

# The Huaibei power plant and its implications for the Chinese BOT market

Nigel Smith <sup>a,\*</sup>, Hao Zhang <sup>b</sup>, Yiran Zhu <sup>c</sup>

<sup>a</sup> School of Civil Engineering, Construction Management Group, School of Civil Engineering, University of Leeds, Leeds LS2 9JT, UK

<sup>b</sup> Accounting and Finance Division, Leeds University Business School, University of Leeds, Leeds LS2 9JT, UK

<sup>c</sup> Home Product Ltd., Leeds LS17 4BQ, UK

Received 20 December 2002; received in revised form 4 March 2003; accepted 12 September 2003

## Abstract

This paper is a longitudinal case study, from 1992 to the present, of a Chinese Build-Operate-Transfer, (BOT), project, the Huaibei power plant. The Huaibei project, unlike the better known Sharejio B and C or Laibin B power plant BOT projects which were undertaken solely by foreign contractors, is one of the first projects based on the Sino-Foreign Cooperative Joint Venture model (CJV) involving largely Chinese state-owned enterprises (SOEs). For this type of CJV it is interesting to note that revenues from tax-savings and labour-cost savings become significant for the SOE organisations. By studying how the Huaibei ownership has evolved over the last 10 years and how the main CJV participants have coped with the problems which have arisen, the case not only illustrates the well-known difficulties associated with Chinese BOT projects but suggests possible ways for the project manager to overcome or mitigate these difficulties.

© 2003 Elsevier Ltd and IPMA. All rights reserved.

*Keywords:* BOT; Infrastructure projects; Joint venture; Power plant; China

## 1. Introduction

Recent research findings from studies of various aspects of Chinese Build-Operate-Transfer (BOT), projects suggest that a considerable untapped potential for investors exists alongside the prospect of considerable difficulties [1,2]. These aspects include the market structure for BOTs in China, the critical success factors in the tendering process of Chinese BOTs, and the risk characteristics of Chinese BOT projects. However, these studies are limited because they focused solely on BOTs undertaken by wholly foreign-owned enterprises (WFOE) such as Sharejio “B” and “C” and Laibin “B” power project BOTs, and because they assume that a BOT project is used for the primary purpose of raising capital and/or to introduce new technologies. The *International Journal of Project Management* has published 11 papers over the last 10 years, all of which

concentrated on the problems and project management of WFOE BOT projects in China, (see Appendix A).

This paper presents an in-depth longitudinal case study, from 1992 to the present, of a non-WFOE Chinese BOT, the Huaibei power plant. The Huaibei project is based on the Sino-Foreign Cooperative Joint Venture model (CJV) and was set up mainly to benefit the state-owned enterprises (SOEs), under Chinese legislation regarding taxation and employment. It is believed that the Huaibei project can shed light on possible financial and management approaches appropriate to the de facto institutional set-up in China. Despite problems of commercial confidentiality, the paper is sufficiently detailed to provide an insight into how the ownership structure of the Huaibei project evolved over the years and how the main participants managed the problems that arose. Overall the case study not only illustrates the problems, for example, the ill-defined legal framework, the under-developed regulatory framework and other factors faced by all BOT projects in China but also indicates potential opportunities to off-set or to mitigate some of those difficulties.

\* Corresponding author. Tel.: +44-113-233-2301; fax: +44-113-233-2243.

E-mail address: [n.j.smith@leeds.ac.uk](mailto:n.j.smith@leeds.ac.uk) (N. Smith).

## 2. Chinese BOTs: an overview

After more than 20 years of rapid and sustained economic growth, the dated energy and transport infrastructure systems in China are being pushed close to their limits. Modern infrastructure is crucial in sustaining the current economic growth and in facilitating further reforms but it requires huge investment. In February 1998, the Chinese government announced the funding of a 750 billion USD infrastructure development programme. Eighty-one new power plants of at least 2000 MW each are envisaged by 2010, while 35,000 km of expressways and Class 1 highways and 112,000 km of new provincial and country roads are envisaged over a 30-years period [3].

