objectivecapital

objective corporate research

February 2007

Environmental Engineering Sector
Listing: London AIM

Tinci Holdings (TNCI.L)

By 2010 all Chinese coal-fired power plants will be required to be retro-fitted with FGD technology. As one of the top 10 players in the FGD installation market Tinci is well placed to exploit the current demand for FGD technology in China.

Objective Capital Limited
Token House
11-12 Tokenhouse Yard
London EC2R 7AS
Tel:+44-(0)870-080-2965
Fax: +44-(0)870-116-0839
US toll-free: 1-888-802-7215
editor@objectivecapital.com

Corporate: www.ObjectiveCapital.com
Research: www.ObjectiveCapital.co.uk

Initiation Research

Contents

I certify that this report represents my own opinions.

David Lloyd Owen
Analyst
0870 080 2965
david@objectivecapital.co.uk

About Objective Capital:

Objective Capital is a leading UK provider of objective corporate research.

We offer investors two levels of insight – a regular survey of the complete small and mid-cap segment, highlighting those stocks where attention should be focused, and our detailed institutional-quality, sponsored research coverage. As always, our research doesn't offer trading recommendations or advice but an objective uptodate assessment of the prospects, and risks, of the companies we cover.

While the companies we cover sponsor our research, it is always written on behalf of our readers. It is of the essence of our research that it be **independent** — that is opinions, estimates and valuations be solely those of Objective's analyst; **objective** — that is based upon verifiable data; and **transparent** — that is based upon explicit assumptions.

Our research complies with all FSA recommendations as may arise out of CP172 and CP176, i.e., that it be independent of any broking or trading interests; and CP205, i.e., that it comply with standards for objectivity.

Key Points

Tinci is a Chinese environmental engineering company specialising in flue gas desulphurisation (FGD) systems, which reduce sulphur dioxide (SO_2) emissions from coal-fired power stations and large industrial boilers. By 2010 all Chinese coal-fired power plants must be retrofitted with such technology. The stock has been oversold on the news that 2006 profits fell, largely due to intensified competition and higher material prices.

46.5p

Price as at 2 February 2007

KEY POINTS

- **Unprecedented demand for FGD technology:** Air pollution is forcing the Chinese government to reduce SO2 emissions. By 2010, China's existing 4,600 coal-fired power plants will be required to be fitted with FGD technology as will all new plants from 2010. Current FGD projects for power plants built or in progress are just 10% of the forecast 2010 coal-fired capacity; China has the capacity to build only 600 such facilities annually. Strong market conditions are set to prevail for at least the next decade.

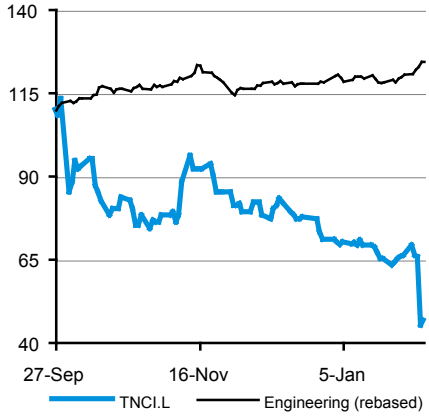
- **An emerging presence in the FGD market:** Tinci is one of the leading ten FGD companies in China and offers a broad range of technologies for various industrial and power generation clients. These technologies are used under licence from major Western players or have been developed by the company. Having started operations in 2002, its track record is relatively short, yet the company has secured a series of major orders in 2005 and is trading profitably.

- **Location and expansion plans:** Tinci is based in Guangdong Province, next to Hong Kong, the country's major export zone. This is an attractive market, in addition, since 2005 Tinci has been gaining orders in Northern China, tapping into the growth of Tianjin, Beijing and Shanghai. Tnic understands that the FGD market will not grow forever, so it is seeking to become a broadly-based environmental technology company.

- **Reason for listing:** Tinci came to AIM in July 2006, seeking to raise £10.0 million (RMB142 million) before expenses, principally to increase its capacity to undertake medium to large FGD projects, and also including £1.6 million for enhancing R&D work and £1.4 million for general working capital. In the event, Tinci raised £2.05m gross, that is £1.09 million net of expenses.

- **Disappointing trading in 2006:** On 1 February, Tinci disclosed that profits fell in 2006, despite higher sales. It attributed this to intensified competition for large Chinese projects; increased prices for copper, an important raw material; a build-up in overheads to enable national sales; lower margins in last year's principal contracts, which used licenced rather than in-house technology; and the costs of continuing obligations on AIM. The company is responding by focussing on small-to-medium scale projects that will allow it to raise margins using proprietary processes. Tinci was marked down on the statement to 46.5p. Our core valuation prices the stock at 62p.

Price chart – TNCI.L



Our valuation

Scenario	Value
Market share maintained	£32.6m
Tinci emerges as top 3 player:	
- Base case	£45.3m
- Best case	£59.8m
- Pessimistic case	£41.8m

Company details

Quote	
Shares - London AIM	TNCI.L
Hi-Lo last 12-mos. (p)	132 - 42
Shares issued (m)	52.95
Fully diluted (m)	52.95
Market Cap'n (£m)	24.6
Stockbroker:	*Zimmerman Adams*
	www.zimmint.com
	Corporate Synergy
	www.CorporateSynergy.co.uk
Nominated advisor:	*Zimmerman Adams*
	www.zimmint.com
Financial PR:	*Shared Value*
	www.sharedvalue.net
Website:	*www.tinciholdings.com*

Miles Saltiel
Research Director
miles@objectivecapital.co.uk
0870 080 2965

Analysts:
David Lloyd Owen
david@objectivecapital.co.uk

Overview

The Tinci Sanhe Environmental Engineering Company Limited ('Tinci') was founded in 2001 and is an environmental engineering company primarily involved in developing and installing flue gas desulphurisation (FGD) systems for reducing sulphur dioxide (SO_2) emissions from coal-fired power stations and large industrial boilers. The company also has experience in denitrification technologies for similar applications and the treatment of industrial effluents. Tinci aims to become a broadly based environmental engineering company using in-house and licensed technologies offering industrial and utility clients products and processes for ameliorating emissions and recovering raw materials.

Regional strategy: Tinci is based in Guangzhou City, the capital of Guangdong which is the economic powerhouse of South East China and linked by the Pearl River to Shenzhen and Hong Kong. Tinci has identified three areas in China where it aims to concentrate its marketing efforts: Southern China, from its established base in Guangdong, where it is the market leader; Northern China and South West China. Tinci is concentrating on those areas which are subject to Acid Rain and SO_2 emission abatements. From 2002 to 2004, all contract gains were in Guangdong. In 2005-06, 50% of contract awards have been in North China.

Coal as an energy source and FGD market driver: In 2003, 79% of China's energy came from coal-fired power plants and even by 2020, coal will still account for 55-72% of all energy generation, with its usage growing by 2.2-3.3% per annum. Power generation is the chief source of sulphur dioxide (SO_2) emissions, which is causing serious damage to human health and the economy. A series of Regulations and Acts have been passed to limit ambient SO_2 pollution and halt the increase of acid rain, covering 175 cities in 29 regions. All new power plant needs to be equipped with flue gas desulphurisation (FGD) technology to curb these emissions and all extant plant are to have FGD fitted by 2010. In addition, large coal-fired industrial boilers also have to fit FGD technology. The market for FGD technology in China will be worth RMB 150-200 billion (£10bn-£14bn) between 2006 and 2012 and RMB15 billion per annum after this.

With some 4,600 coal fired power plants and large industrial boilers needing FGD retrofitting and an estimated market FGD capacity of 600 units per annum, the Chinese FGD market's size and growth in the next five to eight years is effectively assured. After this, the market will be driven by new power plants and the need to refit and repair extant FGD facilities. Increasing competition from new coal combustion techniques (especially gasification processes), along with the development of alternative sources of energy and a belated drive to improve energy efficiency

mean that the market for FGD systems will fall from perhaps 2015 and increasingly so from 2020. The same will apply to NO_x systems, although the need to service these systems every three to five years gives some degree of revenue retention. Tinci aims to respond to this through developing its wastewater and waste management systems and to offer a broad capability in pollution abatement technologies. This is not a material concern for the next few years, but tangible evidence of this strategy emerging will be needed from 2008-2010.

Tinci's technologies: Tinci currently uses four FGD technologies to address opportunities across these markets:

[1] TFGD Double Alkali Process – developed in-house by the company.
Small to medium plants, especially industrial boilers

[2] Wet Limestone-Gypsum – non-exclusive transferred technology from Ducon Group (USA)
Large power plants

[3] Niro Spray Dryer Absorber – non-exclusive licence with GEA Niro (Denmark)
Medium to large plants

[4] Konstant Circulating Fluidized Bed (KCFB) – non-exclusive licence with Ragar (Germany)
Small to medium plants

Young and fragmented market: There are some 30 companies active in the sector in China but only 20 of these had managed to gain a tender contract by the end of 2005. This is a young and fragmented market, with acquisition opportunities for companies seeking further expansion. Although Tinci has only been actively operating in the FGD market since 2002, the company's move into profitability during 2005 through gaining three major orders has made it a major player in Guangzhou and it is now amongst the top ten FGD companies in China.

Potential for further share issues. In July 2006, Tinci raised £2.05 million gross (£1.09 million net of issue expenses). If Tinci needs to introduce new products in the short term (for example, if the need to develop other markets becomes more urgent than currently envisaged) it may need to make strategic purchases of companies, technologies or plant. Such purchases may exceed Tinci's cashflow and call for a further share issue.

Valuation

China's FGD market is experiencing a period of rapid growth as the Chinese government moves to tackle its severe air pollution problems. This period is likely to last for the next five to eight years as the retrofitting of existing plants is completed. After this, the market will stabilise around demand from new power plants and the need to refit and repair FGD facilities. In the long run we expect that increasing competition from new coal combustion techniques will reduce demand for FGD systems particularly after 2020. The same will apply to NO_x systems, although the need to service these systems every three to five years gives some degree of revenue retention.

We have valued Tinci on a discounted cashflow basis under a range of scenarios. For investors, the key points to address in valuing Tinci are its capacity to take advantage of the retrofitting bonanza and in the longer term how effective it will be in diversifying into water treatment and other pollution abatement technologies.

In our core scenario we have assumed:

- Strong demand and capacity constraints will allow gross margins to be broadly maintained until 2010 with modest softening as the market stabilises around the lower activity levels associated with demand from new plants in the post 2010 period;
- Tinci will undertake its first $DeNO_x$ contract during 2008;
- Tinci will successfully broaden its offering as the market for FGD technologies matures and then declines in the post 2015-2020 period.

Assuming Tinci maintains its current ranking in the industry our valuation suggests a value of £32.6m (or on a PE basis around 7.8x prospective earnings). Our scenarios suggest that if Tinci lives up to its goal of becoming one of the leading players in the industry in the post-2010-2015 consolidation phase it could ultimately be worth around £45.3m, or on a PE basis 10.1x - 12.7x prospective earnings.

