

Equity Capital Investment in China's Energy Efficiency Sector

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Introduction

This report has been prepared as part of the UNF/ESMAP-sponsored “Three Country Energy Efficiency Project,” jointly implemented by the World Bank, UNEP and URC. The goal of the full project is to significantly increase investments in the energy efficiency (EE) sectors of China, India and Brazil. The purpose of this paper is to outline the current role of equity finance in China’s EE sector, and more specifically within the newly emergent group of companies referred to as energy management companies (EMCs). These companies are typically referred to as energy service companies (ESCOs) in most parts of the world. The growth of the ESCO business model, both in China and abroad, has supported the implementation of large numbers energy efficiency projects within the commercial and industrial sectors, and has led to significant savings in energy and energy costs, and reductions in CO₂ emissions and other pollutants.

This report addresses the current levels and sources of equity investment employed thus far in China’s EE sector, the models of investment participation, the potential future sources, both domestic and foreign, and the likely drivers of future investment. Information for this report was gathered via communications with representatives from various organizations including some of China’s EMCs, venture capital investment firms, China’s Energy Management Company Association, and domestic and international consulting organizations. It has also gathered information from various reports and publications and internet websites.

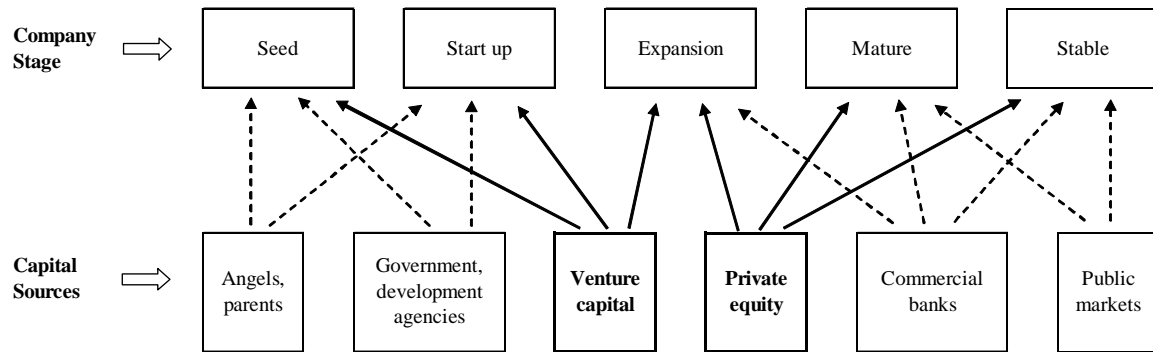
Venture Capital and Private Equity Investment in China

Equity investment in energy efficiency projects in China is quite large. A sample group of seventeen EMCs that have received loan guarantees through the World Bank / GEF sponsored China Energy Efficiency Project had total equity of RMB 3.2 billion in 2002. Since most of the new EMCs at that time were in the first year or two of their operations, it is assumed that most the equity was start-up capital and that a small but growing proportion is growth equity. As the sample group covers only 17 of the estimated 100 EMCs across the country, it is estimated that actual total equity investment is potentially much larger. A majority of this capital, however, has come from third party enterprises, and not from equity investment funds. Developing an accurate picture of third party corporate investments in EMCs is difficult to perform. Equity fund investment, while relatively easier to track, has been limited in the sector. Given the privacy of corporate investment in EMCs, this report is focused mainly on the activities of equity funds in the sector – and it uses the term “private equity” to refer to equity fund capital.

The scale of overall venture capital (VC) and private equity investment in China is large and growing. VC investment alone was over \$990 million in 2003, double 2001 levels. However, the volume that has found its way towards energy efficiency and other “environmental” sectors to date has been very limited.

For clarity purposes, the following diagram is provided to illustrate in a general sense the typical sources of capital investment at various stages during the life cycle of a company or industry. This report is focused on a sector that is populated for the most part with companies that are in the “seed” and “start up” stages, with perhaps a very small number

of companies that could be categorized as being within the “expansion” stage. The equity sources under review include what is referred to as “venture capital” (VC), which is targeted toward very early stage, entrepreneurial companies, and “private equity,” which is directed toward companies that have established at least an initial track record of operational success. Venture capital investors typically demand a higher level of expected return, given the higher level of risk undertaken.



Venture capital investments in China in 2003 totaled nearly US\$1 billion, almost doubling the roughly US\$520 million level of two years prior¹. Of the total capital invested between 2001 and 2003, via some 180 VC firms, only 2% was directed toward “environmental protection” companies, while the vast majority was directed toward the semiconductor, telecommunications, and information technology sectors. More specifically, over the three year period some US\$40 million was directed toward seventeen companies in the “environmental protection” sector. Of that, US\$22 million was from domestic sources and invested in fifteen companies, while the balance of US\$18 million was foreign sourced and invested in two enterprises. Included among the foreign funded VC firms were the Beijing-based China Environment Fund and the International Finance Corporation. More specific yet, within the pool of capital that was directed toward “environmental” companies in 2003 less than US\$2 million was invested in the “energy savings” sector¹.

