method of large area frozen earth foundation building, auto cooling-down temperature-averaging reinforcement system	200810156945
49	Detachable type high-efficiency casing heat exchanger	200810156946
50	Medium-high temperature separated heat pipe exchanger	02220956
51	Waste heat recovery from smelting reduction ironmaking in rotary hearth furnace and steam production apparatus	200810156138
52	Waste heat recovery from smelting reduction ironmaking in heat pipe type rotary hearth furnace and steam production apparatus	200810156137
53	Chemical industry heating stove using water coal slurry as fuel	200710130923
54	Corrosion resistant enamel hot pipe	200710130922
55	Revolving furnace, electric stove steel-smelting HT gas cooling down heat-recovering steam producing energy conservation system device	200710130921
56	Waste heat reclaiming flue type efficient reboiler	200910184192
57	Low pressure flare filtering tank	200910184193
58	Cold machining molding process device of special tube for high-efficiency heat exchanger	200910184194
59	Shell-and-tube combined heat pipe exchanger	200910184195
60	Ultra-low friction bracket for pipeline	200910184196
61	Multifunctional axial light concentration type solar cooker	200910184197
62	Flare gas safe recovery and discharge system	200910184198
63	Pipe type air preheater for afterheat utilization of high-temperature dezincing waste gas of metallurgic rotary hearth furnace	200910017761
64	Super-lpow temp cool insulation tube bracket	00221272

ource: Sunpower, Phillip Securities Research

They started applying for patents before 2000. There was no application in 2003.

We have cross-checked to SIPO.

REPUTATION OF CUSTOMERS

*SUNPOWE*R announces on its website and the SGX "listed companies – company announcements" all projects above RMB20m. Between 2005 and 2009, it has recorded revenues totaling RMB2,708 million. About half are above the announce-able level and these are listed below.

I have discussed some customers already and will now look at the others in this list.

Between 2004 and 2009, *SUNPOWER*'s customers bought RMB1.5 billion worth of pressure vessels and heat exchangers. Other products, as classified by the company, like heat pipes and heat pipe exchangers, pipe supports, and energy-saving/environmental protection systems, contributed another RMB1.2 billion.

I shall try to understand their customers' businesses, including where they are heading and at what speed; and, why they are using *SUNPOWER* and if they will continue to do so.

Orders > RMB20m each

Date announced	*RMB mil*	Customer	Project
2-Apr-05	32.0	ENVIRO-CHEMIE	SA agreement - turnkey water, wastewater treat
26-Apr-05	32.0	China Shenhua Coal Liquefaction	Torch gas & torch gas recovery system
26-Aug-05	25.4	Guangxi Huiyuan Manganese	Rippled titanium anode plate facilities
31-Aug-05	54.5	Nantong Cellulose Fibres	Special material pressure vessel
6-Jan-06	24.5	Guangxi Huiyuan Manganese	Rippled titanium anode plate facilities
20-Feb-06	21.0	Qinghai-Tibet Railway	Heat pipes into permafrost
19-Jul-06	90.2	Shenhua Coal Liquefaction	Salty wastewater treatment
25-Sep-06	29.4	CTCI - Bangchak Petroleum	Pressure vessels
18-Oct-06	27.9	GE - Infrastructure, Water & Process	Engineering design, tech services, fab
8-Nov-06	55.1	CTCI - Thailand HMC Polymers	Pressure vessels - propane dehydrogenation
21-Nov-06	23.6	CTCI - undisclosed client	Install pressure vessels
29-Nov-06	27.4	BP Chambel	Titanium pressure vessels in Belgium
19-Dec-06	16.3	BP Chambel	Titanium pressure vessels in Belgium
25-Jul-07	51.8	Qinghai-Tibet Railway	Heat pipes into permafrost
30-Jul-07	37.0	Shanghai BASF	Special material pressure vessels
30-Jan-08	46.5	SINOPEC	Special material pressure vessel
18-Feb-08	94.3	SINOPEC, Wuhuan Engrg	Cu-Ni, Hastelloy alloy pressure vessels
25-Apr-08	36.0	Hyundai Steel	2 x waste-heat recovery systems
2-Jun-08	74.0	Jiangsu Zhongneng Polysilicon (1)	Pressure vessels
23-Jun-08	79.6	Jiangsu Zhongneng Polysilicon (2)	PVs consisting reactors, heat exchangers
20-May-08	45.8	Shenhua Baotou	Flare & gas recovery system
17-Sep-08	21.2	Jiangsu Zhongneng Polysilicon (3)	PVs containing reactors
3-Nov-08	56.0	Laigang	Waste-heat recovery
1-Apr-09	21.6	MTP HPPO	Pressure vessel
22-Apr-09	63.7	Wuhuan, for Henan Longyu	Pressure vessel
3-Jun-09	26.7	Qinghai-Tibet Railway	Heat pipes into permafrost
3-Aug-09	65.9	Wuhuan, for Shenhua Ningxia	4 x special material heat exchangers
29-Sep-09	18.5	Zhejiang Yisheng	2 x special material oxidation reactors
17-Feb-10	124.5	Jiangsu Zhongneng Polysilicon (4)	12 x equipment incl fluidized bed reactors
2-Aug-10	63.8	Kaifeng Longyu (Blue Diamond)	5 x Hastelloy reboilers
	1,386.1		

ıurce: Sunpower Group

Enviro-Chemie
Its website states: "We offer our clients the experience gained from the construction of over 13,000 water and wastewater plants in over 30 countries, providing the most ecological and economical solutions for every one." They have been doing this for 30 years. In 2009, it employed 300 engineers and paid them €70m in compensation.

We are looking at a company with a reputation to risk it with *SUNPOWER*.

Shenhua Group
Its website states: "*Shenhua Group* is the most competitive unified energy company in China. Pursuing a multi-faceted strategy, we have integrated segments of coal, railway, power and ports, and have integrated our coal production, transportation and sales. We own 54 coal mines with a total capacity of 200 million tons, 1369 kilometers of dedicated railways with a total transportation capacity of 128 million tons/kilometer, power plants with a total installed capacity of 16,080 MW."

It is now trading at RMB470 billion on the Shanghai Stock Exchange (also dual-listed in Hong Kong).

The *Shenhua* group has done 4 projects, totaling RMB234 million in 2005, 2006, 2008 and 2009. Again, here is a big state-owned enterprise having confidence in *SUNPOWER* over already a 5-year period.

The latest is one handled by *Wuhuan* - also handles another of *SUNPOWER*'s projects – with *Shenhua Ningxia. SUNPOWER* states that "the main materials of the heat exchangers are non-ferrous metals, which are considered high-performance and highly corrosion-resistant materials. The heat exchanger will form a key and integral part of *Shenhua Ningxia*'s 60,000-ton polyoxymethylene (POM) project."

By the way, the latest announcement of August 2, 2010 is for 5x Hastelloy reboilers in a (POM) polyoxymethylene project to be delivered to *Kaifeng Longyu*.

Shenhua-Ningxia is a JV between the *Shenhua* (51%) and the *Ningxia* (49%) groups.

In an old article dated 2008, *Shenhua*'s development at Ningdong was stated to increase their coal-to-chemical production capacities of 210k/year tons of dimethyl ether and 520k/year tons of olefin in 2010 to 1.2m tons of each by 2020. This is more than 200% growth or a CAGR of 13%. Will *SUNPOWER* get more business from *Shenhua*?

Guangxi Huiyuan Manganese
Before 2009, it was part of the *Guangxi Investment Group*, which by end of 2008 had total assets of RMB40.9 billion, net assets of RMB11.6 billion, and operating income of RMB12.6 billion. This puts it as the largest local state-owned enterprise in Guangxi, top 10 enterprises in Guangxi, and top 500 enterprises in China. There has been a re-structure at this group.

There were 2 projects done.

Nantong Cellulose Fibres
Its website states: "The company that was founded in March 1987, by the *China National Tobacco Corporation* (69.32%) and the *Celanese Corporation* (30.68%), is a large chemical and thermal power industrial enterprise. Invested capital totaled US$492 million.

CTCI
CTCI is a top oil refinery designer, having being ranked in the *ENER* top 150 global design firms. It also happens to be Taiwan's largest engineering, procurement and construction firm. It engaged *SUNPOWER* to install pressure vessels for an undisclosed client.

It also worked with *SUNPOWER* to deliver a propane dehydrogenation plant to two Thai clients, *HMC Ploymers and Bangchak Petroleum*.

Bangchak Petroleum
It boasts of a world-class oil refinery with maximum crude processing capacity of 120,000 barrels per day. "The refinery is equipped with hydro cracking technology from *Universal Oil Product Company Limited*, hydrogen producing technology from *Foster Wheeler*, sulfur recovery technology from *Technip KTI S.P.A.* and a mercury removal unit." Its total assets totaled 54 billion Thai baht (US$1.6 billion).

Thailand HMC Polymers
HMC Polymers is a market leader in specialty polypropylene in Thailand. *PTT*, Thailand's leading energy corporation, became a significant shareholder in it in August 2006, before the project win by *SUNPOWER*.

Other joint venture partners include *Bangkok Bank Plc.*, a leading financial institution in Thailand; and *LyondellBasell*, the world's largest producer of polypropylene, a leading supplier of catalysts and global leader in the development and licensing of polypropylene processes.

It finished its third polypropylene plant in late 2009 but this was not done by *SUNPOWER* but by a South Korean EPC company with office in Bangkok.

SUNPOWER supplied pressure vessels to its PDH plant in 2007/08.

Shanghai BASF Polyurethane Company
According to *Capital IQ*, *BASF Polyurethanes GmbH* "develops, manufactures, and markets polyurethane basic products, systems, and special elastomers primarily in Europe. It offers polyurethanes base materials, such as lupranat, lupranol, and lupraphen; and semi-rigid, rigid and flexible foam, rigid integral- and RIM-, footwear, and flexible integral systems, as well as cold cast systems and coatings. The company provides thermoplastic and cellular special elastomeres. It offers polyurethanes for automobile, construction, furniture, sports and leisure, coastal defense, insulation and transport, shoe fashions, hotel, and electronic industries."