Tinci valuation scenarios

Tinci emerges as a top 3 player in the consolidation period post 2010-2015

Best Case Scenario	**RMB**	**£**
Equity Value (m)	915.7	**59.8**
Value per share	17.29	1.13
- Implied Forecast P/Sales	*1.4*	
- Implied Forecast EV/EBIT	*11.2*	
- Implied Forecast PE	*12.7*	

Key assumptions

- Current projects completed on time
- Gross margins impacted in 2006, partially recover
- Two medium FGD contracts during 2006, rising to seven in 2007 and nine in 2008
- One large FGD contract during 2007 and two in 2008
- Two $DeNO_x$ contracts starting in 2008

Core Scenario	**RMB**	**£**
Equity Value (m)	693.8	**45.3**
Value per share	13.10	0.86
- Implied Forecast P/Sales	*2.0*	
- Implied Forecast EV/EBIT	*11.4*	
- Implied Forecast PE	*12.7*	

Key assumptions

- Current projects completed on time
- Gross margins impacted in 2006, partially recover
- Two medium FGD contracts during 2006, rising to five in 2007 and eight in 2008
- One large FGD contract staring in 2007, one in 2008
- First $DeNO_x$ contract during 2008

Worst Case Scenario	**RMB**	**£**
Equity Value (m)	640.3	**41.8**
Value per share	12.09	0.79
- Implied Forecast P/Sales	*1.1*	
- Implied Forecast EV/EBIT	*9.1*	
- Implied Forecast PE	*10.1*	

Key assumptions

- Current projects completed on time
- Gross margins under continual pressure
- Two medium FGD contracts during 2006, rising to six in 2007 and seven in 2008
- One large FGD contract from 2008
- No $DeNO_x$ contracts gained before 2008

Tinci maintains it current share in the consolidation period post 2010-2015

	RMB	**£**
Equity Value (m)	499.1	**32.6**
Value per share	9.43	0.62
- Implied Forecast P/Sales	*1.4*	
- Implied Forecast EV/EBIT	*7.1*	
- Implied Forecast PE	*7.9*	

Key assumptions

- Current projects completed on time
- Gross margins maintained
- Four medium FGD contracts during 2006, rising to seven in 2007 and 10 in 2008
- One large FGD contract staring in 2006, one during 2007, one during 2008
- First $DeNO_x$ contract during 2008

See page 29 for detailed assumptions for each scenario

Comparatives

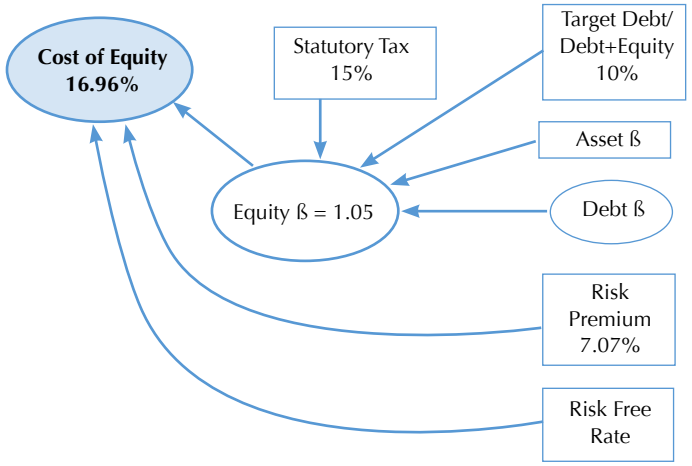
Company	**Code**	**Price**	**52 Week Hi-Lo**	**EPS**	**PE**	**Yield**
WH Kaidi Electr.	000939.SZ	8.59	6.15 - 9.92	0.36	23.9	1.46
Insigma Tech.	600797.SS	7.18	2.61 - 8.39	0.10	71.8	0.71
CQ Jiulong Elec.	600292.SS	5.13	3.18 - 5.30	0.13	39.5	3.69
SP Power Devl.	600795.SS	9.23	4.98 - 9.87	0.37	24.9	1.34
Fujian Longking	600388.SS	11.98	6.05 - 13.65	0.30	39.9	1.67
ZJ Feida Sci.	600526.SS	6.40	4.34 - 7.16	0.17	37.6	N/A
Tsinghua Tongfang	600100.SS	18.03	7.70 - 18.98	0.20	90.2	2.39
Simple Average					**46.8**	**1.9**

Valuation Summary (RMB m)[1]

Total expected operating value	**484.3**
Add: Cash and new funds raised	45.8
Total enterprise value	**530.1**
Less: Starting bank & other debt	31.0
Less: Traded debt	0.0
Less: Convertible debt	0.0
Less: Minorities	0.0
Total value for equity claims	**499.1**
Less: Warrants & options	0.0
Value attributable to equity holders	**499.1**
Oustanding shares (m)	53.0
Value per share (RMB)	9.43
Value per share (£)	0.62
- Implied Forecast P/Sales	*1.4*
- Implied Forecast EV/EBIT	*7.1*
- Implied Forecast PE	*7.9*

[1] see p. 27 for financial projections underlying valuation

Weighted Cost of Capital



WACC = 16.51%

Key Risks

Risks to the company's outlook not inherent in the nature of its activities

The Chinese market for environmental goods and services is almost entirely regulation driven. This in turn depends on the national and provincial State Environmental Protection Agencies ("SEPA") to enforce the applicable legislation. The SEPAs are poorly funded and there is considerable scope for conflicts of interest. Even so, the actual development of this market for industrial customers is growing strongly.

As the USA FGD market eases in 2006-07, there will be further competitive pressure from USA based companies for sales through their licensed operations in China. This may affect the large power plant segment of the market.

Tinci is competing against highly established and well regarded players in the solid waste management and industrial water treatment sectors. For example, Ondeo Degremont (Suez, France) has constructed water treatment plants serving over 120 million people in China, while the author has identified more than 15 companies from China, Singapore, France, Germany and the USA who are active in these markets in China.[1]

Corporate governance: As part of its admission to AIM, three non executive directors were appointed, two of whom are independent, along with the establishment of Audit, Investment and Remuneration Committees. The holding company is based in Hong Kong.

Tinci does not have exclusive use of the technology it is using in FGD markets: Tinci's agreement to use Ducon's wet limestone technology to tender FGD projects is not exclusive. In practice, Tinci is the sole user of the technology in China at present, but it is open to Ducon to licence other contractors, which would impair Tinci's position in the Chinese FGD market.

Company track record: Tinci has only been actively operating in its markets since 2002, making it one of the more recent entries into the FGD sector. During 2005 the company's move into profitability through gaining two major orders addresses these concerns, although none of these contracts have been completed.

[1] Owen (2005). *Pinsent Masons Water Yearbook*

Dollar exposure: The current policy of the Chinese government is to maintain the value of the Yuan against the US Dollar at least until 2008. Tinci imports approximately 40% of its requirement for FGD equipment. In 2005, total equipment purchases accounted for 37% of group revenues, making imported goods equivalent to 15% of revenues. Between 10% and 15% of 2006-08 revenues will be exposed to the US dollar. Once a tender has been won, there is a period of between one and two years during which the company incurs an exchange risk on imported equipment. A 10% depreciation of the Yuan against the Dollar would decrease operating profits by 4-6%.

Tinci's results are expressed in Sterling and therefore its reported earnings are subject to fluctuations in the value of the pound in relation to the Yuan. Balance sheet dates are used for translating Yuan figures into Sterling.

Dependence on major contracts: The company is exposed to the performance of a small number of major projects. During 2005, two major power plant contracts (Gansu Jingyuan 2nd Power Plant and Zhanjiang Power Plant) accounted for 45% and 34% of company revenues respectively and 34% and 14% of company gross profits respectively. Zhanjiang was 47% complete as of the end of June 2006, with phase 2 of Gansu 80% complete and 70% of phase 3 complete at that point. These two contracts accounted for 92% of group revenues during the first half. The Nanhai Power Plant contract represented 8% of revenues.

Technological risk: The Chinese environmental technology market is driven by the ability of systems to deliver a suitable level of performance for a given price. It is a market which is very receptive to innovation and there is a need for companies to be able to respond to such innovations if and when they occur.

Political & economic risk: While China offers enormous opportunities risk factors include weak financial and legal systems, perceptions over human rights and the potential for currency revaluation. In the long run, deep social inequalities and the mis-match of growing personal wealth and limited "political" freedom is an unpredictable brew. While, at least in the next decade, external measures such as bond yields suggest a so far benign interpretation of these issues, particularly since accession to the WTO, it is unclear how these factors will develop.

Tinci Holdings Overview

Tinci is an environmental engineering company primarily involved in developing, manufacturing and installing flue gas desulphurisation (FGD) systems for reducing sulphur dioxide (SO_2) emissions from coal-fired power stations and large industrial boilers. The company also has experience in denitrification technologies for similar applications and the treatment of industrial effluents. Tinci aims to become a broadly based environmental engineering company using in-house and licensed technologies offering industrial and utility clients products and processes for ameliorating airborne emissions, treating industrial wastes and recovering materials from industrial waste streams.

Company History

The Tinci Sanhe Environmental Engineering Company Limited ('Tinci') was co-founded by Mr Xu Jin-Fu (Tinci's Chairman), Ms Wang Keer (Tinci's General Manager) and Mr Shi Yao in August 2001. Tinci is based in Guangzhou, the capital of Guangdong Province and is close to Shenzhen and Hong Kong.

Tinci Holdings Ltd was incorporated in Hong Kong on 5 June 2006. On 14 July 2006, Tinci Holdings acquired the entire issued share capital of World International Investment Limited, a company registered in Hong Kong, in exchange for the issue of 49,995,000 ordinary shares of 1p in the company. World International itself owns the entire paid-up capital of Guangzhou Tinci Sanhe Environmental Engineering Co. Ltd.

In July 2006, the company was renamed Tinci Holdings and admitted to the LSE's AIM. Three non-executive directors (two independent) were appointed to a restructured board along with three executive directors. The company's share

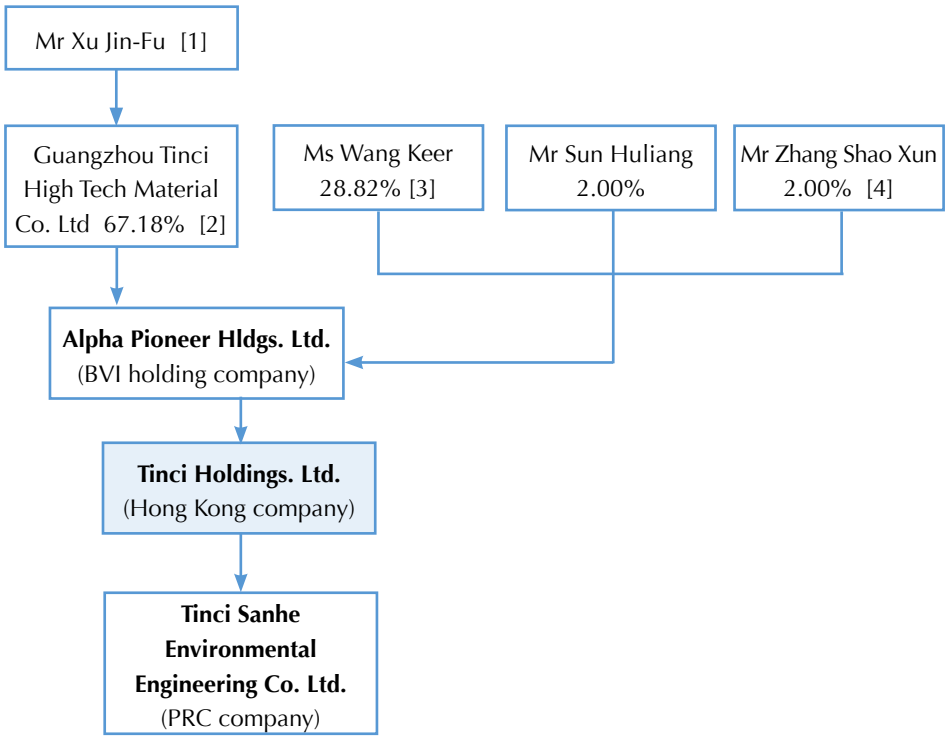
Shareholder and ownership structure

[1] Mr Xu co-founded Tinci Sanhe and has a controlling interest in Tinci High Tech Material

[2] Tinci High Tech Material owes Tinci Sanhe RMB14 million in net receivables

[3] Ms Wang co-founded Tinci Sanhe and has lent the company RMB560,000

[4] Mr Zhang owes Tinci RMB310,000 in receivables



Changes in shareholding structure

	Before Placing		After Placing	
	Number	%	Number	%
Sir David Brewer	–	–	21,428	<0.1
Xu Jinfu	21,807,000	43.6	21,807,000	41.2
Pan Wen Zhang	–	–	–	–
Wang Keer	9,813,000	19.6	9,813,000	18.5
Cheng Shifa	1,000,000	2.0	1,000,000	1.9
David Steeds	–	–	22,000	<0.1

Shares in issue	Million
Share capital prior to the placing	50.02
New shares issued	2.93
Enlarged share capital	52.95

capital is currently RMB 52.95 million after the share placing of 31 July 2006, when 2,928,613 new ordinary shares were placed at 70p per share, enlarging the shares in issue by 5.53%. Existing shareholders (including Mr Brewer) are locked in until 31 July 2007, this representing 94% of the enlarged share capital.