In the longer term, the government's "strategic" policy to develop China's barren western regions, for example, the "Three Gorges" Dam, the Tibet railway, coupled the growing need for environmental infrastructure (waste management and water re-processing/conservation) and the need for transport infrastructure (light-rail transits, airports, and other modes) in China's grossly overpopulated eastern regions suggest high demands for infrastructure investment projects and consequently bright prospects of profitable BOTs [4]. While the Chinese government does not have the necessary capital to finance even a small fraction of these projects, the proportion that would be procured on a BOT basis depends on whether the enabling legislation and the inherent incentives are sufficient to suit the characteristics of the Chinese market.

There is evidence to suggest that the Chinese government has recognised the need to attract foreign investment into domestic infrastructure projects. The Chinese government has recently classified foreign infrastructure investments into the "encouraged" as opposed to "restricted" and "prohibited" categories [1]. There are a number of policies aimed at attracting BOT investors. Foreign investment projects enjoy significantly lower taxation levels. The Chinese government has also recognised the impact of the currency convertibility problem on foreign investors, and has designed several alternative methods for foreign investors to exchange RMB for foreign currency [4].

In general, a foreign investment may be set up as one of the three project vehicles: Equity Joint Venture (EJV); CJV; and wholly foreign-owned enterprises (WFOE). These vehicles are usually established as limited liability companies. The Wholly Foreign-Owned Enterprise Law, enacted by the Ministry of Foreign Trade and Economic Cooperation (MOFTEC) on December 12, 1990, regulates the setting up, running, dissolution, and other matters of WFOEs. The EJVs and CJVs are governed, respectively by the Sino-Foreign EJV Law and the Sino-Foreign CJV Law, in use since the 1980s. However, a specific BOT law has yet to be enacted [1].

The high degree of risk inherent in a typical BOT project is generally recognised and is partially dependent upon the size and investment horizon of the BOT project and increases in working in environments with little or no legal framework such as China. Thus, the effective application and early incorporation of a risk management process is critical to making a successful investment in China. Tiong [5] found that "political" risks were the most difficult to handle while "technical" risks were the easiest to handle; this was confirmed even on projects incorporating innovative technologies in China. Wang and Tiong [6,7] identified possible risks associated with Chinese BOT projects in different infrastructure sectors including: a party's reliability/credibility; changes in law; force majeure; delay in approval; expropriation; and corruption.

## 3. Methodology

This paper adopts the case study method as the research method of choice. The case method, according to Yin [8,9], is an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between the phenomenon and context are not clearly evident. Thus, the case study method, relative to other research methods works better in addressing the "How" or "Why" questions, as opposed to the "How Much" or "How Many", questions especially when the phenomenon is not well-known; and mainly qualitative sources of data are used. The Huaibei project satisfies these criteria. In addition the BOT concession is still in operation and the case study could be supplemented at a future date.

## 4. The case of Huaibei BOT

The Huaibei Guoan Power Plant (Huaibei), is situated in Anhui Province in the middle-east of China, and was first proposed as a CJV BOT between three Chinese parties and two foreign parties. The negotiations started in 1992. The BOT Concession contract was formally signed in 1996. In the beginning, the project company was owned by three Chinese parties: China State Development and Investment Co. (SDIC), Anhui Electricity Development Co. (AEDC), Huaibei Electricity Development Co. (HEDC) and two foreign parties: A-A Dynamic Investment Limited (AA) and Cogen Technologies China Ltd. (Cogen). SDIC is a branch of the Central Government and is thus closely linked to the Central Bank in particular. The Anhui Provincial Government owns and controls AEDC. The Huaibei Municipal Government (under Anhui provincial jurisdiction) owns and controls HEDC. In other words, SDIC, AEDC and HEDC are SOEs at the central,

Table 1  
Introduction to the parties involved in this project

Company name	Company introduction	Location of registration
Chinese State Development and Investment Co. (SDIC)	Investment company which belongs to central Chinese government	Beijing, PR China
Anhui Electricity Development Co. (AEDC)	Listed electricity company belongs to Anhui provincial government	Anhui, PR China
Huaibei Electricity Development Co. (HEDC)	Small electricity company belongs to local city government	Anhui, PR China
A-A Dynamic Investment Limited (AA)	Foreign subsidiary of China Trust Investment Co.	British Virgin Islands, UK
Cogen Technologies China Ltd. (Cogen)	American Electricity Investment Co.	Cayman Island, UK
Shibang Investment Ltd.	A Hong Kong Investment Co.	Hong Kong, China
Huangshan Investment Co. (HIC)	Hong Kong Investment Co., but belongs to Anhui provincial government	Hong Kong, China

provincial, and municipal level. The exact percentages of ownership are: 35% (SDIC), 25% (AEDC), 15% (HEDC), 12.5% (AA), and 12.5% (Cogen).