BASF Polyurethane Shanghai operates as a subsidiary of *BASF SE*, which trades at a market cap of €42 billion.

This is a customer with almost 50 years in the business according to *Google Finance*,

Contract wins were in 2000, 2005 and 2008.

Laigang
It is a RMB6.6 billion market-cap company listed in Shanghai. It trades as *Laiwu Steel*. For 2009, it produced about 5 million metric tons of pig iron, 6 million metric tons of steel and 7 million metric tons of steel products.

MTP HPPO
It is a subsidiary of *Siam Styrene Monomer Company*, which is an associate of *Siam Cement Public Company*, one of Thailand's largest industrial conglomerates – with total assets of 316 billion Thai baht (US$9.7 billion),

Henan Longyu Energy
This company develops, operates and maintains coal mines. It also sells coal and related products in China. It is a subsidiary of *Yongcheng Coal & Electricity Group*, which mines and washes coal, processes metals and minerals, and generates electricity for distribution. It also has more than 10 billion tons of coal deposits.

Its project with *SUNPOWER* is handled by *Wuhuan Engineering Corporation*, which is an engineering consulting, design and contracting enterprise of the chemical, petro-chemical and medical industries.

Zhejiang Yisheng
Zhejiang Yisheng Petrochemical owns and operates purified terephthalic acid (PTA) plants in China. *Bloomberg*: "The company is based in Ningbo, China. *Yisheng Petrochemical* will build a new purified terephthalic acid (PTA) plant at Ningbo in eastern China with a nameplate capacity of 1.5m tonnes/year, which could start up as early as 2011. The plant would be *Yisheng*'s third PTA line in the Zhejiang province as it had planned, and would be the company's fourth PTA line in China. Construction on the new plant would begin early next year and would take about a year to complete. The new plant will use *Hitachi Corp*'s technology, which is similar to the one being applied at its Dalian plant. *SUNPOWER* manufactured two sets of special-material oxidation reactor equipment for *Yisheng*'s Zhejiang purified terephthalic acid (PTA) project. PTA is an important basic raw material in chemical processes.

The contract is expected to be delivered in the second half of year 2010.

Jiangsu Zhongneng
On 17 February 2010, it was announced that *SUNPOWER* had secured a RMB 124.5 million worth of contract to supply 12 key equipment including fluidized bed reactors to China's

largest polysilicon supplier, *Jiangsu Zhongneng Polysilicon Technology Development Co*. which is the main operating entity of Hong Kong-listed *GCL Poly Energy*.

GCL Poly Energy acquired *Jiangsu Zhongneng* in 2009 for HK$26.35 billion (almost S$5 billion). This acquisition is accounted for as a "reverse acquisition" in accordance with the requirements of the IFRS. As such, *GCL Poly Energy* is considered as the acquiree for accounting purposes. According to such accounting treatment, the 2009 full year results of *Jiangsu Zhongneng* were consolidated together with only the results from 1 August to 31 December 2009 of *GCL*'s existing power business.

Subsequent to the merger, *CIC (China Investment Corporation)* took a 20% stake in *GCL Poly Energy*.

This contract is a follow-on from three earlier contracts worth a total of RMB174 million. Obviously, *Jiangsu Zhongneng* must have been a satisfied customer as the latest contract is the largest by value.

It is also interesting to note in Executive Chairman Professor *Guo Hong Xin*'s statement that the latest contract was awarded to *SUNPOWER* "not just in a position of supplier but also as a long-term strategic partner". The strategic partnership has not only elevated *SUNPOWER*'s position as the designated equipment supplier of *Jiangsu Zhongneng*, but also as a priority supplier for the rest of *Jiangsu Zhongneng*'s power and related businesses. Professor *Guo* elaborates: "To form a strategic tie-up with a prominent and heavyweight customer is a major testament to Sunpower's technical expertise and technological leadership in China. We expect to further benefit from *Jiangsu Zhongneng*'s capacity expansion from 18,000 tons currently to 21,000 tons at the end of 2010. This will place *Jiangsu Zhongneng* as the world's largest polysilicon producer and supplier."

SUNPOWER seems to have the knack of being involved when companies are developing a world best or China's best plant of a chemical nature.

Before *Jiangsu Zhongneng*, *SUNPOWER* supplied pressure vessels to *China Tianchen Chemical Engineering Corporation* for its polysilicon projects in 2007. The first *Jiangsu Zhongneng* contract was for pressure vessels for its third phase of its polysilicon project. The second contract, also delivered before 2008 ended, was also for the same project; albeit "the specifications are more challenging and therefore require a higher technical expertise". The third was a smaller contract than the first two, but was delivered in 1H2009.

In its FY2009 result presentation, *Jiangsu Zhongneng* attributed its success in cost management to a ***hydrochlorination*** process called the modified Siemens process that recycles STC (a by-product of the polysilicon production process) into TCS, which is a main raw material of the polysilicon process. Its cost of production of polysilicon was reduced from US$66/kg in 2008 to US$36.4/kg by 4Q2009.

Cost is most important in the solar manufacturing business as it is of a commodity nature. Industry talk is that if a company could not reduce its cost to US$0.50 per watt, it would not survive.

We believe *SUNPOWER*'s first three contracts were for their customer's ***hydrochlorination*** process. And, the fourth contract is for their customer's ***hydrogenation*** process as reported. Both ***hydrochlorination*** and ***hydrogenation*** produce TCS, tri-chlorosilane = $HSiCl_3$.

Hydrochlorination = $3HCl + Si \rightarrow HSiCl_3 + H_2$

Whereas, *hydrogenation* = $2H_2 + Si + 3SiCl_4 \rightarrow 4HSiCl_3$

The latest is for *Jiangsu Zhongneng*'s 50,000-ton per annum cold-hydrogenation reconstruction project. According to a statement release from *Jiangsu Zhongneng*, it said that its breakthrough in effective cost management had come about as a result of its ability to integrate the hydrogenation process.

There is also a JV on solar farm business (49% owned by *CIC* and 51% owned by *Poly Energy*) with initial equity contribution of US$500 million. But *SUNPOWER* is not expected to win contracts of this nature.

Qinghai-Tibet Railway

This has been discussed earlier on the technology that launched SUNPOWER into heat transfer prominence with its 'magic rods'.

Sinopec
In the above RMB20 million category, there were only 2 contracts. But the experience tables show up a total of 24 projects.

Others
Other reputable names that need no elaboration include *Hyundai Steel, GE Infrastructure, BP Chambel*. The experience tables show also these names: *Dow, Alcoa, Samsung, Unocal, Praxair, CNOOC, Petrochina, Shanghai Secco, Shanghai Coking*.

Potential customers
In the latest result presentation slides, mention was made of potential customers. The following names given are: Exonmobil, Saudi Aramco, Bechtel, Total and Sabic.

REPUTATION OF MANAGEMENT

The three main persons are:

- GUO HONG XIN (Executive chairman of group) - owns 23.2% of SUNPOWER
- LI LAI SUO (Executive director of group) - owns 21.0% of SUNPOWER
- MA MING (Executive director of group) - owns 17.4% of SUNPOWER

Both Mr *Guo* and Mr *Ma* were classmates at *Nanjing Chemical Engineering Senior College* and graduated in July 1983. Mr *Guo* majored in thermal engineering while Mr *Ma* graduated in chemical engineering. Thereafter they went separate ways until 1998.

Based on the school's website, http://www.njcc.edu.cn/en/showintroduction.htm, it follows that the school was essentially a higher education vocational college although it was only ratified later when it came under the *Jiangsu Education Bureau*. It supported the chemical industries throughout its history, having associations with the chemical, metallurgical and petrochemical ministries of China. It went through several evaluations and was adjudged excellent.

Guo Hong Xin (Excutive Chairman)
As far as the academia is concerned, Mr *Guo* held vice dean at the *Heat Pipe Technology Development Institute of Nanjing University of Technology*, as well as deputy director of *National Science and Technology Ministry* heat pipe technology promotion centre between 1995 and 1997. Since 2003, he has been a professor on a part-time basis at the *Jiangsu Polytechnic University*.

Among the many papers that he authored, two - "Application of Heat Pipe Exchangers on Petrochemical Industry" and "Application of Special Tube Heat Exchangers on Petrochemical Industry" - were published in the Taiwan Journal of Chemical Technology.

He won second prize in the National Science & Technology Progress Awards in 2009. This particular year saw 282 awards (3 special awards, 17 first-place awards, and 262 second-place awards). To be one of 282 is a great achievement.
http://www.most.gov.cn/eng/newsletters/2010/201001/t20100120_75610.htm

Also listed on its website are Mr *Guo*'s other awards:

Excellent Entrepreneur award from the *Nanjing Government* from 2003 to 2005
Top 100 Excellent Private Entrepreneurs by the *Jiangsu Provincial Government* in 2004
Middle-aged Expert Outstanding Contribution to *Jiangsu Province* in 2006
Jiangsu Representative to *11th Communist Party Conference*
Great Contributor to *Nanjing Science & Technology*
Second Prize of Technological Progress from *Ministry of Education* in 2008
Third Prize of Technological Progress from *Hunan Province* in 2008
Second Prize of Science &Technological Progress from *Jiangsu Province* in 2009

Between 1993 and 1997, Mr *Guo*, worked as a director and deputy general manager and was responsible for sales and marketing of the *Shengnuo* Group. He joined *SUNPOWER* in 1998 was appointed executive chairman in 2004. He is responsible for the group's overall management and strategic planning.

Ma Ming (Executive Director)
According to the latest annual report, Mr *Ma* went straight after college into industry and worked for *Nanjing Chemical Industrial Company,* a company in the *Sinopec* group, as an engineer between 1983 and 1992. Then he moved to *Hainan Lida Industrial* as a manager responsible for sales and marketing.

He joined *SUNPOWER* in 1997 as a deputy general manager. He was appointed as executive director in 2004 and is responsible for financial management and external investments.

He graduated in 2007 with a Master of Engineering from the *University of Shanghai for Science and Technology*.