In 2002, Tinci commercialised the "NC5000 Double Alkaline Desulphurization" technique developed by Zhejiang University. The first of a series of small wastewater treatment engineering projects was gained in that year along with an industrial FGD project. In 2003, Tinci adopted the Spray Drying Absorption process developed by Niro A/S of Denmark (part of Germany's GEA), which has been used since the 1970s for industrial boilers and coal fired power plants. Further industrial FGD contracts were gained.

In May 2004, Tinci signed a Technology Transfer Agreement with Environeering Environmental Co (EEC, part of Ducon Group of the USA), to use its Wet Limestone-Gypsum FGD technology. During that year, ISO 9001 (quality management) and ISO 14001 (environmental management) certifications were gained. In October, Tinci gained its first power generation FGD contract. Further power FGD contracts were gained in 2004 and 2005. (See appendix).

Tinci & FGD

Tinci's four FGD technologies are as follows, in order of importance:

[1] TFGD Double Alkali Process ("TFGD") – wet technology

[2] Wet Limestone-Gypsum FGD Process ("Wet (EEC)") – wet technology

[3] Niro Spray Dryer Absorber Process ("Niro") – semi-dry technology

[4] Konstant Circulating Fluidized Bed (KCFB) – dry technology

These techniques are covered in the section describing the various FGD processes.

Management

67.2% of Tinci's equity is currently held by Guangzhou Tinci High-Tech Co Materials Ltd. A company controlled by Tinci's Chairman, Mr Xu. According to Tinci, this company's only role has been in the provision of funding through subscribing to the company's last financing round.

Mr Shi, one of the founding Directors left in October 2004 and his shareholding since bought out. He was responsible for introducing the NC 5000 process, which

the company now believes has been superseded by the TFGD process. Mr Shi has now set up his own company to market the NC 5000 technology.

Repayment of inter-company loans

Loans between Tinci and other members of the group have been paid off during the year. This principally included an interest-free loan to Guangzhou Tinci Hi-Tech Materials Co. Ltd ('GT'), a company whose controlling shareholder is Mr. Xu Jinfu, a Director and Chief Executive Officer of the company. At the start of 2006, Tinci was owed RMB 40.28 million by GT. This peaked at RMB 49.78 between February and April 2006. After total payments by Tinci of RMB 25.81 million and repayments of RMB 66.10 million between 1st January and 31st October 2006, these inter-company loans were fully repaid.

Market developments and responses

With the current surge in demand to retrofit FGD units, Tinci has noted several companies seeking to enter the market on the basis of price rather than track record. Tinci is avoiding bidding against these companies. Currently, some 80% of the FGD market is accounted for by retrofitting, which will remain the case until 2007-08.

In the meanwhile, the company is seeking to diversify its activities by emphasising wastewater treatment, waste gas disposal and waste recycling technology. In the next six months, Tinci expects to obtain a Grade A Certificate for Environmental Protection Facilities Qualification from the Chinese State Environmental Protection Administration. It is also moving into operations and management (O+M) and plans to obtain an O+M contract for the Meishan power plant FGD system in Guangzhou, which would generate revenues of RMB 6 million pa. A build-operate-transfer (BOT) project for Anhui Wanneng (two 125 MW units and one 600 MW unit) is also being bid for. Contracts for O+M and BOT would provide recurring revenue streams, which would help reduce volatility in the figures reported by the company. In the longer term, Tinci plans to develop O+M services for wastewater treatment plants and recycling facilities, again with the aim of developing more recurring revenues.

Increased construction costs

Project (RMB million)	Revised cost	Difference	2006 change
Jingyuan	158.58	4.21	3.60
Zhanjiang	234.10	15.19	11.10

Reporting of results

In the years 2003-05, the gross margins declared each year were based on budgeted gross margins, which were a fair reflection of the contract outcome. This policy had to be modified in 2006 because of unforeseen increases in the price of raw materials. In particular, the cost of copper was some RMB 12 million higher than anticipated due to the exceptional rise in copper prices at the time. Additionally, some RMB 7 million in extra design costs were incurred in the Zhanjiang project. As a result, construction costs for the two main projects have been RMB 19.4 million higher than expected.

Tinci believes that the rise in raw material costs has now been curbed. Company accounting policy is to use the lower of the budget and use actual gross margins as soon as it is clear that these are below budget.

While the market for large scale FGD projects has become more competitive, bid prices for small to medium contracts have remained stable. These have also been less affected by commodity price changes.

Company Location

Tinci is located at 1915 Wuyangxincheng Plaza, 115 Siyouxin Road, Guangzhou City, Guangdong Province. In September 2005, the company paid RMB12.9 million for the equivalent of a lease extending to 2044 on the 18th floor. Some 433 m2 of the 2,150 m2 floor-space is currently let to third parties on leases expiring by 2007, meaning that Tinci can expand its offices by 25% before needing to space elsewhere. Guangzhou is the capital of Guangdong which is the economic powerhouse of South East China and linked by the Pearl River to Shenzhen and Hong Kong. All marketing activities in Southern China are based in Guangzhou, while a separate team based in Beijing is responsible for developing the business in Northern China. After Tinci's placing, the new registered office is at: 10th Floor, Chiyu Bank Building, 78 Des Voeux Road Central, Hong Kong, with the company's operating offices unchanged.

Track record

Until the end of 2005 Tinci won all its tenders. In January 2006, Tinci tendered for five contracts, winning Xuzhou and Lineng Group, worth a total of RMB 87 million. No further tenders were won during the first half. Tender activity has picked up since July (see table on p. 14). However, the company has lost the Jiazuo AES (Henan) and Laibin power plant (Guangxi) bids, both of which it had seen as being winnable contracts.

Tinci aims to gain 2-3 large projects and up to approximately 10 small to medium sized projects per year from 2008 and hopes to gain 1-2 large projects and 'several' small to medium sized projects during 2007. This approach can generate annual revenues of between RMB500 million and RMB700 million. The company intends to tender for more small to medium sized projects using TFGD. Tinci regards its proprietary TFGD as a strong selling point for such projects..

Tinci Sanhe Business Development Progress

Municipality	Name of Project	Sector	Unit Size	Proposed technology	Project duration (months)	Contract value (est.) (RMB 000)	Type	Date of bid (estimated)	Contract / bid status
Henan	Faxiang Power	P	2×220T	TFGD	10	10,380	R	Jul/06	Construction under progress
Shandong	Jinling Thermoelectricity	I	2×130T	TFGD	6	7,900	R	Jul/06	Construction under progress
HuBei	Hubei Huansheng Ludian	I	2×240T	TFGD	8	6,420	R & E	Jun-05 / Jul-06	Second stage under progress
Henan	Jiaozuo Jinguan	I	2×135MW	Niro SDA	8-10	50,500	R	Sep/06	Gained, Nov-06
Henan	Jiaozuo AES	P	2×135MW	Niro SDA	8-10	55,000	R	Sep/06	Lost
Guangdong	Meishan Power plant	P		TFGD	Annually	8,500	O+M		In negotiation
Shanxi	Hejin power plant	I	2×200MW 2×50MW	TFGD	8-10	55,000	R / NB	Nov-06	"Probably win"
Guangxi	Laibin power plant	P	2×125MW	Ducon Wet FGD	16-24	56,000	R	Sep/06	Lost
Shanxi	Yangquan Yuansheng	P	2×220T	TFGD	8-10	15,000	NB	Oct-06	Awaiting final approval by client's management
Sichuan	Yibin Tianyuan	I	3×130T	TFGD	16-24	18,000	NB	Oct-06	"Tremendous possibility of cooperation"
Gansu	CNPC Lanzhou	I	2×130T 220T	TFGD	8-10	30,000	R	Nov-06	Tinci passed the feasibility study
Henan	Zhongyue Power	P	2×55MW	TFGD	8-10	15,000	R	Nov-06	Same shareholder as Henan Faxiang
Shandong	Lubei Chemical Plant	I	2×300MW	Ducon Wet FGD	16-24	120,000	NB	Early in 2007	Once the feasibility report approved the project will be started.
Shandong	Shandong Weiqiao	I	4×130MW 8×220MW 4×135MW	TFGD/ Ducon FGD	8-10	15,000	R	Sep/06	Tendered, commercial negotiation is undergoing
Anhui	Hefei 1st power plant	P	2×125MW + 600MW	Ducon Wet FGD	16-24	120,000	BOT	Nov-06	Two companies bidding
Beijing	Beibuwan power plant	P	2×300MW	Ducon Wet FGD	16-24	80,000	R	Nov-06	Following up, tend to bid
Yunnan	Qujing power plant	P	4×300MW	Ducon Wet FGD/ Ducon Mgo FGD	16-24	150,000	R	Nov-06	If Ducon Mgo FGD is to be used in the project, no tender procedure will be needed
Henan	Wanhe power plant	P	2×200MW	Niro SDA/ KCFB	8-10	55,000	R	Nov-06	Following up, tend to bid
Hunan	Sinopec Baling	I	2×220T	TFGD	8-10	15,000	R	Early in 2007	Following up, tend to bid
Shandong	Xiwang Group	I	3×130T	TFGD	8-10	18,000	R	Early in 2007	Following up, tend to bid
Anhui	Huaneng Ruijin	P	2×300MW	Ducon Wet FGD	16-24	70,000	NB	Early in 2007	Following up, tend to bid
Inner Mongolia	Fengtai power plant	P	2×300MW	Ducon Wet FGD	16-24	70,000	NB	Early in 2007	Following up, tend to bid
Henan	Sinopec Luoyang	I	2×50MW / 220T 25MW	TFGD	8-10	15,000	R	Early in 2007	Following up, tend to bid
Hebei	Sinopec Shijiazhuang	I	3×130T 220T	TFGD	8-10	20,000	R	Early in 2007	Following up, tend to bid
Liaoning	CNPC Liaoyang	I	2×100MW / 410T	RAGAR KCFB	8-10	30,000	R	Early in 2007	Following up, tend to bid
Zhejiang	Rongcheng Paper	I	1×220T	TFGD	8-10	70,000	NB	Early in 2007	Following up, tend to bid
Hunan	Yueyang Paper	I	1×530T	TFGD	8-10	10,000	R	Early in 2007	Following up, tend to bid
Liaoning	Jincheng Paper	I	2×75T	TFGD	8-10	8,000	R	Early in 2007	Following up, tend to bid

Sector Symbols I = Industrial P = Power **Total bids tendered (RMB 000) 1,210,200**

Research & Development

From 2006, 1.5% of forecast annual revenues will be allocated to fund the company's ongoing research and development for FGD and TFGD processes. This is equivalent to some RMB6 million for the current year. Tinci also aims to set up a research centre for the treatment of water and wastewater. This centre would have a budget of RMB1.5 million pa and may be partly funded by the Government Technology Research Fund.