VC investment (US\$ mn)	2001	2002	2003
Total	518	418	992
Environmental Protection industry	5	25	10
Energy Savings sector	na	na	2

Note: Energy Savings sector data unknown for 2001 and 2002.

Private equity investment in China reportedly totaled US\$1.7 billion in 2003, and reached US\$1.2 billion in the first half of 2004. It is also reported that private equity funds raised US\$340 million of new capital during 2003 for investment in China and some US\$380 million in the first half of 2004². (It is not clear that these numbers are fully exclusive of above noted VC investments.) Here again, these funds have been largely directed toward the high technology sectors. Ironically, the overall returns on private equity invested in China in recent years have not been particularly strong. The World Bank for example has estimated that the returns on private equity invested in China over the past ten years have

¹ Data from Zero 2 IPO material presented at the October 2004 New Ventures Investment Forum.

² Asian Venture Capital Journal, 2004

averaged only around 3%. The return potential in the energy efficiency sector, on the other hand, are realistically very strong by comparison.

Issues in Attracting Equity to the EMC Sector

Returns from EMC investment projects to date have been exceptionally strong. Investments via the three pilot EMCs established in 1998 under the World Bank / GEF Energy Conservation Project have generated average returns of better than 20%. The capacity for further profitable energy efficiency projects is significant. Accordingly, this is a sector that is to a large extent “lying in wait” for a time when investment capital is more readily available to the sector.

A variety of barriers currently stand in the way of a more widespread implementation of EMC projects in China. Among these is the lack of available bank and investor finance. Looking closer, there are a range of reasons for the shortfall in finance availability. Bank lending to the sector is restricted due, among other factors, to: 1) the lack of familiarity with the EMC business model among bank lenders, 2) high level of risk aversion among lenders, especially given the lack of familiarity, 3) the limited business track records of many new EMCs, 4) limited balance sheet strength of new EMCs, 5) the relatively small size of projects, 6) credit risk associated with many potential project host enterprises, and 7) a limited willingness among host enterprises to finance their own EE projects.

Looking at equity capital, there are a number of reasons for the restricted inflows to the sector to date. These include the following.

- 1) Many new EMC management teams are not yet able to articulate to potential equity investors a business plan that establishes a clear vision and a strategy for growth. Only a very small number of EMCs are able to clearly define the technologies and services they provide, the client base they are targeting, and how these translate to a sustainable growth strategy. Additionally, many new EMCs have not demonstrated sufficiently transparent financial and accounting systems required to instill confidence in the minds of potential equity investors. This report suggests that as part of the EMCA training activities that a technical assistance program be developed that focuses on the requirements of equity investors in the sector, and provides guidance to new EMCs on how to attract equity and/or hybrid-equity finance. Such a program could cover various topics including business plan development, issues of financial and accounting transparency, and investor marketing and presentation skills.
- 2) The investment community has limited knowledge of the existence of the sector. Conversations with domestic financial and business consultants suggest this is the case. Further, some of the same issues that are stifling the flow of bank lending to the sector, mainly the lack of understanding of the energy performance contracting (EPC) business model, are also influencing the flow of equity. Part of the research for this report also involved communications with global companies that invest in, develop and operate combined heat and power (co-generation) plants in China. It was found that within this group there is also a lack of awareness of the presence and potential of the evolving EMC industry in China. Here it is suggested that perhaps the China EMC Association might consider partnering with various investor forums to facilitate

the development of platforms for increased communications between EMCA membership and the investment community. A potentially good organization to consider working with might be New Ventures group, discussed below.

- 3) The lack of bank finance available to the sector. As equity investors become more aware of the sector their interest will be moderated by the lack of significant bank lending to the sector. Equity investors typically require that potential investee companies are able to access further bank lending following the inflow of new equity, in order to provide leverage to bottom line growth potential.
- 4) EMC investment opportunities are typically small-scale in comparison to other sectors and tend to be project based and therefore not scalable. The small size of investment opportunities also means that relative transaction costs are higher.
- 5) As with any enterprise in need of capital, the alternative of raising equity as opposed to bank debt, typically results in management ceding some level of operational control to outside shareholders. It also dilutes the share of growing profits to original shareholders. While many EMCs would be happy to raise funds any way possible, some have shown a reluctance to invite outside shareholders.