While the Huaibei BOT remains a CJV BOT in 2003, both the ownership and ownership composition have changed. In particular, the Cogen share, 12.5%, of the ownership has changed hands more than once. HEDC sold all its shares to AEDC and left the project. The current ownership composition is: SDIC (35%), AEDC (40%), AA (12.5%), and HIC (Huangshan Investment Co.) (12.5%). In 1998, Cogen sold its 12.5% shares to Shibang Investment Ltd., whose shares were later purchased by HIC in 2001. The details of each party are shown in Table 1.

#### 4.1. Summary of features of Huaibei BOT

Prospective parties to the BOT did not go through a tendering process but conducted extensive negotiation. Construction began at the beginning of 1997 and the project was operational by the start of 2000. The total investment in this project is 333 million USD, with registered capital accounting for about 30% of the total investment at 100 million USD (Appendix B). The concession period is 19 years including the construction period.

It is useful to compare the Huaibei BOT with the much better known Laibin “B” BOT. Both projects are similar in a number of ways: both are coal-fired power plants; both are of similar size (Huaibai:  $2 \times 300$  MW; Laibin B:  $2 \times 350$  MW); both are of similar concession length (Huaibai: 19 years; Laibin B: 18 years); both went into construction in 1997 and were operational in 2000. However, the two projects differ significantly in organisational structure. Huaibai is a CJV with SOEs and was awarded without competitive tendering whereas Laibin B was a WFOE concession with a competitive selection process. The contract documentation for Laibin B was similar to power plant BOT projects in many parts of the world, indicating that the Chinese government had been successful in attracting foreign and international organisations to gain experi-

ence of working in China. Huaibei is one of the first SOEs CJV projects and will demonstrate the effectiveness of the internal incentives for SOEs to participate in this form of procurement.

#### 4.2. Negotiation (1992–1996)

In 1992 AA approached the Anhui Provincial Government to express its willingness to be part of this CJV BOT project. It is of interest to note that AA is actually an offshore (and thus foreign) subsidiary of a Chinese privately owned company (China Trust Investment Co.). Negotiations were conducted between AA and three Chinese SOEs, SDIC, AEDC and HEDC. AA brought in Cogen, the sole non-Chinese, foreign party with considerable experience in infrastructure projects. The result was that AA and Cogen equally divided the 25% foreign ownership equally between them. According to the interviews with AEDC staff, the negotiation was very drawn out. When disputes arose, no one would talk or leave the table and silence was kept for hours. It took a total of 4 years before the formal BOT joint venture contract was finally signed.

##### 4.2.1. Motivation

The Chinese government now permit indigenous organisations investing in infrastructure projects in China to be accorded Foreign-funded Enterprises (FFE) status, which in turn offers tax saving opportunities (See Appendix C). The FFE status of the Huaibei BOT could save about 7 million RMB (700,000 USD) per year for the first 6 years of the project for the Chinese parties. The labour saving was more implicit in the form of a flexible labour policy not normally available to Chinese SOEs. Historically, all power plants in China are owned by the state and the staffing levels are excessively high and inflexible. Whereas a power plant of Huaibai's size ( $2 \times 300$  MW) would have to retain a minimum of 1200 employees as state-owned plant, it would only need to retain 400 employees as a FFE plant. The labour cost saving is about 6 million RMB (600,000 USD) per year for the Huaibei BOT.

The SOEs confirmed that cost saving, rather than the lack of finance or the desire for foreign technology was the primary if not the sole purpose for participating in the Huaibei BOT project. This is consistent with the foreign participation being kept to a bare minimum (i.e. 25%) required to qualify for the FFE status and all the materials and equipment needed for the construction and running of the power plant being procured domestically. In fact, the capital raised from two foreign partners (AA and Cogen) was not used. It was put into a USD bank account, which was later used to pay initial monies to the foreign partners based on the guaranteed rate of return.