Long Term Strategies

With some 4,600 coal fired power plants and large industrial boilers needing FGD retrofitting and an estimated market FGD capacity of 600 units per annum, the Chinese FGD market's size and growth in the next five to eight years is effectively assured. After this, the market will be driven by new power plants and the need to refit and repair extant FGD facilities. Increasing competition from new coal combustion techniques (especially gasification processes), along with the development of alternative sources of energy and a belated drive to improve energy efficiency mean that the market for FGD systems will fall from perhaps 2015 and increasingly so from 2020. The same will apply to NO_x systems, although the need to service these systems every three to five years gives some degree of revenue retention. Tinci aims to respond to this through developing its wastewater and waste management systems and to offer a broad capability in pollution abatement technologies. This is not a material concern for the next few years, but tangible evidence of this strategy emerging will be needed from 2008-2010.

Chinese Flue Gas De-sulphurisation Market

Chinese energy generation

Coal (2003)	1,515 TWh
Hydro electricity (2004)	284 TWh
Oil (2002)	57 TWh
Total (2003)	1,907 TWh

Source: IEA (2005) Key World Energy Statistics, IEA, Paris, France

Chinese coal-fired gen. plants (2002)

Capacity (MW)	**Number**
100 – 199	218
200 – 300	397
300+	103

Source: Minchener (2005) Coal in China, Energeia 16/5, CAER, Kentucky USA

Coal – China's core energy source

The IEA[2] estimates that China has proven recoverable reserves of 96 billion tonnes of coal. This is approximately 11% of global reserves. Potential reserves are likely to be considerably more. In 1973, China produced 416 million tonnes of hard coal or 18.6% of world production. By 2004 this had increased to 1,956 million tonnes or 42.3% of global production. As a result, coal is the predominant source for energy generation in China.

In 2002 there were 718 coal-fired generating plants operating in China. In 2003, China generated 11.4% of the world's energy while accounting for 19.8% of the world's population. In 1973, China accounted for just 2.8% of world energy generation. The IEA forecasts that China's share of energy production will increase to 13.3% in 2010 and 15.4% by 2030.[3]

Indeed, a review of all studies into China's future energy use points to coal accounting for 55-72% of all sources in 2020, with its usage growing by 2.2-3.3% per annum. This is reflected in 199 coal-fired plants being commissioned between 2000 and 2004 (total capacity 63 GW) and construction starting on 144 more in 2004 (total capacity 37GW).[4]

The cost of air pollution

Such a dependence on coal for power generation has its price. In 2000 sulphur dioxide emissions in China amounted to 20 million tonnes, of which 85% is attributable to power generation. With around 8.9 million tonnes per annum (tpa), the power plant sector contributes 45% to total annual SO_2 emissions in China.[5] SO_2 emissions had increased to 21 million tonnes by 2003 and 22.5 million tonnes in 2004.

Air pollution was responsible for the equivalent of 9.1 million years of life lost per annum in 2002, 2.1 million of these being directly attributable to the energy generation sector. In terms of monetary damage (estimating the cost of mortality and morbidity – the cost of treatment and reduced economic activity), this was estimated at US$196 billion pa, US$45 billion being attributable to energy generation.[6]

[2] IEA, *Coal Information 2003*

[3] IEA (2005) *Key World Energy Statistics*, IEA, Paris, France

[4] APERC (2004) *Energy in China: Transportation, Electric Power and Fuel Markets,* APERC, Tokyo, Japan

[5] Yang et al (2002) *Pollution Control Strategy Based on Performance in Power Sector,* CRAES Research Report

[6] Heck, Hirschberg & Dones (2003) *Externalities of Energy Systems for Comprehensive Cost-Benefit Analysis with Focus on China*. IEA Seminar on Energy Modelling and Statistics, Beijing, Oct 20-21, 2003

[7] World Bank, Clear Water, Blue Skies: China's Environment in the New Century, China 2020 Series, Washington, DC

In 1997, the World Bank[7] estimated the cost of air pollution for urban residents to be US$48 billion (or 7% of GDP) in 1995, with the projection that under "business-as-usual" conditions (with a 2.7-fold increase in coal consumption, 1995-2020) health damage to urban residents would increase to US$98 billion by 2020 at current income levels, or US$390 billion (13% of GDP) with adjustment for expected growth in income. SEPA has estimated that the direct impact of acid rain costs the country RMB110 billion (US$13.3 billion).[8]

Environmental management and markets in China

Spending on environmental management in China is almost entirely related to complying with legal obligations and only then when the legislation is seen to be actively enforced. The Chinese State Environmental Protection Agency (SEPA) is responsible for implementing environmental legislation at the national and provincial level. Compared with institutions such as the US EPA and the Environment Agencies in the UK, it is poorly resourced and suffers from conflicts of interest between its staff and the companies they are meant to monitor. While this is a concern regarding industrial boilers, the State has made it clear that full compliance by the power generation sector is expected and progress to date shows this to be the case.

The U.S. Department of Commerce's Office of Energy and Environmental Industries estimates that the total annual market for environmental goods and services in China stands roughly at US$32 billion in 2005, including US$19.3 billion in the water/wastewater sector, US$9.5 billion in the air-quality sector, and US$3.2 billion for solid and hazardous waste management. The Chinese State Environmental Protection Agency (SEPA) estimates that US$14.9 billion was spent on environmental projects during 2002 and that the environmental technology market will grow at a 30% rate annually out to 2010.[9]

Regulatory responses

A series of Regulations and Acts have been passed between 1989 and 2004, outlining SO_2 emissions and charges for these, including the PRC Prevention of Atmospheric Pollution Act, the Administration of levy on waste disposal regulations and the Regulations on the sulphur dioxide emission standard on fire powered electricity generating plants to the atmosphere. In 1998, China adopted national legislation to limit ambient SO_2 pollution and halt the increase of acid rain. The programme became known as the "two control zones (TCZs) plan". SEPA identified two acid rain and SO_2 control zones where higher standards apply (see tables to the left).

Acid rain control zones

Provinces: Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Hubei, Hunan, Guangdong, Sichuan, Guizhou, Yunnan
Autonomous regions: Guangxi Zhuang
Municipalities: Shanghai, Chongqing

SO_2 control zones

Provinces: Hebei, Liaoning, Jilin, Jiangsu, Shandong, Henan, Shanxi, Gansu, Shaanxi
Autonomous regions: Inner Mongolia, Ningxia Hui, Xinjiang Uighur
Municipalities: Beijing, Tianjin

[8] *China Daily*, 29th November 2004

[9] *Environmental Business Journal XVIII 7/8*, 2005

Sulphur content of Chinese coal	
<1%	56%
1-2%	36%
>2%	8%

These measures cover 175 cities in 29 regions. The pollution control measures for companies located in the acid rain and SO_2 control zones mean that newly built or reconstructed power plants using coal with a sulphur content higher than 0.4% must install flue gas desulphurization ('FGD') equipment and existing power plants using coal with a sulphur content higher than 1.0% are required to install desulphurization devices before 2010. In addition, the chemical, metallurgy, construction materials and nonferrous metals industries, along with other industries generating 'heavy pollution' are required to construct waste gas treatment facilities and employ other discharge reduction techniques.

About 1.3% of China's coal is sulphur. In Southwest China's Guizhou Province, the percentage is as high as 2.5%.[10]

In 2004 SEPA revised its SO_2 emission standards for coal-fired plants to:

Plant constructed	**Before 1997**	**1997-2003**	**After 2004**
Compliance	2005: 300	2005: 200	2004: 50
Target (mg/M^3)	2010: 200	2010: 50	

Source: Minchener (2005) Coal in China, Energeia 16/5, CAER, Kentucky USA

These emission targets mean that all coal fired power plants will need FGD facilities and allied regulations for reducing nitrates (NO_x) calls for denitrification facilities to be fitted in tandem with these.

In addition, more stringent emission limits for coal-fired industrial boilers have also been imposed. For example, at the start of 2005, the regulatory framework for new clinker and cement plants was updated and are now equivalent to, or more stringent than, the World Bank guidelines.

Progress to date

In order to encourage facilities to install FGD systems and to generate funds for this work, the State levied a charge of RMB0.21 / Kg of SO_2 discharged in 2000. This was increased to RMB0.42 / Kg in 2003 and in 2005; the State raised the charge to RMB0.63 / Kg. Even so, the need to install FGD systems remains driven by regulation rather than economics as the cost of operating FGD systems is estimated at RMB0.75 / Kg of SO_2 removed.[11]

China's State Power Corporation (SP), which controls about 60% of the country's electricity generating capacity, estimates that by 2005, 16% of the total capacity of its plants either in operation or under construction will have FGD equipment.

[10] Streets D G (2005) *Some Observations on Asian Emission Trends*, Argonne National Laboratory, Illinois, USA, Workshop on Global Air Pollutant Trends to 2030, International Institute for Applied Systems Analysis, Laxenburg, Austria, January 27-28, 2005

[11] Zhang (2002) *Promising and Accessible FGD Market in China's Power Industry*, China Biz Consulting

Chinese FGD facilities			
FGD facilities	**Units**	**Plants**	**Capacity** (MW)
Installed by end of 2003	33	18	6,040
Under construction in 2005	65	27	20,230
Planning to install	78	31	32,420
Total	176	66	58,690

Nationally, the pace of progress has been stepping up since 2005. In 2002, it was forecast that 58-59 GW of plant would have FGD systems fitted, so progress is currently moving ahead. Even so, with an electricity generating capacity in 2000 of 217,900MW and a forecast capacity in 2010 of 560,000MW, work to date represents 27% of 2000 capacity and only 10% of 2010 capacity.[12]

Why "made in China" makes sense for FGD in China

Manufacturing FGD equipment in China has reduced costs significantly. The average cost per Kw of energy generation capacity for FGD provided by western companies is between US$125 and US$150. With domestic manufacturing using international technologies under licence, Chinese companies have reduced the cost to RMB300 – RMB500 / Kw (US$36 – US$60) and this may fall to RMB200 / Kw (US$25).[13]

Technological responses: FGD and NO_x Out

The table below compares the cost of the various FGD approaches and their impact on emissions. The wet scrubber system is costlier, but has four times the SO_2 removal efficiency.

Generation cost (US cents / Kwh)	**None**	**Dry FGD**	**Wet FGD**	**Wet FGD & NO_x**
Capital charges	0.99	1.16	1.26	1.29
Operations & Maintenance	0.66	0.84	0.91	0.91
Fuel	1.16	1.20	1.20	1.20
Total costs	2.81	3.20	3.37	3.40
SO_2 emissions (g/KWh)	10.90	4.50	1.10	1.10
NO_x emissions (g/KWh)	3.00	3.00	3.00	1.20

Source: Williams R H (2001) Toward zero emissions from coal in China, Energy for Sustainable Development, Volume V No. 4, December 2001

Size of the Chinese FGD market

Data on the current and potential size of the market for FGD systems in China is somewhat variable. Tinci's directors estimate that the FGD market will be worth up to RMB200 billion over the next seven years (2006-12) and thereafter will be worth approximately RMB15 billion per annum.