What Investors Need

Currently it is difficult to find EMCs in China with a combination of 1) a good and proprietary technology, 2) skilled and levelheaded management, and 3) financial competence and transparency. Many VC funds are willing to work with potential EMC investee companies if they possess 1) and 2). In fact, it is the role of VC funds to work with start-up companies to help them develop financial and accounting skills before making an ownership investment. A case in point, which is addressed further below, is the equity investment by Tsinghua Venture Capital (THVC) Company in Beijing PowerU Technology (BPU). THVC worked with BPU for more than a year, helping to raise their business planning and financial and accounting skills prior to investing in the company. They like the technology BPU possesses (high efficiency cold storage heating and cooling technology for which they hold a patent), and thought management had a strong vision for the company. Ultimately they invested in BPU, purchasing a 37% share of the company, but not before they spent a lot of time together. And once they did make the investment, they assisted BPU to hire a new chief financial officer.

Discussions with the small number of equity fund investors knowledgeable of the EMC sector indicate that the willingness to invest in the sector is limited, though not completely absent. Indications are there are perhaps 4-5 EMCs in China at present that could be considered for possible equity investment.

Capital Structures of New EMCs

Looking at the balance sheets for the group of EMCs that have received bank lending with the support of the World Bank / GEF supported China National Investment & Guarantee Company (I&G) loan guarantee fund it can be seen the capital structures span a wide range. The group does not appear to show any discernible trend toward an optimal range of capital structures. It appears rather that balance sheet structures have evolved on the basis of the financing options available to each EMC on an individual basis. Of this

group of 18 EMCs, equity as a percentage of the total capital structure ranged from less than 15% to over 90% as illustrated in the table below. Company sizes also vary greatly as can be seen from the asset bases which range from below 15 million RMB in size to over 4 billion RMB. It is interesting to note that some of the EMCs have shown significant growth in their asset bases, which implies growth in new project investment supported by either the inflow of new investment capital, growth in income, or both.

EMC		Assets RMB (thou)	Debt/ (D+E)	Equity/ (D+E)
Beijing Oasis Dehan Environmental Protection Center	2001	110,070	73%	27%
	2002	207,830	86%	14%
Zhonghua Hongda Energy Equipment Co., Ltd.	2000	26,590	75%	25%
	2001	94,740	61%	39%
	2002	181,900	55%	45%
Beijing PowerU Science and Technology Co.	2000	200,000	19%	81%
	2001	191,730	20%	80%
	2002	211,820	13%	87%
Shenzhen City Jialida (Coolead) Industry Co., Ltd.	2000	16,590	7%	93%
	2001	19,350	16%	84%
	2002	25,290	9%	91%
Sichuan Xinde Development Co., Ltd.	2002	720,000	58%	42%
	2003	800,000	48%	53%
Beijing Shenwu Thermal Energy Tech Co., Ltd.	2001	3,750,080	59%	41%
	2002	3,672,470	57%	43%
	2003	4,091,790	60%	40%
Guizhou Huitong Huacheng Office Building Technology Co.	2001	26,820	26%	74%
	2002	42,530	18%	82%
Beijing Zhongfucheng Investment Co., Ltd.	2001	72,520	33%	67%
	2002	113,370	31%	69%
	2003	148,580	22%	78%
Hongneng Century Energy Science & Technology Developi	2002	9,880	35%	65%
	2003	14,310	32%	68%
Dongying Shengdong Machinery Co., Ltd.	2002	50,580	38%	62%
	2003	113,250	48%	52%
	Aug-04	156,490	55%	45%
Chengdu Stone Automated Engineering Co., Ltd.	2001	1,933,070	62%	38%
	2002	2,524,170	67%	33%
	2003	4,052,540	69%	31%

Source: Loan guarantee project appraisal documents. Note: Total liabilities were used in the derivation of debt to equity ratios.

Public information of the initial sources of equity to these EMCs is difficult to come by. However, it can be said in general that equity investment in these EMCs has typically come from one or more of three sources: large parent corporations, wealthy individuals, and to a very limited extent, specialized equity investment organizations. In the case where there is a strong parent company that sponsors the EMC, initial seed capital, typically comes from the parent. Where there is no parent, start up capital has often come from a small number of individuals.

Success Story

To date, only one example has been identified wherein a private equity fund made an

investment in an EMC in China. The fund has been the China Environment Fund 2002, managed by Tsinghua Venture Capital Co., Ltd. (THVC), and the recipient enterprise was Beijing PowerU Technology Company (BPU). The two originally came into contact with each other through their mutual participation in an EMC Association sponsored training activity. BPU management maintained an ongoing dialogue, and held regular meetings with THVC management over the course of nearly a year before the investment was made.