#### 4.2.2. Guarantees

The Anhui Provincial Government granted a number of guarantees to the foreign parties of the Huaibei BOT. Initially, the foreign parties sought a guarantee of 15% Internal Rate of Return, IRR, over the 19 years period. As a 15% IRR would impose a rather rigid set of high and guaranteed cash flows per year over the 19 years, it was later agreed in negotiations that the guarantee would be an average of 15% per year over the 19 years project life. Second, the government guaranteed the conversion and remittance of RMB revenue from the BOT project based on a given USD–RMB exchange rate. Third, the government allowed an extension of concession period should any force majeure incident cause delay/suspension in operation. Fourth, the government guaranteed a Fuel Supply Agreement with Huaibei Fuel Co. and a Power Purchase agreement with Anhui Power Industry Bureau, thereby largely removing the market risk.

In addition, the project contract showed that 70% of the total investment came from Chinese bank loans and 30% from owners' capital and none from foreign bank loans. When asked why the foreign parties did not contribute to the task of loan financing, both AA and Cogen explained that they did introduce possible foreign lenders to the project but that the Chinese parties considered the interest rate demanded by international lenders to be too high.

#### 4.3. Construction (1996–2000)

The construction period lasted 4 years, which was longer than planned. The delay reduced the operation period within the overall concession period. A delay in authorising two instalments of a bank loan was the main cause of the construction delay. AA and Cogen also revealed that the subcontracting of the project did not go through any tendering processes and was based on the preferences of AEDC and HEDC. This was acceptable to the foreign parties, AA and Cogen, who were assured by the 15% guarantee.

##### 4.3.1. Domestic ownership changing hands

HEDC sold its 15% shares to its provincial counterpart AEDC in 1999. The explanation given for this was

that AEDC was unhappy with SIDC (owned by the Central Government and connected to the Central Bank) being the largest shareholder for a number of reasons, but in particular over the delays in the arrival of the loan instalments and potential conflicts of interest. As an agency of the Anhui Provincial Government, AEDC was possibly reflecting the feelings of the Provincial Government. In order to reduce the Central Government's control and strengthen the Provincial Government's Control, the AEDC bought out HEDC's share. As result, AEDC established a dominant position in the project.

##### 4.3.2. Foreign ownership changing hands

Cogen withdrew from the project in the construction stage and sold its 12.5% share to Shibang Investment Co., a company in Hong Kong, in 1998. It was suggested that Cogen, faced with the Asian financial crisis in general and the construction delay in Huaibai BOT project in particular, might have lost confidence in the BOT market in China. However, Cogen defended their decision by suggesting that the early projections indicated that the likely rate of return in the initial years would not be more than 7% or 8% per year and that the rates of return in later years would have to be improbably high to meet an overall average of 15% per year over the 19 years.

#### 4.4. Operation (2000–2015)

The project has been operational since 2000. However despite the contractual agreements, the Huaibai BOT project company has not been able sell electricity at the agreed price. A reduction in market demand in the short-term put a downward pressure in the price of electricity and placed a strain on the provincial government's guarantees. Currently, the Huaibai BOT can only make 70% of the "guaranteed" sales at 90% of the "guaranteed" price. At these rates it is likely that the project generated losses in the first two years. There is no evidence that AEDC, as agency of the provincial government insisted, or took legal action, on the "guaranteed price" provision of the Power Purchase Agreement with the Anhui Power Industry Bureau, another agency of the provincial government. It would appear that given the ill-defined legal framework in China, any dispute between two government agencies would have to be resolved internally by the provincial government. The result is that the return made to the two foreign shareholders, at roughly 7–8%, came out of the fiscal expenditure of the provincial government.

##### 4.4.1. Foreign ownership changing hands once more

In 2001, Huangshan Hong Kong Investment Co. (HIC) purchased from Shibang Co. its 12.5% share of Huaibai BOT project company. Registered in Hong Kong by the Anhui provincial government, Huangshan Hong Kong Investment Co. is technically a foreign

concern but in effect a subsidiary of AEDC. This transaction accomplished four tasks. First, it kept the CJV status of the Huaibei BOT and thus the FFE status intact. Second, it further strengthened the Provincial Government's control of the project. Third, it made AEDC by far the most dominant partner in relation to SIDC and AA. Forth, since Huangshan Co. ultimately belongs to the Anhui provincial government, the transaction should make the guarantees between these two parties more flexible.

Shibang was willing to sell its shares for two possible reasons. First, Shibang wanted to leave the project and invest in other opportunities. It had lost confidence in the guarantees. In the first year of operation, the return rate of this project for foreign investors was only 7%, and electricity market was bearish in the short term. Second, the price offered by Huangshan was attractive.