[12] Streets D G (2005) *Some Observations on Asian Emission Trends*, Argonne National Laboratory, Illinois, USA, Workshop on Global Air Pollutant Trends to 2030, International Institute for Applied Systems Analysis, Laxenburg, Austria, January 27-28, 2005

[13] Zhang (2002) *Promising and Accessible FGD Market in China's Power Industry*, China Biz Consulting

According to China Biz Consulting, from 2004 to 2005, the average FGD market size per year including new plants and retrofitting existing plants is about RMB3.6 to RMB4.2 billion (US$430 million to US$500 million); from 2006 to 2010, annual market size is between RMB2.25 billion to RMB2.63 billion (US$270 to 300 million).[14] A market report issued by Globe-Net in August 2005 estimates the market will exceed RMB61 billion (approx US$7 billion) over the next 5 years.

The McIlvaine Company's FGD World Markets (published 1st May 2005) estimates that the world FGD power plant FGD market for systems was worth US$11.0 billion in 2005, with repairs and consumables accounting for a further US$10.0 billion. In addition, NO_x removal systems were worth US$1.5 billion, with repairs and consumables accounting for a further US$800 million. McIlvaine believes that China accounts for some 20% of the world market in 2005 and makes the following market estimates and forecasts for FGD systems:

Year	**2004**	**2005**	**2006**	**2007**	**2008**
Value (US$ billion)	7.0	11.0	11.0	7.5	9.0

McIlvaine's estimate points to a market worth RMB25 billion in 2005.

Market estimates for orders

Capital cost		**Cost** (RMB bn)
RMB / KW	**2006-2010**	**Per annum**
200	104	21
300	156	31
500	260	52

On the assumption that by 2010, FGD facilities to cover 502,000MW of current and new capacity will be needed and that the average cost of FGD is currently RMB300-500 per KW and may fall to RMB200 per KW, the following outline market estimates can be made about orders outstanding between 2006 and 2010 (see table to the left).

The McIlvaine and Tinci estimates broadly agree with these rule of thumb estimates, pointing to a market worth in excess of RMB25 billion pa over the next five years.

Industrial boilers

Large industrial boilers that use coal are subject to the same restrictions on SO_2 production as for coal fired power generation. Some 20,000 industrial sized coal-fired boilers (0.5-50.0MW power output) are manufactured each year in China, a market worth RMB6.8 billion pa in 1998 and rising by 3-5% pa. In 1998, there were 501,240 such boilers in operation, with an average output of 1.75MW, which is forecast to rise to 620,000 by 2010, with an average output of 2.0MW. FGD systems are suitable for being fitted to plants with a capacity of more than 7MW. In 1991, 1,000 such boilers were being manufactured annually, a figure set to rise to 2-3,000 pa by 2010.[15]

[14] Zhang (2002) *Promising and Accessible FGD Market in China's Power Industry*, China Biz Consulting

[15] Minchener A J (2001) *Market assessment of industrial sized coal fired boilers in China*, DTI Coal 205, DTI, UK

According to the DTI study cited above, the most growth in this market will take place in the larger (7MW and above) boilers, those which are the most receptive to needing FGD. This and the anticipated overall growth of this market should ensure adequate opportunities until 2010 for new boilers afterwards.

Competitors in each FGD sub-sector

Company	FGD Sub-Sector
Wuhan Kaidi Electric Power Environmental Protection	Large
Insigma Technology Limited	Small – Large
Zhejiang Tiandi Environmental Protection Engineering	Large
Shenyang Yuanda Environmental Engineering	Large
Beijing GD Longyuan Environmental Engineering	Small – Large
Longjing Desulfurization Engineering	Large
Guohua-Ebara Environment Engineering	Large
Zhejiang Feida Environmental Science & Technology	Small – Medium
Energy & Environment Company of Tsinghua Tongfang	Large
China Huadian Engineering	Large
Ever Cleaning Environmental	Large
Ishikawajima-Harima Heavy Industries	Large
Suyuan Environmental Protection Engineering	Large

Competitors

The FGD and NO_x reduction technology markets are relatively open in that while all the major international players have established a market presence through local alliances, along with some locally developed technologies, most are recent entries and no dominant players have been identified beyond the provincial level. While the market is an open one, in reality all of the international players have to operate with local players because the cost of imported systems is uncompetitive against locally manufactured hardware.

Tinci believes that there are in the region of 30 companies active in the sector in China but only 20 of these have managed to gain a tender contract to date. This is a young and fragmented market, so a reliable national overview is not readily available. The author has identified 13 other companies currently active in the sector:

The market leader is probably **Wuhan Kaidi Electric Power Environmental Protection Co. Ltd**., part of Wuhan Kaidi Electrical Power (www.china-kaidi.com). Its parent is listed on the Shenzhen Stock Exchange (code: 000939) and is based in Wuhan. It has gained 30 projects to date, worth RMB5.1 billion. The company started with the Wulff (Germany, dry FGD) process and in 2003 signed a 10 year licence with Babcock & Wilcox (USA, wet FGD). To date, it has gained eight projects with the B&W process, for 5,520MW, with up to 17,880MW in total with projects currently under development.

Insigma Technology Limited (www.insigma.com.cn) is based in Zhejiang and listed on the Shanghai Stock Exchange (code: 600797). It gained a licence to use the Alstom (wet FGD) process in 2005 and a 10 year licence in 2004 for the Wulff & Graf-Wulff (dry FGD) process. Insigma believe that Graf-Wulff has 70% of the dry FGD market.

Zhejiang Tiandi Environmental Protection Engineering Company is owned by the Zhejiang Provincial Energy Group Co., Ltd. www.ztepe.com) and based in Hangzhou. It uses the Babcock & Wilcox technology under a 10 year licence signed in 2003 and has three projects to date, covering 985MW, with up to 10,585MW in total with projects currently under development.

Shenyang Yuanda Environmental Engineering Co Ltd. is owned by Chongqing Jiulong Electric Power Co., Ltd. (www.jiulongep.com) in Chongqing and listed on

the Shanghai Stock Exchange (code: 600292). It uses technology from Mitsubishi Heavy Industries and has seven major contracts in Shaanxi / Jiangxi since 2001.

Beijing GD Longyuan Environmental Engineering Co Ltd. is part of GD Power Development Co Ltd (www.600795.com.cn) and is based in Beijing and listed on the Shanghai Stock Exchange (code: 600795), using technology from Babcock and Brown (wet FGD).

Longjing Desulfurization Engineering Co., Ltd. is part of Fujian Longking Co., Ltd. (www.longking.com.cn) and is listed on the Shanghai Stock Exchange (code: 600388), using technology from LLB of Germany (wet FGD), GE (USA) & ABB (Sweden).

Guohua-Ebara Environment Engineering Co., Ltd. (www.gh-hb.com.cn) was founded in 1999 and is based in Beijing and uses technology from Ebara and Lurgi Energie (part of GE of the USA) for wet and dry FGD, currently with projects covering 1,300MW.

Zhejiang Feida Environmental Science & Technology (www.zhejianfeida.com.cn) is based in Zhuji and was listed on the Shanghai Stock Exchange (code: 600526) in 2002. It used to use the Ducon processes and has developed its own in-house wet FGD systems.

Energy & Environment Company of Tsinghua Tongfang Co., Ltd., part of Tsinghua Tongfang (www.thtf.com.cn) and listed on the Shanghai Stock Exchange (code: 600100) is the only major player to use in-house developed technology, with an emphasis on smaller projects.

Other players include **China Huadian Engineering Company** (technology from Marsulex and Mitsubishi Heavy Industries), **Ever Cleaning Environmental, Inc.**, (technology from Marsulex of Canada), **Ishikawajima-Harima Heavy Industries Co**. (technology from, its Japanese parent company) and **Suyuan Environmental Protection Engineering Co.** (www.suyuan.com, owned by the Jiangsu Provincial Electric Power Industrial Bureau).

Competitive Positioning

Tinci's management believes the company is one of the ten leading players in the Chinese FGD market, possibly ranking 9th or 10th in terms of turnover derived from FGD installations, and the largest operator in Guangdong Province. There are no official rankings and as most of the major competitors include FGD as a part of a wider range of products and services, it is not possible to verify Tinci's share of the market.

Tinci believes its strongest area is the less than 100MW part of the market, where the demand for retrofitting is the highest. Here, it believes it is amongst the better placed companies currently active in China. The table to the left identifies the leading players in terms of FGD contracted and in negotiation.

The market's competitive outlook is set to evolve quite rapidly, especially amongst the secondary players, who will need to establish a credible presence during the next two years if they are to continue operating, especially as the established players build upon their track record and develop a national profile. Companies that fail to do so will either leave the sector or be acquired for their regional presence; the 20-30 companies currently operating are likely to ease to 15-20 by 2010.

Regional strategy

Tinci has identified three areas in China where it aims to concentrate its marketing efforts: Southern China, from its established base in Guangdong, where it is the market leader; Northern China, where it has established a sales team based in Beijing and Southwest China. Gansu is in Northwest China and thus this FGD contract was gained outside its initial target markets. Tinci is concentrating on those areas which are subject to Acid Rain (ARCZ) and SO_2 (SO_2CZ) emission abatements. The table below outlines how the company has extended its geographical reach in contract awards since 2002.

The geographical diversification is more pronounced when looking at contracts currently under consideration. Of the 25 listed by the company, only one is in Guangdong, while 17 are in the Northern region.

Leading players in terms of FGD

Projects (MW)	**Gained**	**Potential**
Wuhan Kaidi	5,520	17,880
Zhejiang Tiandi	985	10,585
Guoha-Ebara	1,303	NA
Tinci Sanhe	2,775	15,000

Geographic reach of contracts awarded since 2002

Sector – Location / Area		**2002**	**2003**	**2004**	**2005**
Wastewater treatment					
Guangdong		1	1	1	1
FGD procurement					
Guangdong (ARCZ)	Southern	0	1	0	1
FGD					
Guangdong (ARCZ)	Southern	1	3	2	3
Gansu (SO_2CZ)	Northwest	0	0	0	1
Shandong (SO_2CZ)	Northern	0	0	0	1
Hubei (ARCZ)	Northern	0	0	0	1
Total contracts		2	5	3	8

Contracts under consideration

Area	**Province**	**Control Zone**	**Contracts**
Northern	Shanxi	SO_2	5
Northern	Shandong	SO_2	4
Northern	Henan	SO_2	4
Northern	Inner Mongolia	SO_2	4
North West	Gansu	SO_2	2
Southern	Hunan	AR	1
Southern	Jiangsu	SO_2	2
Southern	Guangdong	AR	1
Southern	Anhui	AR	2

New Markets

Currently Tinci is concentrating on developing systems for treating other emissions and effluents from industrial and energy combustion processes, chiefly nitrous oxide gases and post combustion effluents.

Nitrous Oxides - NO_x

Tinci is currently researching the processes for the elimination of nitro and nitric contents from the emission of flue gases (DeNox), typically removing 80-90% of these gasses. The technology involved is broadly similar to FGD and the leading national and international players are currently active in the Chinese market. Tinci believes that this market could be worth RMB150 billion from 2006-2020.

While this is a highly competitive market, Tinci aims to use the customers it has already gained for FGD orders as its market entry for NO_x systems. Industrial facilities such as large scale petro-chemical plants, steel works and paper mills would need to spend some RMB20 million to control their nitro and nitric emissions. To date, no orders have yet been secured, but Tinci is currently bidding to install facilities at a new power plant in Guangzhou and is preparing a tender for a 2x300MW plant at an iron and steel mill for Zibei Power Plant. An additional benefit of DeNox installations is that every three to five years, the catalyst must be replaced. This provides the potential of a recurring income stream, equivalent of up to 40% of the contract value.