Li Lai Suo (Executive Director)
Another from the *Nanjing Chemical Engineering Senior College* as the other two executive directors, but Mr *LI* is their senior. He also graduated in thermal engineering as Mr *Guo* but two years earlier in 1981.

He held several positions at the college after graduation to 1997, including director of Thermal Engineering Lab and director of Energy Test Centre at the *Nanjing Chemical Engineering Senior College*. During this period, he got his bachelor of Engineering (majoring in thermal supply and ventilation) from *Tongji University* in 1988. In 2005, he obtained his executive MBA from the *China Europe International Business School*.

Mr *Li* joined *SUNPOWER* in 1997 as general manager. He was appointed executive director in 2004. He also carries the position of general manager and chairman of 64.5% owned *Nanjing Shengnuo Heat Pipe Co., Ltd*.

Between the prospectus and the company's website, we gather the following about the technical staff. http://en.sunpower.com.cn/profile/self/senior-experts-7b4a

Apart from the top three, the middle management also has good credentials.

Zhuang Jun
He is listed as *SUNPOWER*'s chief consultant, specializing in heat pipes R&D.

He holds professor and doctorial tutor with *Nanjing University of Technology*. He serves on the committees of *Jiangsu Science & Technology* and the *China State Planning*.

He won the "Excellent National Energy-Saving Individual" award. He also won the third prize twice in *National Scientific & Technology Progress of Chemical Ministry* and a fourth prize for national level inventions and 2nd Prize in *State Science & Technology Progress*. He published 4 monographs, issued more than 100 papers. He tutored over 20 graduates and doctors (including one student from *German Stuttgart University*). He acts now as director of *China Thermal Pipe Supervision Group*, standing director of *Jiangsu Energy Saving Research Center* and director of its editorial board.

Zhang Meisun
She is listed as *SUNPOWER*'s chief engineer. She worked in *Sinopec Yangtze Design Institute* for 34 years (1967-2001) before joining *SUNPOWER*, specializing in the design of various petrochemical projects in China. She graduated from *Nanjing Power Senior College* in thermal engineering.

Zhanghong
She is listed as *SUNPOWER*'s chief expert, specializing in R&D of effective heat transfer equipment, and dual phase liquid-gas heat transfer technology. She holds professor and doctorial tutor with *Nanjing University of Technology*. She is a deputy to the 10th Session of the *National People's Congress*. She is deputy secretary to the general and standing director of *Jiangsu Democratic Alliance* and *Nanjing Thermal Physics Engineering Association*. She is the deputy secretary to the general and standing director of Jiangsu Democratic Alliance and Nanjing Thermal Physics Engineering Association. She is a member of the *China Mechanical Engineering Association, Heat Exchanger Sub-branch, China Chemical Association, Chemical Facility Sub-branch* and *International Heat Pipe Association*.

She was awarded a *Jiangsu Science & Technology* prize for the young, third prize in *Shanghai Science & Technology Progress*, and third prize in *Excellent Young Teachers' Program* sponsored by *Fok Ying-Tong Education Foundation*. She has 7 patents in her name. She published more than 50 papers and is a co-author of 2 monographs.

Chen Shouwan
He is listed as *SUNPOWER*'s chief quality officer, specializing in the fabrication and quality control of pressure vessels. He has been credited with attaining *ASME* certification, and the Class 1 and Class 2 Pressure Vessel Design & Fabrication licenses for *SUNPOWER TECHNOLOGY* and Class 3 Pressure Vessel Design & Fabrication license for *SUNPOWER MACHINERY*. The company also attributed its *BASF* success to Mr *Chen*.

Wu Jiansu
He is listed as *SUNPOWER*'s chief mechanist, specializing in the fabrication and process check of pressure vessels for the chemical industry since 1970s. He was involved in the fabrication of China's first localization Urea Synthetic Tower (Φ 2800). Mr. *Wu* was appointed as CQO for fabrication of chemical equipments for a national key project - *Bao Steel Phase II Project* and was awarded honorable certificates issued by State Council. He has been a technical and process head for many offshore projects. Mr. *Wu* has acquired rich experiences in process plans, overseas engineering specifications and codes as well as fabrication supervision for exported pressure vessels. He is an excellent expert on the fabrication and quality control of pressure vessels.

Klaus Grafműeller
He worked as *BASF* senior expert on fabrication before joining as *SUNPOWER*'s chief representative at its European office.

Liu Feng
He is director of *Jiangsu Sunpower Heat Transfer Institute*, professorate senior engineer,and qualified as Master of Thermal Engineering. He has made innovative contributions to R&D on heat transfer enhancement, highly effective heat exchangers, waste heat boilers and heating furnaces.

Mr. *Liu* was awarded 2nd prizes in the *National Science & Technology Progress*, *Chemical Ministry Science & Technology Progress*, *PetroChina Science & Technology Progress*, and 1st prize & special prize in *Sinopec*'s own *Science & Technology Progress*. He was recognized for developing critical technological facilities for two key national projects that contributed remarkable economic returns. He had his two technical accomplishments on effective heat exchangers successfully appraised. Mr. *Liu* has 20 patents and published more than 30 papers, many of which were selected by *CEBA*. Mr. *Liu* was awarded the prize of *Top Ten Jiangsu Young Scientific Engineers*. His position as chief editor of the *Equipment Engineering Progress Handbook* was recognized with a national book award.

Liu Shiping
He is the deputy chief engineer of *Sunpower Heat Transfer Research Institute*. He holds a PhD in chemical engineering. He received his bachelor of chemical engineering from *East China University of Science and Technology*, his master in chemical engineering from *Tianjin University* and doctoral degree from *Canada McMaster University*.

He specializes in calculation, R&D of fluid mechanics, heat transfer technology, mixed technology and non-Newtonian fluid flow. He published papers in *Chemical Engineering Science, AIhE Journal, The Canadian Journal of Chemical Engineering* and *Langmuir*.

Other staff
The company employs some 1,200 people, comprising mainly sales (80), R&D (120), management (170) and production (830).

The engineers are: http://en.sunpower.com.cn/profile/self/personnel-qualifications-7925,

In terms of sustaining this quality workforce, since 3Q2009, *SUNPOWER* has established a post-doctoral programme specifically for the research of high efficiency heat-transfer technologies as well as government-approved corporate academician programmes.

In addition, *SUNPOWER* has recently received the formal approval from the *National Standards Administration Commission* on the nation-wide implementation of our special-shaped tubes for effective heat transfer on 1 May 2010. This means that SUNPOWER is one of an unique group to be conferred the opportunity to develop the national standard as a private enterprise, considering that national standards in China are typically drafted by the universities or large state-owned enterprises.

FINANCIAL REVIEW

The present and past

Product Segments

For the Fiscal Period Ending December 31	2004A		2005A		2006A		2007A		2008A		2009A	
RMB'million		%		%		%		%		%		%
Revenues												
Heat pipes	74.5	*37*	102.0	*42*	93.0	*24*	162.9	*29*	187.8	*24*	226.3	*30*
Pipe supports	42.2	*21*	25.5	*11*	42.6	*11*	32.4	*6*	54.9	*7*	69.3	*9*
Pressure vessels	66.5	*33*	98.5	*41*	221.5	*57*	269.7	*48*	485.2	*63*	364.0	*48*
Waste gas/ESEP	17.5	*9*	14.9	*6*	30.3	*8*	95.2	*17*	38.9	*5*	93.9	*12*
Total Revenues	**200.7**	*100*	**240.9**	*100*	**387.4**	*100*	**560.1**	*100*	**766.7**	*100*	**753.6**	*100*
Cumulative CAGR			***20%***		***39%***		***41%***		***40%***		***30%***	
Gross profit %		***35%***		***27%***		***26%***		***19%***		***23%***		***27%***
Segment result/% of revenue												
Heat pipes	10.0	13%	4.8	5%	11.1	12%	23.1	14%	25.4	14%	26.4	12%
Pipe supports	15.8	37%	6.1	24%	13.1	31%	8.7	27%	14.2	26%	25.1	36%
Pressure vessels	11.9	18%	10.4	11%	21.6	10%	18.9	7%	56.3	12%	43.5	12%
Waste gas/ESEP	7.4	42%	3.8	26%	2.4	8%	2.2	2%	(26.9)	NA	17.7	19%
Result b/int, tax, corp	**45.1**	***22%***	**25.2**	***10%***	**48.2**	***12%***	**52.9**	***9%***	**69.0**	***9%***	**112.6**	***15%***
Cumulative CAGR			***(44%)***		***4%***		***5%***		***11%***		***20%***	
PAT/PAT% of revenue	**43.5**	***22%***	**20.0**	***8%***	**37.2**	***10%***	**36.5**	***7%***	**44.9**	***6%***	**70.6**	***9%***

urce: Annual reports

Taking the total of revenues from the 2004 and 2005 and comparing these with the total of revenues of 2008 and 2009, we find that the 'pressure vessels' segment grew 415% and 'waste gas/energy saving & environmental protection' grew 310%. These two compare favourably to the other two segments of 'heat pipes' (+135%) and 'pipe supports' (+83%).

SUNPOWER started with pipe supports. Pressure vessels were first manufactured in 1998 when demand for energy-saving products heated up. Heat pipes and heat exchangers, used in the petrochemical, steel and chemical industries, started production in 1999.

Waste gas and energy recovery systems to recycle residual heat and recover petrochemical by-products in torch gas, mainly in the crude oil refineries, started in 2003. Their claim to fame was in 2005, when scientists formally appraised the system *SUNPOWER* built for *Sinopec Yangzi Petrochemical Co* and recommended that it be used throughout the industry in China. *SUNPOWER* said in their 2005 annual report that it would save *Sinopec Yangzi* RMB127 million a year.

2005 set another milestone in *SUNPOWER*'s history as their heat pipes, ordered by the *Qinghai-Tibet Railway Co* after successful testing for delivery in 2006, prompted the *Ministry of Railway*'s Engineering Headquarters to appoint *SUNPOWER* as the standard bearer of heat pipes used to protect the permafrost foundation under the rail- or high-way.