THVC manages private equity funds whose goal it is to generate strong financial returns while at the same time achieving positive environmental and social benefits. Among the funds it manages are the China Environment Fund (CEF) 2002 and the recently capitalized China Environment Fund 2004. Contributors to CEF 2002 include Leading Environmental Services & Solutions Limited (LESS) of Mumbai, India, and the Asian Development Bank, which contributed US\$15 million and US\$10 million respectively to the fund. THVC is presently in the process of establishing the CEF 2004, which will have a similar investment target profile to CEF 2002. As of August 2004 THVC has raised US\$15 million for the fund. It hopes to raise another US\$15 million.

The CEF 2002 is invested in six Chinese “environmental” companies, one of which is Beijing PowerU Technology Co. The Fund invested roughly US\$2 million in PowerU for a 37% stake. The other chief shareholder is the company’s founding partner.

PowerU had also obtained a form of quasi-equity project financing in 2001 from a Hong Kong merchant bank that is headquartered in Shenzhen in mainland China. It obtained a pledge of RMB 20 million in support of a project with the Guilin Airport. Under the terms of the agreement, 90% of the revenue stream from the project (after the host share) went to the investment bank over the first three years. In years 4-5 the split changed to 45% for bank and 55% to BPU, and in the remaining years (this was a ten year project) the cash flow went to BPU. It is understood, though not with certainty however, that this type of financing has been restricted since that time by new bank regulations from the central government.

Separately, it is also understood that Shell China has been in contact with PowerU management to discuss their business profile. This suggests that potential investors are indeed keeping an eye on the development of the sector.

Given the positive experiences of PowerU in obtaining equity and other forms of financing, this report concludes that a combination of 1) the establishment of a coherent vision and a strong growth strategy, 2) financial and accounting transparency, 3) the possession of a proprietary technology, 4) the formation of long term relationships with banks and investors, together with 5) persistence and patience, that China’s new EMCs can successfully obtain both equity and bank financing, without necessarily having the strong backing of a parent or otherwise related large third-party enterprise.

Other Potential Equity Sources

As part of the preparation for this report, a list of other potential equity investors to the EE sector has been identified. The New Ventures group is an organization associated with the Washington DC-based World Resources Institute that sponsors events aimed at

bringing together environmental entrepreneurs with investors. In October 2004 they hosted their 3rd annual New Ventures China Investor Forum in Beijing. Shell China, Citigroup and the Leadership for Environment and Development (LEAD) have co-sponsored these forums over the past three years. In addition to enterprise managers, government agency representatives and development organizations, a variety of VC firms have presented at these conferences. The equity funds identified are listed in the table below. Also included in the table is Asia-Pacific Energy Technology Services Company, which reportedly has invested equity in China's energy efficiency sector (though this has not been verified).

VC Funds	Scope	Representative	Phone	Email
Tsinghua Venture Capital Co., Ltd.	Manages the China Environment Funds.	Ye Dong	86-10-6270-5938	webmaster@cefund.com
Azure International Technology & Development (Beijing) Ltd.	Advisory and investment services to sustainable energy sector in China.	Chris Raczkowski	86-10-8447-9338	info@azure-international.com
New Margin Ventures	US\$100 million fund focused in IT, health science, material and environmental sectors.	Tao Feng		
VC China Ltd. (Weixin)	Venture capital investment and advisory services.	Liu Manhong	86-10-8256-2676	manniem@vcchina.com
GVT Capital Management	Partners with VC China.	Greg Nagler	86-10-8256-2676	gnagler@chinavcmc.com
China VCMC (Beijing Hezhi) Investment Management Co., Ltd.	Beijing-based foreign joint venture fund focused in part on clean energy and energy efficiency.	Mannie Liu	86-10-6255-8231	info@chinavcmc.com
Innofund - Innovation Fund for Small Technology Based Firms	Chinese government loan and equity fund. 6% directed toward energy and energy savings technology.		86-10-6397-2359	innoweb@innofund.gov.cn
Light Power Venture Capital Co., Ltd.	Based in Wuhan - Hubei Province.	Guo Wenjun		gwj666@etang.com
Zero 2 IPO	Investment advisory services only	Su Shaowen	86-10-68-71-7156	Shaowen@zero2ipo.com.cn
Asia-Pacific Energy Technology Services Co., Ltd.	Provides products and services to power and distribution companies.		852-2562-6736 (HK)	www.jbspare.com

Other industry conferences in the area of environment and waste management have also been held in China. Specifically, in November 2004 the Shanghai Environmental Protection Industry Association sponsored the 2004 Pollutec China Conference. The event attracted a range of Chinese and foreign technology companies that provide technology solutions to China's environmental problems. However, only one equity investment fund, Tsinghua Venture Capital, participated in the event.