#### 4.4.2. Discussion of concession period extension

A discussion on whether to extend the 19 years concession period is continuing between AEDC and AA. Given that the Provincial Government can no longer keep its guarantees on electricity price and quantity, AEDC doubts whether Huaibei BOT project can provide the necessary return rate in future years to the foreign parties in order make up for low return rate in the initial years. Therefore, it tried to persuade the foreign investors, mainly AA, to extend concession period.

The AA Co., which remains as the only independent foreign investor, currently does not agree to a concession period extension. AA insists that the provincial governments should keep their guarantee with respect to the average 15% per year return for foreign investors inside the 19 years period. There is no evidence to suggest that this guarantee is underwritten by any outside party, such as an insurance company but the Concession Agreement does contain a range of penalty fines should any contractual provisions not to be honoured.

## 5. Discussion and conclusion

This study of the Huaibei BOT project reveals elements particular to the participation of Chinese SOEs in a Sino-Foreign CJV that had not been recognised before. The following discussion relates to important aspects of the Huaibei case study and considers the implications for project management.

The Huaibei BOT was a conventional project where Chinese SOEs participation was motivated largely by the opportunity for cost saving from specific taxation and labour regulations only possible with FFE status (i.e. the presence of foreign investors). However, the benefits from these cost savings is only one reason why the Anhui provincial government was ready to grant what appears to be overly generous guarantees to the

foreign parties. Another reason is the lack of an established legal/regulatory framework in China. The FEE system appears to be a suitable incentive to encourage indigenous Chinese organisations to participate in BOT projects, although the financial drivers are significantly different to WFOE BOT projects.

Given that a functional legal/regulatory framework cannot be established overnight or for sometime, the Huaibei experience is thus suggestive of the future direction of BOTs in China. In the face of the conflicts between SIDC (of the Central Government) and ADEC (of the Provincial Government) and unfavourable returns in initial years, foreign ownership changed hands several times; Cogen and Shibang both decided to leave the project. The only "foreign" party remaining committed to the project (i.e. AA) is actually an offshore subsidiary of a Chinese privately owned company and this arrangement may not be suitable for genuinely foreign counterparts.

The Chinese government may wish to consider exploiting the untapped source of indigenous private funds for its infrastructure investment needs by according it the same tax-cost and labour-cost saving benefits available to both Sino-Foreign CJVs and solely Chinese CJVs. Chinese companies may have better risk-taking, information gathering, and inter-personal skills within the Chinese context, especially when it comes to dealing with complex government agency structures at both the central and provincial level. Equally, Chinese companies and investors may be more adaptive, than foreign companies, to the BOT environment in China and open to more flexible approaches without the need for unrealistic "guarantees". The project management of the interfaces between central government, provincial government and indigenous banks would require particular preparation and planning.

The implication that the BOT market in China could be aided by increasing domestic participation does not mean that foreign companies should not collaborate in different ways. As in many other countries, future projects may require public and private funding necessitating a joint SPV (Special Purpose Vehicle) between foreign companies, privately owned Chinese companies, as well as SOEs. This kind of collaboration, if feasible, would reduce both the risks and the transaction costs inherent in many BOT projects, facilitate the introduction of new technology and/or adoption of modern management techniques and thus enable more infrastructure investment to take place. As a by-product, this kind of collaboration would also facilitate the continuing "marketisation" of the Chinese economy in general and the process of SOEs reform in particular.

To conclude, the demand for infrastructure in China is huge. Whether or not the BOT market will flourish in China depends on whether the BOT mechanism can be project managed to act as an incentive to both Chinese and foreign organisations.

### Appendix A. International Journal of Project Management

Papers relating to Chinese projects and case studies.