On the other hand, 2005 was the year that saw total segmental profit before corporate, finance and tax charges fall to RMB25 million from RMB45 million of the previous year. This was also the only year that such profit decreased. Management had attributed this to delays in major projects arising from customers delaying their own projects; as well as, the company going for competitive pricing in the heat pipes and heat exchangers market (which segment's result fell to 5% of revenue from 13% in the previous year).

Pressure vessels, which shared top segment by revenue with heat pipes in 2005, continued its exponential move by more than doubling in 2006, thereby usurping the top segment by revenue. This was due to the introduction of special materials pressure vessels.

Two orders of titanium pressure vessels from *BP Chembel* amounting to RMB44 million or 20% of total revenue from pressure vessels (condensers, dehydrating towers) for delivery in 2007.

SUNPOWER said that these constituted China's **first** such export into the international market. Management said in the 2006 annual report that it would continue to grow its international business as part of its earlier (2005) strategy of market diversification. This appears to be successful as far as number of contract wins post-2006 but the number of contracts above RMB20 million won was few viz. *Hyundai Steel* (2008) and *MTP HPPO* (2009).

Management also said in the 2006 annual report that it wanted to expand production capacity/sales to achieve economies of scale. Assuming 2007 was the year this intention was acted upon, this is proving to be successful as far as gross margin numbers indicate – 19% (2007), 23% (2008) and 27% (2009).

Total segmental result, however, only took off in 2009 (15% of revenue) as a negative segmental result in 'waste gas/ESEP', a RMB27 million loss, resulted in total segmental result of 2008 stagnating at the 2007 level of 9%.

2007 was the first time the words 'challenge' and 'challenging' were used (once each) in the annual report. Total segmental result dropped to 9% from 12% in 2006. This was a result of competitive pricing strategy initiated in 2006 to expand market share, especially in the ESEP.

Other cost increases in labour and finance expenses put squeeze on the net profit after tax margin, reducing the 2007 to 7% from 10% in the previous year.

2008 might have been challenging for many companies but this word was not used by *SUNPOWER*'s chairman, Mr *Guo* in his annual statement. *SUNPOWER* did a couple of negative things: Increase the doubtful debt provision of RMB21.1 million and pro-actively and temporarily suspended certain projects.

Yet, 2008 saw *SUNPOWER* securing direct-export orders, meaning these were ordered directly by customers (unlike when they work with consultants like *CTCI* or a sub-contract work from Sinopec). Pressure vessels constituted a record 63% of the revenue pie. Exports were also successful for their heat pipes, which went to Russia and Korea; and, flare systems went to central Asia.

The chairman also stated that *SUNPOWER* became one of a few global players capable of producing large-sized pressure vessels. And, it continued its foray into the solar-energy sector that they first penetrated the year before. *SUNPOWER* even managed to become a qualified supplier of pipe supports to *German UHDE*.

As its reputation grows, the *Ministry of Human Resources and Social Security* approved *SUNPOWER* to be a post-doctoral research program for high-efficiency heat transfer technology.

And, the *National Technical Committee* approved it to draft national standards in heat pipes and high-efficiency pipe products. The previous such approval was only by the *Ministry of Railway*.

So, despite the blip of a RMB26.9 million loss that was registered by the ESEP segment in an otherwise profitable segmental profit & loss account, 2008 establishes a then record revenue and a then record PAT. And gross profit margin did increase to 23% from 19% in the previous year, achieving the economies of scale, as envisaged a year ago.

If not for the suspension of certain projects and the doubtful debt, the segmental result would have been much more impressive. If you reverse the doubtful debt allowances of about RMB18 million that have not been used yet to the 2008 result (since almost all came from the 2008 year), the result before corporate, financial and tax charges would have been 11% instead of 9%. This then would have been an improvement from the 9% of the previous year.

Similarly, profit after tax would have been 8% instead of 6%. This means it would have been an improvement over the previous year's 7%.

Going to 2009, even if we adjust a write-back of RMB1.3 million doubtful debt the bottom line percentage would have remained the same at 15% for result before corporate, financial and tax charges; and, profit after tax at 9%.

Among the positives, chairman Mr *Guo*, highlighted the company's ability to get repeat customers in his annual statement.

His statement also talked about the delivery of 2x oxidation reactors to *Zhejiang Yishen*

Petrochemical for its PTA project being a technological breakthrough in terms of manufacturing key equipment applied in large-scale PTA projects.

He also said that the delivery of a dehydration reactor to *ZRCC, Sinopec* subsidiary, was a "milestone in the PRC government's policy to encourage the localization of key process equipment."

The heat pipes reported 20% higher revenue but segmental result was only slightly better.

Overall, gross margin was better at 27% vs. 23% previously despite lower material prices; profit before corporate, financial and tax charges came in at 15% vs. 9% (or adjusted of 11%); and, profit after tax came in at 9% vs. 6% (or adjusted of 8%).

A peep into the future

The revenue from pressure vessels decreased 25% from RMB485 million to RMB364 million due to material price decline. This trend should persist over the next 4 to 6 years. It is interesting to note this because we probably have seen the peak in industrial material prices in 2007-8. The 40-year cycle is likely to play out, which means stock market or economic recovery is only bottoming earliest 2012 or latest 2020. Taking the mid-point is 2016 but I will go by an average of the predictions of a double bottom of 2013 and 2016:
Terry Laundry http://www.ttheoryfoundation.org/t-theory-super-cycles-the-40-year-cycle.html,
And Woody Dorsey http://online.barrons.com/article/SB127605459202003151.html.

In *SUNPOWER*'s context, with industrial material prices going below today's prices for the next three or six years, we have to factor in lower revenues in our forecast due to price.

In essence, the writer believes that deflation is more likely than inflation.

There are two factors that could result in increasing revenues.

One is because *SUNPOWER* is involved in sectors driven by the haves. Obviously, the have-nots are some to-be-bankrupt European nations and haves would be a country like China, As far as China is concerned, there are enough fiscal incentives for the clean energy sector, **which SUNPOWER is involved in** and, which according to Julian Wong, an energy policy and technology analyst and a 'regenerative systems' advocate based in Washington, D.C., in his blog post, http://greenleapforward.com/about-2/, said:

China's investment in clean energy is serious in the following ways.

- Compliance with China's new goal to reduce carbon dioxide emissions per unit of economic output by 45 percent requires RMB200 billion annually for a decade.
- Market creation policies drive manufacturing prowess and now emerging, innovation activities. Increasing patents are noted.
- Lots of investments outside of stimulus package, especially in renewable energy and nuclear.
- State-owned enterprises are vehicles of clean energy investments e.g. CECIC.
- Long-anticipated new energy development plan is in the works, with some RMB3.0 to RMB4.5 trillion over the next 10 years.

The green movement in China is, in a substantial way, motivated by its thirst for energy. Still soaked in Mao influence, its present leaders just want to be self-sufficient. Because of its previous lack of it, China has made huge moves around the world tying up energy reserves. Huge money has been spent on infrastructures that will make previously unfeasible projects of the wind, solar, hydro and nuclear energy sectors now pretty to very profitable. And, going by SUNPOWER's chemical industry clients there is no letting up in terms of infrastructure spending on energy-related projects e.g. coal-to-liquid.

The other reason for higher revenues, despite likely global deflation, is that the reputation that *SUNPOWER* has built so far will start reaping rewards. If this happens, we should re-rate it to a premium over the general market or sector.

Order book

If I look at the order book, as disclosed usually at the presentation of annual results, the order book reflects the actual sales quite closely, varying between 96% to 111% of revenue over orders, with the exception of 2006 (see table below). Taking out the 2006 number, the average is that revenue exceeds order book by 9%.

Order book									
For the Fiscal Period Ending December 31 *RMBmil*	2005A	2006A	2007A	2008A	2009A	2005-9	2010F	2011F	2012F
							average		
Orders	251	241	503	748	750	2,493	710	832	973
Total Revenue	241	387	560	767	754	2,709	775	907	1,061
Revenue/Order%	96%	161%	111%	103%	100%	109%	109%	109%	109%

ıurce: Phillip Securities Research

However I cannot give a 9% above current order book of RMB630 million for the revenue forecast as this piece of history is not repeating.

The 2Q2010 report came with a nice upward revision of order book to RMB790m from RMB630m previously reported at FY2009 end, and management states that more than half of which will be delivered in 2H2010. 1H2010 revenue came in at RMB334m. If I add half of RMB790 (i.e. RMB395m), I get RMB729m.

Inventory has been quite a good predictor of future revenue (materials are bought quite soon as prices are confirmed with customers). The probable exception is when it is a lousy year and projects are suspended.

2008 quarterly revenues came in close to the previous quarters' closing inventory. 2009 quarterly revenues, except 4Q, came in at about RMB100m under the previous quarters' closing inventory. 2010 1Q and 2Q revenues came in at about RMB50m under previous quarters' inventory. Using a shave of R50m off 2Q2010 inventory of RMB281m, revenue of 3Q2010 is estimated to be RMB220m. As 4Q revenue is mostly higher than 3Q, I assume the worst case of them equalling. So, a RMB440m for 2H2010.

This should give me a RMB775m for FY2010.

I want to give SUNPOWER a premium over its management's guidance of 20% growth for the market (net 30%) because it has already established a reputation and following and it should outperform the market. At the same time, I want to minus a 10% for decline in material prices (net 17% = 130% x 90%).

This equates to revenues of RMB907m for FY2011 and RMB1,067m for FY2012.

Margins and profit forecast

As for margins, management delivered higher margins in the 2008 and 2009, as promised in terms of economies of scale and projects of higher degree of difficulty. The question is whether it will continue to deliver even higher margins.

For gross margin, since they delivered from 19% to 23%, then to 27% (see page 23), I will forecast that it will move up to 30% and stay there. After all, 29.9% was delivered for 2Q2010.

For result before corporate, financial and tax charges, since they delivered from 9% to 11%, then to 15% (see page 23), I will forecast that it will move up to 18% (mostly gross margin effect) but I will also minus RMB10 million each year for 2011 and 2012. I am not minus-ing any RMB10 million for 2010 because half a year had passed without any mishap.

Selling and distribution expenses as a percentage of revenue had been between 3.21% and 3.36% for the last three years (2007-9). For forecast purpose, 3.25% is used.