Water and indust. water treatment est.

	Market size (US$bn)
2004	15.0-18.7
2005	16.6-22.7
2010	30.0-33.2

Water and wastewater treatment

In 2000, some 70-80% of urban and industrial effluents were untreated. Industrial effluent treatment is a particular problem, with at least 70% of discharges having received no treatment in 2003. Groundwater overabstraction and the uncontrolled discharge of domestic and industrial effluents have resulted in serious resource depletion and degradation. Officially, water pollution costs China some RMB135 billion (€14bn) pa in lost economic activity. As a result, the Government plans for all major cities to provide some wastewater treatment facilities by 2010.

The number of wastewater treatment plants will have to rise from some 700 in 2005 to 1,000-1,400 by 2010, resulting in 50% of urban wastewater being treated by then, with Beijing having a 70-80% treatment rate. The capital spending estimates and forecasts for water and wastewater treatment have been adapted from Frost + Sullivan and the Helmut Kaiser Consultancy (table at right).

Currently, the company is concentrating on the industrial process water sector, where it offers technologies for the pre-treatment of industrial process water (anti-corrosion and anti-coagulation) for cooling water circulation system of the metallurgy, petrochemical, and power plant industries. Based on Tinci's experience of power plants in the local and international markets, it is expected that a 350MW electricity generating facility would need to spend between RMB2.5 million and RMB3.5 million per year for treating cooling water.

The tender process

FGD projects are usually subject to competitive tender. Tender prices are driven by four major components: equipment (70% of the price), installation and construction (20%) and design and testing services (10%). The costed proposal is prepared in house for Tinci's management to decide upon the tender price. This price will reflect factors such as the expected competition (numbers, abilities and financial strength) and their knowledge of the customer. Typically, a mark up of between 30% and 50% is added to the estimated cost.

Results of tenders are generally known within 1 to 2 months after the bids are made. Work on each project is expected to commence within 3 months after a contract is awarded. Large scale projects generally take 12-18 months to complete and small and medium sized projects take 6-8 months.

Project implementation

On gaining a FGD contract, a project is typically carried out along the following lines:

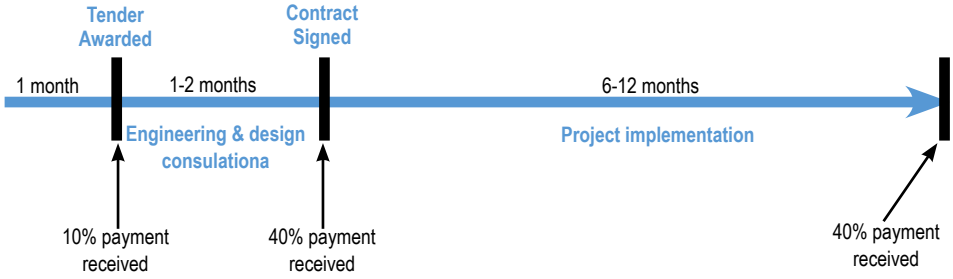
1. Contract signed
2. Initial payment received and retention / guarantee made
3. Tender for all suppliers for more than RMB1 million
4. Delivery of imported goods to dock 45 days before installation
5. Delivery of local goods at site 20 days before installation
6. Installation and construction, with payments by agreed-on milestones
7. Project completion and completion of main payments
8. 12 months post completion, all retentions paid

Terms and conditions of customer contracts

The terms vary for each contract, but a typical profile for each type of project is summarised below:

	Large scale FGD	Small scale FGD	Procurement
Signing fee	5%	5-10%	10%
Design fee	-	-	10%
Contract milestones	90%	80-90%	70%
Retention	5%	5-10%	10%
Retention terms	12 months	12 months	Inspection

Typical small scale FGD project



Remaining 10% paid 12 months after project completion

Large contract guarantees

For large scale projects, the Company is usually required to provide a bank guarantee to its customers. Details of the amounts provided as guarantee at 31 December 2005 are summarised in the following table (RMB'000):

Customer	Indemnity	Start	Expiry
Performance Guarantee	(RMB)		
(1) Jangjiang Power Plant	30,380	31-03-05	28-09-07
(2) Jingyuan 2nd Power Plant	11,040	01-04-05	30 days after completion
(3) Jingyuan 3rd Power Plant	8,832	21-08-05	15% of total contract value
(4) Jingyuan 4th Power Plant	17,665	03-11-05	31-12-07
Advanced payment guarantee			
(5) Jangjiang Power Plant [1]	30,380	01-03-05	28-09-06
Bid Bond			
(6) Qubu Shengcheng Thermo	2,000	07-10-05	30 days post bid expiry
Total	**100,297**		

[1] Plus interest at 6% per annum

In general, if the Company cannot honour the contracts, the bank will make payments to the customers from the Company's account up to the indemnity lines. The indemnity lines may decrease as the projects progress.

The EEC Licence

The Licence with EEC involves three payment elements: a Technology Transfer fee, a Technical Usage fee and a Contract Fee. Tinci has made four payments in 2004-05 totalling US$800,000 relating to the technology transfer. Tinci pays a fixed "technical use" fee of US$100,000 per contract and a further fee of between US$25,000 and US$100,000 depending upon absorber size.

The license requires Tinci to secure two contracts using the EEC technology within 18 months of date of the license agreement, which has been achieved, and one contract per annum thereafter.

Tinci's core forecasts*

YE 31 Dec., £ million	2005	2006E	2007F	2008F	2009F
Gross turnover	16.5	19.1	24.1	27.5	33.0
Less sales tax	0.5	0.6	0.8	0.9	1.1
Net turnover	16.0	18.5	23.3	26.6	32.0
made up of:					
- FGD procurement	5.2	8.5	6.5	0.0	0.0
- Small-Medium FGD & Water	3.1	2.7	10.1	14.8	16.8
- Large FGD	7.7	7.3	6.7	11.8	15.2
- $DeNO_x$	0.0	0.0	0.0	0.0	0.0
- Overhaul - $DeNO_x$	0.0	0.0	0.0	0.0	0.0
Total net turnover	**16.0**	**18.5**	**23.3**	**26.6**	**32.0**
Cost of sales	**11.0**	**14.4**	**17.0**	**17.8**	**20.7**
Gross margin					
- Large FGD	-	*20%*	*22%*	*22%*	*22%*
- Small-Med FGD & Water	-	*35%*	*35%*	*35%*	*35%*
- FGD procurement	-	*20%*	*20%*	*20%*	*20%*
- $DeNO_x$	-	*28%*	*28%*	*28%*	*28%*
Gross profit					
- Large FGD	-	1.5	1.5	2.6	3.3
- Small-Med FGD & Water	-	0.9	3.5	5.2	5.9
- FGD procurement	-	1.7	1.3	0.0	0.0
- $DeNO_x$	-	0.0	0.0	1.0	2.1
Gross profit	**5.0**	**4.1**	**6.3**	**8.8**	**11.3**
Provision for cost overruns	0.0	0.0	0.0	0.0	0.0
Staff costs	0.3	0.5	0.7	1.5	2.0
Staff benefit expenses	0.0	0.1	0.1	0.2	0.3
R&D (new programmes)	0.0	0.1	0.2	0.5	0.6
Depreciation and amortisation	0.1	0.1	0.1	0.1	0.2
Other operating expenses	0.6	0.7	0.8	1.1	1.3
Total operating expenses	0.9	1.5	2.0	3.4	4.4
Profit/(loss) from operations	**4.1**	**2.6**	**4.3**	**5.4**	**6.9**
Operating margin	*25%*	*14%*	*18%*	*20%*	*22%*
Interest received	0.0	0.0	0.0	0.1	0.1
Interest paid	0.0	-0.1	0.0	0.0	0.0
Finance costs	0.0	0.0	0.0	0.1	0.1
Exchange gains (losses)	0.5	0.8	0.0	0.0	0.0
Non-operating income	0.0	0.0	0.0	0.0	0.0
Profit/(loss) before taxation	**4.5**	**3.3**	**4.3**	**5.5**	**7.1**
Pre-tax margin	*28%*	*18%*	*19%*	*21%*	*22%*
Taxation	0.6	0.5	0.6	0.8	1.1
Tax rate	14%	15%	15%	15%	15%
Profit/(loss) for the year	**3.9**	**2.8**	**3.7**	**4.7**	**6.0**
Net margin	*24%*	*15%*	*16%*	*17%*	*19%*
EPS (p)	7.77	5.46	6.92	8.78	11.37
Cash flow	4.12	2.66	4.42	5.59	7.22
CFS (p)	8.23	5.14	8.34	10.56	13.63

** Forecasts shown at a currency rate of RMB14.85 per £*

[1] **Risk issues**

Foreign exchange and the cost of equipment. The company is seeking to maximise the local sourcing of equipment, which will assist in maintaining gross margins and minimising currency risk in the longer term. The only limit to this strategy will be where licences to use foreign technologies are conditional on the import of certain goods. This is in keeping with a broad trend towards the local sourcing of environmental technology in China which will start to make an impact in the overall market from 2010.

Tinci's Balance Sheet

FY 31 Dec., £ million	2004	2005	2006E	2007F	2008F	2009F
Sales	0.7	16.0	18.5	23.3	26.6	32.0
Fixed Assets						
Intangible assets	0.0	0.4	0.4	0.3	0.3	0.2
Property, plant & equipment	0.1	1.1	1.2	1.3	1.5	1.7
	0.1	1.5	1.6	1.7	1.8	1.9
Current Assets						
Cash	0.3	2.1	0.9	4.9	7.2	11.3
Trade receivables, prepayments & deposits	2.8	10.7	9.0	9.6	14.0	17.7
Amount due from a related company	0.0	2.4	0.0	0.0	0.0	0.0
	3.1	15.2	9.9	14.5	21.3	29.0
Current Liabilities						
Accruals [1] & account payable	0.1	10.5	2.7	2.5	4.3	5.5
Tax payable [2]	0.0	0.6	1.8	2.3	2.7	3.3
	0.1	11.2	4.5	4.8	7.0	8.8
Bank loan & other loans	0.0	2.2	0.0	0.0	0.0	0.0
Capital and reserves						
Share capital	3.2	0.5	1.6	1.6	1.6	1.6
Merger reserve	0.0	-0.5	-0.5	-0.5	-0.5	-0.5
Exchange reserve	0.0	-0.5	-0.8	0.0	0.0	0.0
Retained profit	-0.1	3.8	6.6	10.3	14.9	20.9
Total	3.1	3.3	7.0	11.4	16.0	22.1
Ratios						
Debtors / sales	*406.5%*	*66.9%*	*48.7%*	*41.2%*	*52.7%*	*55.3%*
Creditors / sales	*12.9%*	*65.9%*	*14.7%*	*10.8%*	*16.3%*	*17.3%*

[2] Comments on the balance sheet

Capital spending, R&D and depreciation. Tinci Holdings is a consulting engineering company, whose assets lie in its staff, track record, access to technologies and the ability to manage major projects for clients. As a result, capital spending and depreciation are set to remain low, with the only upward pressure coming from possible future acquisitions of new technology licences and similar companies. R&D spending will need to increase, especially as the company seeks to diversify away from FGD. The medium term target of 1.5% of revenues being devoted to R&D spending is likely to prove conservative and is likely to rise to 2.0-3.0% by 2010.