1. Volume 13, 1995, No. 5 October, p. 303
2. Volume 15, 1997, No. 2 April, p. 67
3. Volume 15, 1997, No. 2 April, p. 73
4. Volume 15, 1997, No. 5 October, p. 313
5. Volume 17, 1999, No. 4 August, p. 257
6. Volume 17, 1999, No. 6 December, p. 377
7. Volume 18, 2000, No. 1 February, p. 69
8. Volume 18, 2000, No. 5 October, p. 307
9. Volume 19, 2001, No. 4 May, p. 195
10. Volume 20, 2002, No. 6 August, p. 413
11. Volume 20, 2002, No. 8 November, p. 601

### Appendix B. Summary of Huaibei BOT

Project features	Details
Project location	Huaibei City, Anhui Province, PR China
Project description	Construction of a coal-fired 2 × 300 MW power plant
Project cost	Approximately 333 million USD
Investment Parties	<ul style="list-style-type: none"> <li>• Chinese State Development and Investment Co. (SDIC)</li> <li>• Anhui Electricity Development Co. (AEDC)</li> <li>• Huaibei Electricity Development Co.</li> <li>• A-A Dynamic Investment Limited (AA)</li> <li>• Cogen Technologies China Ltd. (Cogen)</li> <li>• Shibang Investment Ltd.</li> <li>• Huangshan Investment Co. (HIC)</li> </ul>
Contract type	Joint Venture Build-operate-transfer Project
Concession agreement	19 years concession period including construction
Power Purchase Agreement	19 years, with Anhui Power Industry Bureau
Fuel Supply Agreement (FSA)	19 years, with Huaibei Fuel Co.
Consultants	China International Project Consulting Co. (CIPCC) South-Western Electricity Research Institute (SWRDI)
Equity	Total equity is estimated at 30% of total investment, approximately \$ 100 million USD
Tender process	None
Stages of BOT project status	Design Period (1992–1996) Build Period (1996–2000) Operate Period (2000–2015) Transfer Date (2015) the project operational for since 2000

### Appendix C. Tax policies [4]

Government Tax Policies for Foreign-funded Enterprises (FEE) investing infrastructure projects in China

1. FFEs only pay income tax at the rate of 15% if they are engaged in energy projects, transportation projects, ports, wharves, and other projects endorsed by the state in coastal open economic zones, special economic zones, economic and technological development areas, or in the areas assigned by the States Council
2. Sino-Foreign joint equity ventures engaged in ports and wharves for an operation term of 15 years or more can get full exemption on income tax in the first five profit-earning years, and a 50% reduction in income tax for a further five years upon approval by the local taxation authorities
3. FFEs engaged in airports, ports, wharves, railroad, highways, power stations, coal mines, or water conservation works in Hainan Special Economic Zone with an operation term of 15 years or more, can get full exemption of income tax in the first five profit-earning years, and a 50% reduction in income tax for a further five years upon approval by the Hainan provincial taxation administration

4. Fees engaged in ports, wharves, railroad, highways, or power stations, in Pudong New Area, Shanghai, with an operation term of 15 years or more, can get full exemption of income tax in the first five profit-earning years, and a 50% reduction in income tax for a further five years upon approval by the Shanghai provincial taxation administration
  5. Full exemption of import duties will be granted to FFEs for importing machines, equipment, and raw materials needed in the construction of infrastructure projects
  6. FFEs can get a refund of 40% of the paid taxes if they reinvest their profits in the Chinese infrastructure projects
- 

## References

- [1] Kumaraswamy MM, Morris DA. Build-Operate-Transfer-type procurement in Asian Mega projects. *J Construct Eng Manage* 2001;(March/April):93–102.
- [2] Zhang X, Kumaraswamy MM. BOT-based approaches to infrastructure development in China. *J Infrastruct Syst* 2001;(March): 18–25.
- [3] Hyder Consulting Ltd., Facilitating the Build-Operate-Transfer modality in the highway sector. Financial Report, No. 2649, Hong Kong; 1998.
- [4] Shen L, Lee RKH, Zhang Z. Application of BOT system for infrastructure projects in China. *J Construct Eng Manage* 1996;(December):319–23, in Chinese.
- [5] Tiong LK. Risks and guarantees in BOT tender. *J Construct Eng Manage* 1995;121(2):183–7.
- [6] Wang SQ, Tiong LK. Evaluation and management of political risks in China's BOT projects. *J Construct Eng Manage* 2000;(May/June):242–54.
- [7] Wang SQ, Tiong RLK, Ting SK, Chew D, Ashley D. Evaluation and competitive tendering of BOT power plant project in China. *J Construct Eng Manage* 1998;(July/August): 333–41.
- [8] Yin RK. *The case study research: design and methods*. Newbury Park, CA: Sage Publications; 1989.
- [9] Yin RK. *Application of case-study research*. Newbury Park, CA: Sage Publications; 1993.