In line with more difficult times ahead, and together with popular expectation of rising wages, about an incremental RMB20 million is added every year. As a percentage of revenue, these numbers translate to between 13.4%-14.0% for the three forecast years. The same percentages for 2008 and 2009 12.6% and 11.2% respectively.

Interest expense is expcted to decline as cashflow would reduce loan amounts.

Flat numbers are used for other income and expense.

Income tax exemption will taper off and 2012 will see full tax rate of 25% in place. Effective rates for 2010 and 2011 are 16.2% and 23.2% respectively. This is because in 2010, two of

the three operating subsidiaries pay tax at 15% while the third has a 50% exemption of the 25% rate. Only the latter exemption is in place for 2011.

A flat 9% of profit before tax is used to account for minority interest.

As a result, PATMI margin is between 8.4% and 8.9% for the three years.

Balance sheet forecast
Accounts receivable days on a 548-day basis for 2008 and 2009 are 216, which is the number used for forecast for 2010-2012. 17% of accounts receivables is used for other receivables.

Similarly, the inventory days on a 548-day basis for 2008 and 2009 simple-average 138, which is the number used for the three forecast years.

Trade payables as a percentage of order book for 2008 and 2009 simple-average 50%, which is the number used for the three forecast years. Similarly, the percentage of 9% is used for other payables.

Loans are not reduced on a efficiency basis to reflect positive cashflow. Instead loans are reduced according to what had been disclosed in the 2009 annual report and if the loans relate to the property recently purchased. Gross and net gearing ratio therefore improve slightly.

General reserves will limit up in 2010.

No change has been forecast for deferred tax asset or liability.

Pledged assets is set to the pledged assets to order book percentage of 2009.

As announced, the property that houses the office and plant that carries one of the two ASME certificates for pressure vessel production at 2111 Chengxin Avenue had been purchased for RMB66 million.

In addition, only RMB44 million is forecast as plant and equipment for the three years.

Dividend
SUNPOWER did not pay any dividends from IPO to 2009.

In a casual discussion with management three months ago, we highlighted the importance of dividends to investors, who buy stocks of solid companies that give consistent performance of profit. We believe these investors would buy companies like *SUNPOWER* if it can also deliver a reasonable dividend yield of 3% (at a higher price).

Therefore we are providing for a 30% payout of PATMI for the forecast years. Please note, however, that management has not agreed. At current price, this works out to about 4% yield.

PEER COMPARISON

Wuxi Huaguang
Wuxi Huaguang Boiler, per *Capital IQ*, “engages in the manufacture and sale of boilers in China. It offers boilers for power plant, heat recovery steam generators, boilers for garbage, life-form fired boilers, flue gas desulfurization and purification equipments, and water treatment equipments. The company was founded in 1958 and is based in Wuxi.”

It trades on the *Shanghai Stock Exchange* at a market cap of RMB4.4 billion and a historical P/E of 37, against the general market P?E of 20. That’s more than 68% premium.

Its gross profit margin is way below *SUNPOWER*’s and its net profit margin is about half that of *SUNPOWER*’s. The gross margin has been falling vs. *SUNPOWER*’s rising in the last two years. Its revenue dropped 7% in 2009 vs. *SUNPOWER*’s flat top-line performance.

In terms of customers, its boilers are sold to power-plants in Inner Mongolia and Henan; energy recovery systems are made for CMI Belgium; flue gas systems to AE&E (Austria); and, equipment to water-treatment plant of Datang and nuclear plant at Qinshan.

Dongfang Electric

Dongfang Electric, per *Capital IQ*, "engages in the manufacture, construction, and sale of thermal power equipment and hydro power equipment in China. The company offers steam turbine, water turbine, gas turbine, air compressor, fans, pumps, ancillary machines, wind power generating units, and solar power and renewable energy sources; industry control and automation; research and development, design, installation and testing, renovation, and maintenance service for power stations and related equipment; and mechanical equipment and parts. It also involves in the design, manufacture, and sale of power generation equipment sets, turbine generators, AC and DC motors, and control devices; and reconstruction and redevelopment of power plants and installation of equipment for power plants. In addition, the company offers power station boilers, power station auxiliaries, and industrial boilers, valve of power station, petrochemical vessel, nuclear reaction equipment, and environmental protection equipment. The company was founded in 1993 and is based in Chengdu."

It trades on both the *Hong Kong* and *Shanghai Stock Exchanges* at a market cap of about RMB50 billion and a historical P/E of 14. Overall market trades at a P/E of 14.7 for June 2010 at the *HKSE*. This would put *Dongfang* even with the general P/E.

Revenue has been growing (better than *SUNPOWER*); gross margin is between 15% and 19%; and, net margin is now about 5% (all margins are worse than *SUNPOWER*).

It participated in prominent thermal projects of Zouxian, Arak and E'zhou; and, hydropower projects of Barotha, Sanxia and Er'tan.

Thermax

Thermax, per *Capital IQ*, "provides engineering solutions in energy and environment sectors in India and internationally. It offers products and services in heating, cooling, waste heat recovery, captive power, water treatment and recycling, waste management, and performance chemicals. The company's products include boilers and heaters, such as hot water generators, waste heat recovery systems, municipal waste boilers, large industrial boilers, packaged boilers, solar-based heating systems, fired heaters, and thermal oil heaters; and absorption cooling products comprising steam driven chillers, hot water driven chillers, liquid/gaseous fuel driven chillers, multi energy driven chillers, ammonia chillers, heat pumps, and solar-based cooling systems. It also offers ion exchange resins, specialty polymers, industrial chemicals, oil field chemicals, membranes, and fuel and water treatment chemicals; and water and waste solutions, including dual media filters, high rate filters, gravity filters, tube settlers, demineralisers, dealkalisers, membrane separation and reverse osmosis systems, waste recycle and recovery systems, and waste management and incineration systems. In addition, the company provides captive power and cogeneration systems on engineer-procure-construct or LSTK basis, which utilize naptha, coal, gas, biomass, lignite, petcoke, industrial waste gases, and washery rejects; and standard air pollution control products, electrostatic precipitators, and air purification systems."

"Thermax serves iron and steel, oil and gas, refineries and petrochemical, power generation, cement, textile, fertilizer, chemical, pharmaceutical, food processing, sugar, paper and pulp, and automobile industries. *Thermax* was formerly known as *Wanson India Pvt Ltd*. The company was incorporated in 1966 and is headquartered in Pune, India."

It trades on the *Bombay Stock Exchange* at a historical P/E of 35. Overall index trades about 22 for now. This would put *Thermax* at about 59% premium.

Trailing revenue performance to June 2010 is similar to *SUNPOWER*'s – both are flat. Gross margin has been between 29% and 32% in the last few years, slightly better than SUNPOWER. Its year-end being March, it has reported actual results for 2010, which show a 9.5% decrease in revenue. Net profit margin has been consistently at 8%. However their order book of June 2010 is twice that of June 2009.

One could say the premium is justified.

KNM Group

KNM Group, per *Capital IQ*, "engages in the design, manufacture, assembly, and commissioning of equipment for the oil, gas, petrochemical, and mineral processing industries. The company provides process equipment, pressure vessels, reactors, column and towers, drums, heat exchangers, air finned coolers, process gas waste heat boilers, specialized shell and tube heat exchangers, condensers, spheres, process tanks, mounded

bullets, process skid packages, turnkey storage, skid mounted assemblies, process pipe systems, specialized structural assemblies, and module assemblies."

"It also offers project manpower, engineering, non-destructive testing, and technical consultancy services; and project management and technical services. Further, it involves in the design, manufacture, sale, and service of heat exchange systems; provision of sulphur removal and recovery services; development of properties; and manufacture of air cooled, shell and tube, and plate heat exchangers, and vessels and columns. Additionally, the company develops, processes, and distributes membranes, membrane modules, and membrane components. The company operates in Malaysia, China, India, Brunei, Indonesia, Australia, UAE, Saudi Arabia, Canada, Brazil, Italy, the United States, and Germany. *KNM Group* was founded in 1990 and is based in Seri Kembangan, Malaysia."

It trades on the KL Stock Exchange at a historical P/E of 8 and a forward P/E of 11.

Revenue fell in 2009 by 27%. However in its corporate slideshow dated 3 June 2010, it shows a 2010E utilization of 90,000MT vs. 93,400MT for 2009. This partly explains why the estimate for 2010E is 4% better than 2009. *Capital IQ* shows 17 analysts covering *KNM*. Gross margin is between 22% and 28%; and, net profit margin estimate is 10%.

Perhaps the market is not that happy with the many acquisitions.

CIMC ENRIC

CIMC Enric, per *Capital IQ*, "engages in the design, manufacture, sale, and maintenance of transportation, storage, and processing equipment used in the energy, chemical, and liquid food industries in the China and internationally. The company's Energy segment offers compressed natural gas (CNG) seamless pressure cylinders, CNG trailers, liquefied natural gas (LNG) trailers and tanks, CNG/LNG refuelling station systems, LPG tank trucks and tanks, and natural gas compressors, as well as project engineering services comprising LNG application projects. Its Chemical segment provides specialty gas trailers, stainless steel tank containers for hazardous chemical liquids, carbon steel gas tank containers for hazardous pressurised chemicals, and cryogenic storage tanks and cylinders for industrial gases. The company's Liquid Food segment offers stainless steel processing and storage tanks; and project engineering services, such as turnkey projects for the processing and distribution of beer and fruit juice. *CIMC Enric* was incorporated in 2004 and is headquartered in Shenzhen."

It trades on the Hong Kong Stock Exchange at a historical P/E of 30 and at a market cap of HKD3.15 billion. This is double the overall P/E.

Revenue has been erratic. Gross margin has stabilized at 18%-19%. Net profit margin has dropped to 7% in 2009 from 10% in 2008, and 13% in both 2007 and 2006. There is no earning estimate.