Scenario analysis

Forecasts	Core Scenario			Best Case Scenario			Pessimistic Scenario		
FY 31 Dec., RMB million	**2006**	**2007**	**2008**	**2006**	**2007**	**2008**	**2006**	**2007**	**2008**
Assumptions:									
Projects gained									
New projects started - Small-Medium FGD	2	5	8	2	7	9	2	6	7
New projects started - Large FGD	0	1	1	0	1	2	0	0	1
New projects started - $DeNO_x$	0	0	1	0	0	2	0	0	1
Average project size (£ million)									
New projects - Small-Medium FGD	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
New projects - Large FGD	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
New projects - $DeNO_x$	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Overhaul - $DeNO_x$	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Proforma P&L (£ million)									
Net turnover									
- FGD procurement	8.5	6.5	0.0	8.5	6.5	0.0	8.5	6.5	0.0
- Small-Medium FGD & Water	2.7	10.1	14.8	2.7	14.1	16.7	2.7	12.1	13.0
- Large FGD	7.3	6.7	11.8	7.3	6.7	11.8	7.3	6.7	11.8
- $DeNO_x$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Overhaul - $DeNO_x$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total net turnover	**18.5**	**23.3**	**26.6**	**18.5**	**27.3**	**28.5**	**18.5**	**25.3**	**24.7**
Cost of sales	**14.4**	**17.0**	**17.8**	**14.4**	**19.6**	**18.0**	**14.4**	**18.3**	**16.6**
Gross margins									
- Large FGD	*20%*	*22%*	*22%*	*20%*	*22%*	*22%*	*20%*	*22%*	*22%*
- Small-Med FGD & Water	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*	*35%*
- FGD procurement	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*
- $DeNO_x$	*28%*	*28%*	*28%*	*28%*	*28%*	*28%*	*28%*	*28%*	*28%*
Gross profits									
- Large FGD	1.5	1.5	2.6	1.5	1.5	2.6	1.5	1.5	2.6
- Small-Med FGD & Water	0.9	3.5	5.2	0.9	4.9	5.8	0.9	4.2	4.5
- FGD procurement	1.7	1.3	0.0	1.7	1.3	0.0	1.7	1.3	0.0
- $DeNO_x$	0.0	0.0	1.0	0.0	0.0	2.1	0.0	0.0	1.0
Gross profits	**4.1**	**6.3**	**8.8**	**4.1**	**7.7**	**10.5**	**4.1**	**7.0**	**8.2**

Appendix 1: Management

Directors

There are six directors, three of whom are non-executive directors:

Sir David William Brewer CMG, FCII (aged 66), *Non-executive Chairman*. Sir David was appointed Chairman in July 2006. He has 25 years of experience in China, including opening the Chinese office of the Sedgwick Group, the first Western insurance broker to trade domestically in China. In 1993 he was responsible for obtaining the first authorisation of an insurance broker in China. Sir David was Lord Mayor of the City of London in 2005-06. He is a non-executive director of London Asia Capital plc which is traded on AIM. He was knighted in the 2007 New Year honours list.

Mr Xu Jin Fu (41), *Chief Executive Officer*. Mr Xu is responsible for Tinci's strategic planning, execution, organic growth and operations. He is also responsible for relationship management with Tinci's various banks. Mr. Xu received his BSc in Organic Chemistry from the Hangzhou University and a MSc from the China Academy of Science.

Mr Pan Wen Zhong (36), *Chief Financial Officer*. Mr Pan joined Tinci in November 2005. He is a graduate from Guangzhou Zhongshan University and is qualified as a Chinese Certified Public Accountant (CCPA) and as a Chinese Certified Tax Agent (CCTA). He has been in the accounting profession in China for over fifteen years, of which ten years were spent with Guangdong Yangcheng Certified Public Accountants Company Limited.

Ms Wang Keer (33), *Chief Operating Officer*. Ms Wang oversees the operation of the company and is responsible for Tinci's marketing and customer relationships. Prior to joining Tinci, Ms Wang had been the manager of the advertising department of the Guangzhou Nanfang Daily, one of the principal newspapers in Guangzhou.

Dr Cheng Shifa (42), *Non-executive Director.* Dr Cheng is a US permanent resident based in Austin, Texas. He has acted as a senior consultant to Tinci since 2003. He was awarded a PhD in Chemistry by Mississippi State University and an E-MBA from the IC2 Institute of the University of Texas.

Mr David William Howitt Steeds (57), *Non-executive Director.* Mr Steeds is a UK resident and qualified as a Chartered Accountant with Coopers & Lybrand (now PricewaterhouseCoopers) in 1974. Mr Steeds has extensive experience in both the public and private sectors and an in-depth knowledge of the support services industry. He currently represents HBOS plc on the Board of ALIS, the French company building the A28 Rouen-Alencon motorway in Normandy and is a non-executive director of The PFI Infrastructure Company plc and Jarlway Holdings plc which are traded on AIM. He is a former Chief Executive of the Private Finance Panel, the UK Government Agency formerly responsible for the Private Finance Initiative.

Senior Management

Mr Su Wen Yi, *Operating Financial Officer.* Mr Su has 15 years financial accounting and management experience. He was CFO and vice president of Shenzhen New Era Enterprise Co., Ltd., the CFO of Zhongshan Public Utilities Group RMB 6 billion assets) and CEO of Zhongshan Public Science and Technology Co., Ltd (a Shenzhen Stock Exchange listed company). After he finished his study at the University of Western Ontario, he joined McVicar Resources Inc., a Canadian listed company, as a senior financial officer.

Mr Sun Huliang (43), *Deputy General Manager*. Mr. Sun is Tinci's Chief Engineer and is responsible for technology development and quality control. He has a BSc in Petroleum Refining from the Huadong Industrial Institute and an MSc in Management from Zhejiang University. He has been certified as a FGD engineer by Ducon EEC and IDRECO of Italy. Prior to joining Tinci in May 2004, Mr. Sun had been the Deputy Chief Engineer and Project Director with China Petrochem Zhenghai Petroleum Refining and Chemical Engineering Co. Ltd.

Mr Zhang Shao Xun (38), *Deputy General Manager.* Mr. Zhang is the Technology Director and is responsible for the initial design work for Tinci's small scale FGD projects. He has over 18 years of experience in chemical engineering and is a Ducon EEC certified FGD engineer. Before joining Tinci in May 2002, he worked as a chemical engineer with Guangzhou Petrochem Co. Ltd and has a BSc in Chemical Engineering from Zhejiang University.

Mr Zhao Jin Ping (48), *Engineering Director.* Mr Zhao is responsible for the initial design work for Tinci's large scale FGD projects. Prior to joining Tinci in September 2005, he was the Deputy General Manager of Qingdao Guodian Lande Environmental Engineering Co., Ltd (2004-05), previously working at the Second Design Institute of Chemical Industry, rising to Assistant Chief Engineer (1992-2004); and as a Civil Engineer at the Third Design Institute of Chemical Industry (1982-92).

Mr Deng Jin Ching (32), *Deputy General Manager.* Mr. Deng assumes responsibility for general administration, human resources, legal affairs and information management of the Company. He is a graduate in marketing from the China People's University. Prior to joining the Company in August 2004, Mr. Deng was the Sales Manager of Wuhan Wuzhou Trading co. Ltd, Human Resources Director of Zhongshan One Plus One Group and the General Manager of Guangzhou Longmei Cultural Communications Co. Ltd.

Ms Pan Ying (Mrs Xu, 35), *Deputy General Manager & Purchases Director,* assists Mr Xu in procurement for Guangzhou Tinci Hi-Tech Materials Technology Co. Ltd and Tinci. She has over 15 years of experience in procurement.

Working conditions and staff retention

In order to encourage the retention of key staff, a company share scheme was set up in July 2006. In July 2006 there were 102 people employed by the company, 13 of whom are in management positions, along with 34 technical engineers. Staff turnover has varied between 8-10% per annum since 2003.

Appendix 2: Processes

Removal technologies

Technology	TFGD	Wet	Dry	KCFB
SO_2 removal	>90%	>90%	>90%	85-99%
Plant size (MW)	50-200	300	125-300	50-250

The Technologies

The FGD and NO_x removal technologies described below are those used by Tinci. These reflect the main approaches used in the Chinese FGD market. They can be summarised as shown in the table above.

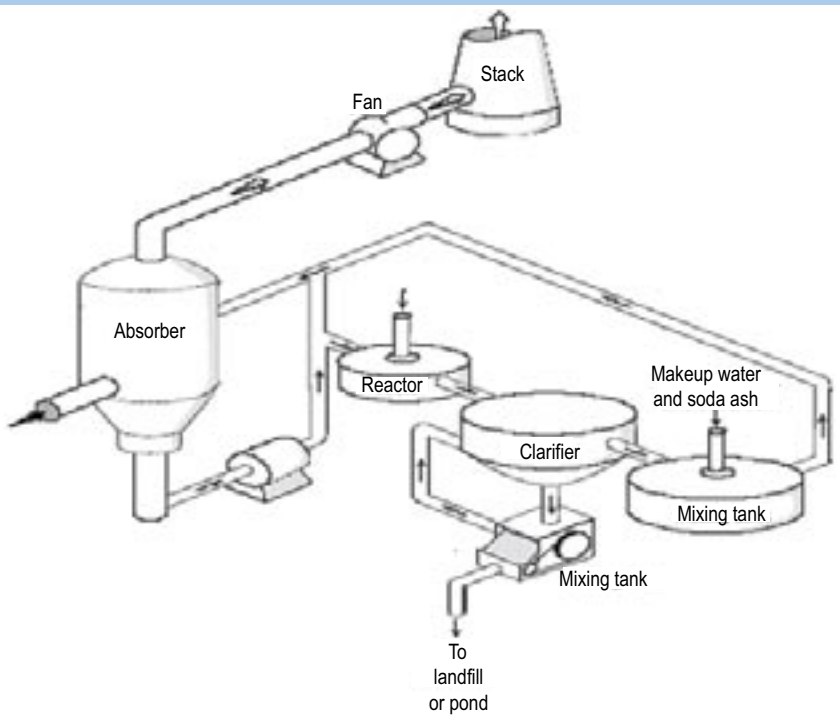
TFGD Double Alkali Process ("TFGD") – "Wet"

TFGD is currently the main technique Tinci uses for small to medium sized projects. This technology is superceding the NC5000 technology that Tinci used at the start of its operations.

This process has been developed by Tinci. The Company applied for a patent for the technology on 10th April 2006. Tinci's management believes that this process is most suitable for applications in the Chinese environment on small to medium sized projects involving plants having a capacity of 25MW up to 200MW.

The process involves a sodium based alkali solution to absorb sulphur dioxide from the combustion exhaust gas from boilers of electricity and other industrial plant. The spent absorbing liquor is then reacted with lime or limestone to regenerate the sodium alkali solution with the calcium salts precipitated and discarded as sludge. The regenerated solution is returned to the absorber for re-use. This process can remove over 91% of the sulphur dioxide from the flue gas. This process significantly reduces the amount of absorbing slurry required when compared with the wet limestone-gypsum process, without losing SO_2 removal efficiency and has the added advantage that it uses less power and avoids accumulation of sludge or precipitation inside the absorber tower.

TFGD Double Alkali Process



Management is achieving significant success in marketing this process, with five tenders having been won in 2005 (a 100% success rate). A typical project would take 6 to 8 months to complete.

Wet Limestone-Gypsum FGD Process ("Wet Limestone") – "Wet"

The Wet technique licenced from EEC is currently the main technique for large scale projects. The standard design for this process consists of one scrubber for each 300MW boiler. The scrubbers use a common reagent feed system and a common waste / bleed gypsum handling system. The flue gas passes through a boost fan and then through a heat exchanger to enter the scrubber via inlet ducts. These ducts hold Ducon's proprietary vertical Ventri Rod decks and co-current spray nozzles to begin the adiabatic (cooling by convection) quenching of the flue gas using clean recycled water. The cooled gas then enters a tower and rises counter-current to the large volume of descending spray of scrubbing slurry. The scrubbing tower utilises a combination of spray and Ventri Rod decks to maximise the sulphur dioxide mass transfer and acid species (hydrogen sulphite) neutralisation.