Saraswati Industrial

The *Saraswati Industrial Syndicate*, per *Capital IQ*, "engages in the manufacture and sale of heavy engineering equipment, and mechanical and hydraulic presses and castings in India and internationally. It also engages in the construction and erection of plant and machinery; and manufacture and sale of sugar. The company offers process plant equipment, which include reactors, high pressure vessels, shell and tube exchangers, columns and towers, high pressure boiler drums, and boiler pressure parts; and straight sided mechanical and hydraulic presses, and mechanical gap frame presses. In addition, it provides boilers, including dump grate, travelling grate, atmospheric fluidised bed combustion, circulating fluidised bed combustion, oil/gas fired, and waste heat recovery boilers, as well as deaerators and spares; and castings that consist of hydro turbine, gas turbine, steam turbine, valve, Mn steel, Ni–hard, pump, general, sugar mill, cement mill, and S.G. iron castings. Further, the company offers iron castings for pump and compressor, chemical and dye stuff, soda ash, tool and dies, machine tools, steel plant, and sugar industries; complete cane sugar plants and machinery, cane mills, process house equipment, and bagasse fired boilers; liquified gas containers; and contract manufacturing services. *The Saraswati Industrial Syndicate Limited* is based in Noida, India."

It trades at a historical P/E of 19, just a tad under the market average. Although revenues have been growing, its profits have been erratic.

Overall

Saraswati, KNM and Dongfang are trading close to the overall market. Thermax has a great order book to justify its high multiple. Wuxi is in an A-chip.

Peer Comparison

Peers listed in Shanghai, Hong Kong, Mumbai, KL	Year to 2006A	Year to 2007A	Year to 2008A	Year to 2009A	Trailing Year to Mar10A	Year to 2010F	Year to 2011F	Year to 2012F
WUXI HUAGUANG								
600475.CH @ RMB 17								
- Revenue RMBm	2,487.6	2,634.0	2,779.4	2,582.4	2,677.3	2,962.9	3,662.2	4,088.8
- yoy% growth	***24%***	***6%***	***6%***	***(7%)***	***(0%)***	***15%***	***24%***	***12%***
- Gross profit %	*20%*	*20%*	*18%*	*18%*	*17%*	*N/A*	*N/A*	*N/A*
- Net profit %	***9%***	***7%***	***4%***	***5%***	***4%***	***5%***	***6%***	***6%***
- EPS RMB	0.90	0.67	0.40	0.46	0.47	0.59	0.89	1.04
- P/E	**N/M**	**N/M**	**N/M**	**37**	**36**	**29**	**19**	**16**
- P/TB	**N/M**	**N/M**	**N/M**	**5.0**	**4.8**	**NA**	**NA**	**NA**
- P/CFO	**N/M**	**N/M**	**N/M**	**14.8**	**21.8**	**NA**	**NA**	**NA**
DONGFANG ELECTRIC								
1072.HK @ HK$ 29								
- Revenue HK$m	22,975.9	26,566.3	32,365.1	37,732.8	37,421.5	40,299.4	46,859.3	51,816.2
- yoy% growth	***657%***	***8%***	***15%***	***17%***	***11%***	***8%***	***16%***	***11%***
- Gross profit %	*18%*	*19%*	*15%*	*16%*	*17%*	*N/A*	*N/A*	*N/A*
- Net profit %	***9%***	***8%***	***1%***	***5%***	***5%***	***3%***	***3%***	***3%***
- EPS HK$	2.52	2.60	0.21	2.00	2.15	1.21	1.53	1.68
(HKSE P/E=- P/E	N/M	N/M	N/M	**14**	**13**	**24**	**19**	**17**
- P/TB	N/M	N/M	N/M	**4.4**	**3.5**	NA	NA	NA
- P/CFO	N/M	N/M	N/M	**5.2**	**4.8**	NA	NA	NA
THERMAX								
TMX.IN @ RP 760.00	***(year end March)***				***(to Sep)***	***(actual)***		
- Revenue Rpm	16,397.7	23,626.4	35,254.2	35,007.0	31,918.6	31,854.7	41,518.5	51,531.2
- yoy% growth	***28%***	***44%***	***49%***	***(1%)***	*NA*	***-9.5%***	***31%***	***24%***
- Gross profit %	*32%*	*31%*	*29%*	*32%*	*32%*	*N/A*	*N/A*	*N/A*
- Net profit %	***6%***	***8%***	***8%***	***8%***	***8%***	***8%***	***8%***	***8%***
- EPS Rp	7.96	16.26	24.40	24.25	22.57	21.70	28.45	35.68
- P/E	N/M	N/M	N/M	N/M	N/M	**35**	**27**	**21**
- P/TB	N/M	N/M	N/M	**9.3**	NA	NA	NA	NA
- P/CFO	N/M	N/M	N/M	**56.4**	NA	NA	NA	NA
KNM								
KNMG.MK @ R$ 0.52								
- Revenue R$m	909.0	1,230.1	2,528.8	1,839.6	1,669.5	1,896.6	2,232.9	2,461.3
- yoy% growth	***164%***	***35%***	***106%***	***(27%)***	***(39%)***	***4%***	***18%***	***10%***
- Gross profit %	*22%*	*26%*	*28%*	*23%*	*4%*	*N/A*	*N/A*	*N/A*
- Net profit %	***15%***	***15%***	***13%***	***14%***	***7%***	***10%***	***11%***	***11%***
- EPS R$	0.04	0.05	0.09	0.07	0.03	0.05	0.06	0.07
- P/E	N/M	N/M	N/M	**8**	**18**	**11**	**8**	**7**
- P/TB	N/M	N/M	N/M	**7.6**	**8.2**	NA	NA	NA
- P/CFO	N/M	N/M	N/M	**4.7**	**5.0**	NA	NA	NA
CIMC ENRIC								
3899.HK @ HK$ 3.85								
- Revenue HK$m	879.0	1,074.2	6,604.7	3,490.4	NA	NA	NA	NA
- yoy% growth	***50%***	***22%***	***515%***	***(47%)***	*NA*	*NA*	*NA*	*NA*
- Gross profit %	*29%*	*27%*	*19%*	*18%*	*NA*	*NA*	*NA*	*NA*
- Net profit %	***13%***	***13%***	***10%***	***7%***	*NA*	*NA*	*NA*	*NA*
- EPS HK$	0.24	0.30	0.34	0.12	NA	NA	NA	NA
- P/E	N/M	N/M	N/M	**32**	NA	NA	NA	NA
- P/TB	N/M	N/M	N/M	**3.2**	NA	NA	NA	NA
- P/CFO	N/M	N/M	N/M	**9.1**	NA	NA	NA	NA
SARASWATI								
TMX.IN @ RP 1295.20	***(year end Sep)***							
- Revenue Rpm	11,889.7	14,739.8	16,360.4	21,217.5	NA	NA	NA	NA
- yoy% growth	***55%***	***24%***	***11%***	***30%***	NA	NA	NA	NA
- Gross profit %	*21%*	*19%*	*23%*	*25%*	NA	NA	NA	NA
- Net profit %	***5%***	***4%***	***2%***	***2%***	NA	NA	NA	NA
- EPS Rp	73.81	76.36	33.79	68.20	NA	NA	NA	NA
- P/E	N/M	N/M	N/M	**19**	NA	NA	NA	NA
- P/TB	N/M	N/M	N/M	N/M	NA	NA	NA	NA
- P/CFO	N/M	N/M	N/M	N/M	NA	NA	NA	NA

ource: Annual reports, CapitalIQ

VALUATION & RECOMMENDATION

On a skeptical case basis, let's assume *SUNPOWER* suddenly grinds to a halt in 2020, after another 10½ years from now. If one assumes a cash flow of RMB90m per year (the operating cash flow of 2012 is RMB90m) continues to 2020 at a constant clip (growth compensates discouning), we would have RMB720m (2013-2020=8 years). Add this to current assets less total liabilities and minority at 2012 and adjusting back the dividends paid of RMB71m, we get RMB1,085m (RMB720m+RMB1,063-RMB719m-RMB51m+RMB71m).

At 2010F earnings of RMB67.7m, this works out to a P/E of 16.0, 33% above overall.

Despite all the reputation it has established, some investors may still not give this S-chip the recognition it truly deserves. So, let's start with a pragmatic valuation equal to the historical overall of 12X. This translates to a price of SG46¢ (+61% upside). BUY.

FINANCIALS

Profit model (RMB mil)	2005A	2006A	2007A	2008A	2009A	2010F	2011F	2012F
Order book	251.0	241.0	503.0	748.0	750.0	710.0	832.0	973.0
Total Revenue	240.9	387.4	560.1	766.7	753.6	775.0	907.5	1060.9
Cost of goods sold	(175.7)	(287.1)	(451.6)	(593.2)	(552.2)	(550.3)	(635.2)	(732.0)
Gross profit	65.2	100.3	108.5	173.6	201.3	224.8	272.2	328.9
Selling & distribution expenses	(18.5)	(18.2)	(18.8)	(24.6)	(24.7)	(25.2)	(29.5)	(34.5)
dmin expenses	(28.6)	(37.7)	(48.2)	(96.4)	(84.5)	(104.0)	(126.8)	(147.8)
Other operating income	3.1	1.4	6.5	8.5	8.1	8.0	8.0	8.0
ther operating expenses	(0.1)	(0.4)	(0.7)	(0.3)	(0.7)	(0.5)	(0.5)	(0.5)
Profit b/interest, tax and minority interest	21.1	45.4	47.2	60.7	99.6	103.0	123.5	154.1
terest expenses	(1.3)	(4.2)	(7.4)	(13.9)	(11.9)	(13.6)	(11.6)	(8.9)
Interest income	0.1	0.4	0.3	1.0	0.9	1.0	1.0	1.0
Profit before income tax and minority interest	20.0	41.6	40.1	47.8	88.6	90.4	112.9	146.2
Income tax	0.0	(4.4)	(3.6)	(2.9)	(18.0)	(14.6)	(26.2)	(39.1)
inority interest	(1.4)	(0.9)	(3.9)	(4.8)	(6.4)	(8.1)	(10.1)	(13.1)
Profit after income tax and minority interest	18.6	36.2	32.7	40.1	64.2	67.7	76.6	94.1
Diluted earnings per share RMB¢	5.7	11.0	9.9	12.2	19.5	20.6	23.3	28.6
Diluted earnings per share SG¢	NM	NM	NM	NM	3.9	4.1	4.6	5.7
Growth & margins (%)	**2005A**	**2006A**	**2007A**	**2008A**	**2009A**	**2010F**	**2011F**	**2012F**
Revenue growth	20.0%	60.8%	44.6%	36.9%	(1.7%)	2.8%	17.1%	16.9%
Gross profit growth	(7%)	54%	8%	60%	16%	12%	21%	21%
Net profit growth	8%	9%	6%	5%	9%	9%	8%	9%
Gross profit margin	27.1%	25.9%	19.4%	22.6%	26.7%	29.0%	30.0%	31.0%
Net profit margin	7.7%	9.4%	5.8%	5.2%	8.5%	8.7%	8.4%	8.9%
ROA	5.7%	8.0%	4.6%	4.8%	6.3%	6.7%	7.0%	7.6%
ROE	15.3%	22.9%	17.1%	17.4%	21.7%	19.8%	19.3%	20.3%
Cash flow statement (RMB mil)	**2005A**	**2006A**	**2007A**	**2008A**	**2009A**	**2010F**	**2011F**	**2012F**
Profit(Loss) before tax	20.0	41.6	40.1	47.8	88.6	90.4	112.9	146.2
epreciation, amortisation	3.1	5.4	8.7	10.7	11.2	12.8	14.3	14.8
Loss on disposal of plant, equipment	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
ceivables provision/write-off	1.0	0.9	(0.2)	20.9	(1.3)	0.0	0.0	0.0
Inventories provision/write-off	0.3	1.3	0.9	2.5	(2.9)	0.0	0.0	0.0
terest expense	1.3	4.2	7.4	13.9	11.9	13.6	11.6	8.9
Interest income	(0.1)	(0.4)	(0.3)	(1.0)	(0.9)	(1.0)	(1.0)	(1.0)
Operating income b/working capital changes	25.5	53.0	56.6	94.8	106.8	115.8	137.8	168.9
Change in trade receivables	(63.8)	(29.0)	(87.5)	(56.3)	(90.7)	27.3	(46.8)	(71.9)
ange in other receivables	(27.0)	(9.8)	(4.4)	(47.7)	57.1	(19.8)	(8.0)	(12.2)
Change in inventories	(19.6)	(25.8)	(97.8)	(60.9)	2.2	2.0	(21.1)	(35.1)
ange in trade payables	70.1	23.5	137.1	59.2	26.3	(32.7)	61.0	70.5
Change in other payables	0.8	2.4	21.3	34.3	(4.2)	(0.9)	11.0	12.7
Cash generated from operations	(13.9)	14.3	25.3	23.3	97.6	91.7	133.8	132.9
Interest paid	(1.3)	(5.1)	(10.5)	(13.9)	(11.9)	(13.6)	(11.6)	(8.9)
terest received	0.1	0.4	0.3	1.0	0.9	1.0	1.0	1.0
Income tax paid	0.0	(3.4)	(1.3)	(7.7)	(15.5)	(12.0)	(24.0)	(35.0)
Net cash from operating activities	(15.1)	6.2	13.8	2.7	71.0	67.1	99.2	90.0
Purchased land rights	0.0	(15.2)	0.0	0.0	0.0	(18.8)	(23.9)	0.0
urchased plant, property & equipment	(19.5)	(33.5)	(40.1)	(7.9)	(12.6)	(29.1)	(14.2)	(10.0)
Sale proceeds of property, plant & equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash used in investing activities	(19.5)	(48.8)	(40.0)	(7.9)	(12.6)	(47.8)	(38.2)	(10.0)
Issue of common stock	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O proceeds	35.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paid minority interest	(0.6)	(0.6)	(0.6)	(1.2)	0.0	0.0	0.0	0.0
ange in pledged deposits	(26.5)	17.3	(9.7)	(6.3)	(19.9)	2.5	(7.3)	(8.5)
Proceeds from bank loans	39.0	62.0	57.0	143.5	263.4	182.0	147.0	131.0
paid bank loans	0.0	0.0	0.0	(146.0)	(181.8)	(218.1)	(192.0)	(162.0)
Net cash from financing activities	51.2	78.7	46.7	(10.0)	61.8	(33.6)	(52.3)	(39.5)
xchange difference on translation	(0.2)	(0.2)	0.2	0.2	0.0	0.0	0.0	0.0
Net change in cash	16.4	36.0	20.7	(15.0)	120.2	(14.4)	8.7	40.6
Balance sheet cash difference	16.4	36.0	20.7	(15.0)	120.2	(34.7)	(14.3)	12.4

ource: Sunpower, Phillip Securities Research

FINANCIALS

Balance sheet (RMB mil)	2005A	2006A	2007A	2008A	2009A	2010F	2011F	2012F
sh and bank balances	33.7	69.7	90.5	75.5	195.7	161.0	146.7	159.1
Pledged deposits	26.5	9.2	18.9	25.2	45.1	42.6	49.9	58.4
rade receivables	160.8	188.9	276.7	312.2	404.1	376.8	423.6	495.5
Other receivables	39.5	49.3	53.6	101.4	44.2	64.1	72.0	84.2
nventories	29.6	54.1	151.1	209.5	210.1	208.1	229.2	264.3
Land rights	0.1	0.5	0.5	0.5	0.5	0.7	1.6	1.6
Total Current assets	290.2	371.7	591.3	724.2	899.8	853.3	923.1	1063.1
Property, plant, equipment	29.1	58.6	93.7	91.7	93.8	111.0	112.8	109.9
and rights	4.4	19.1	18.4	17.9	17.4	35.2	56.8	55.2
Intangibles	2.5	2.2	1.9	1.6	1.3	1.0	0.7	0.4
eferred tax assets	0.0	0.3	0.4	4.4	4.7	4.7	4.7	4.7
Total Non-current assets	36.0	80.1	114.4	115.6	117.1	151.9	175.0	170.2
Total Assets	326.2	451.8	705.8	839.9	1016.9	1005.2	1098.1	1233.3
Trade payables	(141.6)	(165.1)	(302.3)	(361.4)	(387.7)	(355.0)	(416.0)	(486.5)
her payables	(11.0)	(13.4)	(34.7)	(69.0)	(64.8)	(63.9)	(74.9)	(87.6)
Short-term bank loans	(45.0)	(77.0)	(131.0)	(141.5)	(218.1)	(182.0)	(147.0)	(131.0)
come tax payable	0.0	(1.2)	(3.6)	(2.6)	(4.9)	(7.5)	(9.7)	(13.8)
Total Current liabilities	(197.6)	(256.8)	(471.6)	(574.5)	(675.6)	(608.4)	(647.6)	(718.8)
ong-term bank loans	0.0	(30.0)	(33.0)	(20.0)	(25.0)	(25.0)	(15.0)	0.0
Deferred tax liability	0.0	0.0	0.0	(0.3)	(0.7)	(0.7)	(0.7)	(0.7)
Total Non-current liabilities	0.0	(30.0)	(33.0)	(20.3)	(25.7)	(25.7)	(15.7)	(0.7)
Total Liabilities	(197.6)	(286.8)	(504.6)	(594.8)	(701.2)	(634.1)	(663.2)	(719.5)
mon stock	(27.2)	(27.2)	(27.2)	(27.2)	(27.2)	(27.2)	(27.2)	(27.2)
Share premium	(35.3)	(35.3)	(35.3)	(35.3)	(35.3)	(35.3)	(35.3)	(35.3)
rrency translation reserve	0.2	0.4	0.2	0.0	0.0	0.0	0.0	0.0
General reserve	(8.6)	(12.6)	(16.4)	(21.4)	(29.3)	(35.3)	(35.3)	(35.3)
etained earnings	(51.1)	(83.4)	(112.2)	(147.4)	(203.6)	(245.1)	(298.6)	(364.5)
Total Common equity	(122.0)	(158.0)	(190.9)	(231.3)	(295.4)	(342.8)	(396.4)	(462.3)
inority interest	(6.6)	(7.0)	(10.2)	(13.8)	(20.3)	(28.4)	(38.5)	(51.6)
Total Equity	(128.6)	(165.0)	(201.2)	(245.1)	(315.7)	(371.2)	(434.9)	(513.8)
Total Equity and Liabilities	(326.2)	(451.8)	(705.8)	(839.9)	(1016.9)	(1005.2)	(1098.1)	(1233.3)
Diluted book value/share RMB¢	0.37	0.48	0.58	0.70	0.90	1.04	1.20	1.41
Diluted tangible asset value RMB¢	0.36	0.47	0.57	0.70	0.89	1.04	1.20	1.40
Diluted book value/share SG¢	0.07	0.10	0.12	0.14	0.18	0.21	0.24	0.28
Diluted tangible asset value SG¢	0.07	0.10	0.12	0.14	0.18	0.21	0.24	0.28
Key Ratios	**2005A**	**2006A**	**2007A**	**2008A**	**2009A**	**2010F**	**2011F**	**2012F**
Gross gearing	0.61	0.63	0.71	0.71	0.69	0.63	0.60	0.58
Net gearing	0.52	0.61	0.69	0.68	0.65	0.59	0.56	0.54
Debt ratio	0.00	0.16	0.15	0.08	0.08	0.07	0.04	0.00
Assets to sales ratio	1.35	1.17	1.26	1.10	1.35	1.30	1.21	1.16
Total receivable days	303	224	215	197	217	208	199	199
Trade payables days	294	210	244	222	256	235	239	243
Inventories days	61	69	122	129	139	138	132	132
Cash turnover	7.1	5.6	6.2	10.2	3.9	4.8	6.2	6.7
Total assets turnover	1.4	1.2	1.3	1.1	1.3	1.3	1.2	1.2
Common equity turnover	0.5	0.4	0.3	0.3	0.4	0.4	0.4	0.4
Trade payables/order book	0.6	0.7	0.6	0.5	0.5	0.5	0.5	0.5
Pledged deposits/total order book	0.11	0.04	0.04	0.03	0.06	0.06	0.06	0.06
Total loans/order book	0.18	0.44	0.33	0.22	0.32	0.29	0.19	0.13
Valuation	**2005A**	**2006A**	**2007A**	**2008A**	**2009A**	**2010F**	**2011F**	**2012F**
Price/Earnings (X)	N/M	N/M	N/M	N/M	7.26	6.89	6.09	4.96
Price/Book (X)	N/M	N/M	N/M	N/M	1.58	1.36	1.18	1.01
Price/Tangible book (X)	N/M	N/M	N/M	N/M	1.59	1.36	1.18	1.01
Price/Cashflow from Operations	N/M	N/M	N/M	N/M	6.59	6.95	4.70	5.18
Dividend yield	N/A	N/A	N/A	N/A	N/A	4.36%	4.93%	6.05%
Number of shares (million)	329.000	329.000	329.000	329.000	329.000	329.000	329.000	329.000

e: Sunpower, Phillip Securities Research

Ratings History

Sunpower Group Ltd

Rating	Date	Closing price (S$)	Fair value (S$)	Remarks
Buy	11 August 2010	0.285 @ 12h30	0.460	Initiation

Phillip Research Stock Selection Systems		
		Share price may exceed 10% on the upside over the next 3 months, however longer-term outlook remains uncertain
	BUY	>15% upside from the current price
	HOLD	-10% to 15% from the current price
	SELL	>10% downside from the current price
	TRADING SELL	Share price may exceed 10% on the downside over the next 3 months, however longer-term outlook remains uncertain
	We do not base our recommendations entirely on the above quantitative return bands. We consider qualitative factors like (but not limited to) a stock's risk reward profile, market sentiment, recent rate of share price appreciation, presence or absence of stock price catalysts, and speculative undertones surrounding the stock, before making our final recommendation	

Important Information

This publication is prepared by Phillip Securities Research Pte Ltd., 250 North Bridge Road, #06-00, Raffles City Tower, Singapore 179101 (Registration Number: 198803136N), which is regulated by the Monetary Authority of Singapore ("**Phillip Securities Research**"). By receiving or reading this publication, you agree to be bound by the terms and limitations set out below.

This publication has been provided to you for personal use only and shall not be reproduced distributed or published by you in whole or in part, for any purpose. If you have received this document by mistake, please delete or destroy it, and notify the sender immediately. Phillip Securities Research shall not be liable for any direct or consequential loss arising from any use of material contained in this publication.

The information contained in this publication has been obtained from public sources which Phillip Securities Research has no reason to believe are unreliable and any analysis, forecasts, projections, expectations and opinions (collectively, the "**Research**") contained in this publication are based on such information and are expressions of belief of the individual author or the indicated source (as applicable) only. Phillip Securities Research has not verified this information and no representation or warranty, express or implied, is made that such information or Research is accurate, complete, appropriate or verified or should be relied upon as such. Any such information or Research contained in this publication is subject to change, and Phillip Securities Research shall not have any responsibility to maintain or update the information or Research made available or to supply any corrections, updates or releases in connection therewith. In no event will Phillip Securities Research or persons associated with or connected to Phillip Securities Research, including but not limited its officers, directors, employees or persons involved in the preparation or issuance of this report, (i) be liable in any manner whatsoever for any consequences (including but not limited to any special, direct, indirect, incidental or consequential losses, loss of profits and damages) of any reliance or usage of this publication or (ii) accept any legal responsibility from any person who receives this publication, even if it has been advised of the possibility of such damages. You must make the final investment decision and accept all responsibility for your investment decision including but not limited to your reliance on the information, data and/or other materials presented in this publication.

Any opinions, forecasts, assumptions, estimates, valuations and prices contained in this material are as of the date indicated and are subject to change at any time without prior notice.

Past performance of any product referred to in this publication is not indicative of future results.

This report does not constitute, and should not be used as a substitute for, tax, legal or investment advice. This publication should not be relied upon exclusively or as authoritative without further being subject to the recipient's own independent verification and exercise of judgment. The fact that this publication has been made available constitutes neither a recommendation to enter into a particular transaction nor a representation that any product described in this material is suitable or appropriate for the recipient. Recipients should be aware that many of the products which may be described in this publication involve significant risks and may not be suitable for all investors, and that any decision to enter into transactions involving such products should not be made unless all such risks are understood and an independent determination has been made that such transactions would be appropriate. Any discussion of the risks contained herein with respect to any product should not be considered to be a disclosure of all risks or a complete discussion of such risks.

Nothing in this report shall be construed to be an offer or solicitation for the purchase or sale of any product. Any decision to purchase any product mentioned in this research should take into account existing public information, including any registered prospectus in respect of such product.

Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report, may provide an array of financial services to a large number of corporations in Singapore and worldwide, including but not limited to commercial / investment banking activities (including sponsorship, financial advisory or underwriting activities), brokerage or securities trading activities. Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report, may have participated in or invested in transactions with the issuer(s) of the securities mentioned in this publication, and may have performed services for or solicited business from such issuers. Additionally, Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report, may have provided advice or investment services to such companies and investments or related investments as may be mentioned in this publication.

Phillip Securities Research or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report may, from time to time maintain a long or short position in securities referred to herein, or in related futures or options, purchase or sell, make a market in, or engage in any other transaction involving such securities, and earn brokerage or other compensation in respect of the foregoing. Investments will be denominated in various currencies including US dollars and Euro and thus will be subject to any fluctuation in exchange rates between US dollars and Euro or foreign currencies and the currency of your own jurisdiction. Such fluctuations may have an adverse effect on the value, price or income return of the investment.

To the extent permitted by law, Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report, may at any time engage in any of the above activities as set out above or otherwise hold a interest, whether material or not, in respect of companies and investments or related investments which may be mentioned in this publication. Accordingly, information may be available to Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report, which is not reflected in this material, and Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited to its officers, directors, employees or persons involved in the preparation or issuance of this report, may, to the extent permitted by law, have acted upon or used the information prior to or immediately following its publication. Phillip Securities Research, or persons associated with or connected to Phillip Securities Research, including but not limited its officers, directors, employees or persons involved in the preparation or issuance of this report, may have issued other material that is inconsistent with, or reach different conclusions from, the contents of this material.

The information, tools and material presented herein are not directed, intended for distribution to or use by, any person or entity in any jurisdiction or country where such distribution, publication, availability or use would be contrary to the applicable law or regulation or which would subject Phillip Securities Research to any registration or licensing or other requirement, or penalty for contravention of such requirements within such jurisdiction.

Section 27 of the Financial Advisers Act (Cap. 110) of Singapore and the MAS Notice on Recommendations on Investment Products (FAA-N01) do not apply in respect of this publication.

This material is intended for general circulation only and does not take into account the specific investment objectives, financial situation or particular needs of any particular person. The products mentioned in this material may not be suitable for all investors and a person receiving or reading this material should seek advice from a professional and financial adviser regarding the legal, business, financial, tax and other aspects including the suitability of such products, taking into account the specific investment objectives, financial situation or particular needs of that person, before making a commitment to invest in any of such products.

Please contact Phillip Securities Research at [65 65311240] in respect of any matters arising from, or in connection with, this document.

This report is only for the purpose of distribution in Singapore.

Contact Information

Singapore
Research

Chan Wai Chee
CEO, Research
+65 6531-1232
yebo@phillip.com.sg

Lee Kok Joo, CFA
Head of Research
REITS, Strategy
+65 6531-1685
leekj@phillip.com.sg

Alfred Low
Investment Analyst
Telecom, shipping, property
+65 6531-1793
alfredlowjh@phillip.com.sg

Magdalene Choong, CFA
Investment Analyst
US Equities
+65 6531-1791
magdalenechoongss@phillip.com.sg

Joshua Tan
Economist
US, Singapore, China
+65 6531-1249
joshuatan@phillip.com.sg

Phua Ming-weii
Technical Analyst
+65 6531-1735
phuamw@phillip.com.sg

Toh Wei Kiong
Investment Analyst
Land transport, Construction
+65 531-5440
tohwk@phillip.com.sg

Jasmine Lee
Investment Analyst
CPO, Water
+65 6531-1229
jasmineleews@phillip.com.sg

Derrick Heng
Investment Analyst
Defence & Aerospace
+65 6531-1221
derrickhengch@phillip.com.sg

Regional Member Companies

SINGAPORE

Phillip Securities Pte Ltd
Raffles City Tower
250, North Bridge Road #06-00
Singapore 179101
Tel : (65) 6533 6001
Fax : (65) 6535 6631
Website : www.poems.com.sg

HONG KONG

Phillip Securities (HK) Ltd
11/F United Centre
95 Queensway, Hong Kong
Tel : (852) 2277 6600
Fax : (852) 2868 5307
Website : www.poems.com.hk

THAILAND

Phillip Securities (Thailand) Public Co Ltd
15/F, Vorawat Building
849 Silom Road
Bangkok Thailand 10500
Tel : (622) 635 7100
Fax : (622) 635 1616
Website : www.poems.in.th

MALAYSIA

Phillip Capital Management Sdn Bhd
B-2-6 Megan Avenue II
12 Jalan Yap Kwan Seng
50450 Kuala Lumpur
Tel : (603) 2166 8099
Fax : (603) 2166 5099
Website : www.poems.com.my

CHINA

Phillip Financial Advisory (Shanghai) Co. Ltd
No 550 Yan An East Road,
Ocean Tower Unit 2318,
Postal code 200001
Tel: (86-21) 51699200
Fax: (86-21) 63512940
Website: www.phillip.com.cn

JAPAN

PhillipCapital Japan K.K.
Nagata-cho Bldg.,
8F, 2-4-3 Nagata-cho,
Chiyoda-ku, Tokyo
Tel : (81) 03 3666 2101
Fax : (81) 03 3664 0141
Website : www.phillip.co.jp

UNITED KINGDOM

King & Shaxson Capital Ltd
6th Floor, Candlewick House
120 Cannon Street
London EC4N 6AS
Tel : (44) 207 426 5950
Fax : (44) 207 626 1757
Website : www.kingandshaxson.com

FRANCE

King & Shaxson Capital Ltd
35 rue de la Bienfaisance
75008 Paris
T: (33) 1 456 33100