The scrubbing medium is re-circulated at optimum liquid to gas ratios and fresh limestone slurry is introduced at a controlled rate. The Ventri Rod decks provide a high surface area thin film of scrubbing slurry to enhance mass transfer of sulphur dioxide into the aqueous phase slurry whereby, sulphur dioxide is first hydrolysed by water and then neutralised by the limestone to form a stable sulphite ion in the slurry. This slurry then drops into the integral sump and is continuously agitated and oxidised to form sulphate by oxygen in the water saturated forced air with which it is sprayed.

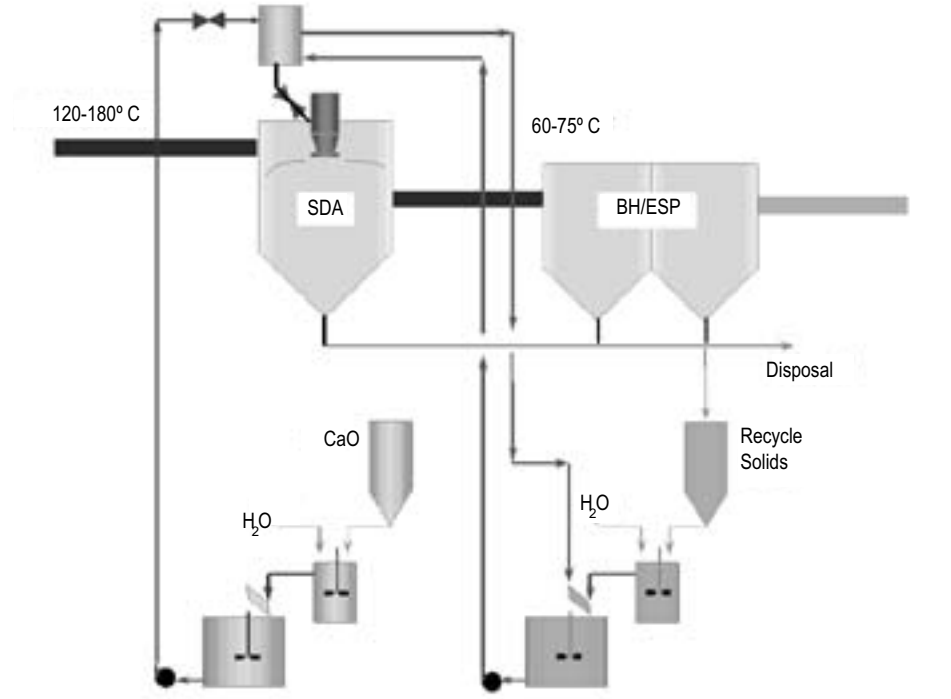
The process provides efficient conversion of sulphite into sulphate and proper conditions for precipitation. The slurry is pumped out of the scrubber to hydrocyclones for the first stage filtering. The filtered slurry then enters a gypsum tank for suspension and is then filtered again through a vacuum belt filter to produce gypsum with moisture content of less than 10%.

The process has a minimum of 90% sulphur dioxide removal efficiency and offers a saving of 20% to 25% on the reagent slurry as well as a lower liquid/gas ratio that reduces power consumption.

Niro Spray Dryer Absorber Process ("Niro") – "Semi-Dry"

This process consists of the Spray Dryer Absorber ("SDA") module, a downstream fabric filter, a reagent preparation system and a product handling system. Untreated gas, when introduced into a spray dryer absorption chamber, contacts a fine spray of an alkali (e.g. calcium) reagent which causes a significant part of the acidic components in the flue gas to be rapidly absorbed into alkaline droplets. The droplets are dried to form a powder before they touch the walls of the absorber and a proportion then falls to the bottom of the absorber where it is then discharged. The treated gas flows to a particle separator where the remain-

Niro Sprayer Dryer Absorber Process



ing suspended solids are removed. Management consider this is the most suitable method for plants of 125-300MW on grounds of cost and ease of maintenance.

Tinci has acquired a license from GEA Technology (Shanghai) Co Limited to employ the process in China. The license becomes exclusive on Tinci winning its first contract using the process. No such contract has yet been won although Tinci has outstanding tenders for three projects where it intends to employ the process. No contracts with other companies using this technology in China have been identified. Under the terms of the license, Tinci is required to procure the spray nozzle from GEA. The process is considered to have high acid gas removal efficiencies (over 94% of sulphur dioxide) and other advantages, such as low capital cost and water and power consumption.

KCFB – Ragar – "Dry"

Ragar AG of Germany's Konstant Circulating Fluidized Bed (KCFB) Process is a dry FGD technology. The Circulating Fluidized Bed (CFB) technology was first adopted in the flue gas cleaning of electrolytic aluminium plants and for waste to energy projects and was applied to the power stations from the middle of 1980s and has been developed to serve large scale facilities. Ragar's KCFB systems have been fitted to industrial boilers in Germany and Austria since 1993 and in 2003, a facility serving a 210MW power plant in Guangzhou was constructed. Ragar has a representative office in Guangzhou. The RAGAR-KCFB technology uses the KCFB Reactor and hydrated lime powder or hydrated lime suspension as the standard sorbent, although also other sorbents like sodium bicarbonate or activated carbon can be used to reduce the flue gas pollutants. The KCFB-process can be equipped with newly installed furnaces or retrofitted to existing ones.

Appendix 3: Contracts

Tinci's contracts to date

Customer
Contract capacity and technology (where applicable)
Contract status (start & finish dates) and value

Industrial boiler FGD systems

Haibawang (Shantou) Foods Co. Ltd.
10 tonnes/hour, NC 5000
Completed: April 2003 - June 2003 for RMB100,000

Panyu Tanzhou Textile
N/A (Technology Advisory)
Completed: July 2003 - Aug 2003, for RMB50,000

Dongguan Liwen Papermaking
170 tones/hour, TFGD
Completed: Oct 2003 – March 2004 for RMB7.27 million

Shandong Jinling Thermoelectricity
2 x 130 tonnes / hour
In progress, RMB 7.9 million

Power generation FGD systems

Yangshan Electricity Co Ltd
130 tonnes/hour, NC 5000
Completed: May 2002 - July 2002 for RMB680,000

Meishan Power Plant
220 + 130 + 75 + 240 tonnes/hour, TFGD
Completed: June 2004 - July 2005, for RMB12.00 million

Shandong Lineng Power
2 x 56MW, TFGD
Completed: June 2005 - Dec 2005, for RMB15.26 million

Hubei Huasheng Ludian
240 t/h, TFGD
Completed: July 2005 - Dec 2005, for RMB13.50 million

Gansu Jingyuan 2nd Electricity Co. Ltd.
3 x 300MW, Wet (EEC)
In progress (40% complete): June 2005 -Dec 2006, for RMB220.81 million

Nanhai Jiangnan Power
5 x 130 tonnes/hour, TFGD
In progress (40% complete): Sept 2005 - Oct 2006, for RMB26.42 million

Nanhai Changai Power
220 tonnes/hour, TFGD
In progress (40% complete): Sept 2005 - Oct 2006, RMB7.24 million

Henan Faxian Power
2 X 220 tonnes hour TFGD
In progress, RMB 10.4 million

Hubei Huansheng Ludian
2 x 240 tonnes / hour TFGD
Second stage in progress, RMB 6.4 million

Henan Jiaozuo Jinguan
2 x 135 MW Niro SDA
In progress, started November 2006, RMB 52.0 million

Power generation FGD Procurement

Guangzhou Mingda Industry
5 tonnes / hour
Completed: Oct 2003 - Nov 2003 for RMB150,000

Zhanjiang Power Plant
4 x 300MW, Wet FGD (EEC)
In progress (30% complete): May 2005 onwards for RMB303.8 million

Wastewater disposal

Yingde City Government (a number of projects)
Completed: Aug 2002 – Dec 2004 for RMB1.37 million

Dongguan Liwen Papermaking
In progress (70% complete): Oct 2005 - Jan 2006 for RMB740,000

Projects carried out during 2005 (RMB million)

Stage of Completion	Revenue	Gross profit	Gross margin	Duration (days)
Gansu: Gansu Jingyuan 2nd Power Plant				
40%	99.29	29.88	30.1%	516 days
Guangdong: Zhanjiang Power Plant				
30%	74.78	20.90	28.0%	NA
Shandong: Shandong Lineng Power Plant				
100%	13.73	7.86	57.3%	199 days
Hubei: Hubei Huasheng Ludian Power Plant				
100%	12.15	6.23	51.3%	214 days
Guangdong: Nanhai Jiangnan Power Plant				
40%	10.04	5.2	50.0%	395 days
Guangdong: Meishan Power Plant				
100%	6.16	2.74	44.5%	732 days
Guangdong: Nanhai Changhai Power Plant				
40%	2.75	1,375	50.0%	395 days
Guangdong: Dongguan Liwen Papermaking				
70%	0.55	0.27	50.0%	92 days
Total	219.45	74.27	33.8%	

Projects tendered in the first half of 2006 (RMB million)

Prospective Customer and Expected Bid Date	Boiler Capacity	System Type	Project Duration	Contract Value (est.)
			In months	RMB m
January 2006 (actual bids made)				
Deyuan Fugu Energy, Shanxi	2 x 600MW	Wet (EEC)	18	195.0
Lineng group – Demonstration Project of Coal Generating Electricity, Shandong	300MW	Wet (EEC)	8	70.0
Huangpu Power Plant, Yuedian Group, Guangdong	2 x 125MW	DeNox	15	36.0
Xuzhou Zhaicheng Electric Power, Shandong	2 x 55MW	TFGD	8	20.0
Laifu Power Plant, Shandong	3 x 125MW	Design only	15	8.0
February 2006				
Hequ Power Plant, Luneng Group, Shanxi	2 x 600MW	Wet (EEC)	18	195.0
Zibei Power Plant, Taigang Group, Shanxi	2 x 300MW	Wet (EEC) & DeNox*	18	180.0
Xuchang Thermoelectricity Factory, Henan	2 x 200MW	Wet (Ducon) or TFGD	15	80.0
Huaxin Ethanol Power Plant, Jining City, Shandong	2 x 60MW	TFGD	8	12.0
Lead & Zinc Smelt Factory, Zhuzhou, Hunan	6 x 30 t/h	TFGD	8	8.0
March 2006				
Yiyang 2nd Power Plant, Hunan	2 x 600MW	Wet (EEC)	18	195.0
Ligang Power Plant, Jiangsu	2 x 350MW	Wet (EEC)	18	120.0
Nanyang Thermoelectricity, China Electricity Investment, Henan	2 x 200MW	Wet (EEC) or TFGD	15	80.0
Huaneng Yushe Power Plant, Shanxi	2 x 100MW	Niro	15	68.0
April 2006				
Shangdu Power Plant, Xilihaote City, Inner Mongolia	2 x 600MW	Wet (EEC)	18	195.0
Luye Hewan Power Plant, Lanzhou City, Gansu	2 x 300MW	Wet (EEC)	18	175.0
Hefei 1st Power Plant, Anhui	2 x 125MW, 1 x 600MW	Wet (EEC) or TFGD	18	150.0
Jinyuan Thermoelectricity Power Plant, Anhui	2 x 50MW	TFGD	8	16.0
May 2006				
Fengtai Power Plant, Inner Mongolia	2 x 330MW	Wet (EEC)	18	120.0
Dalate Power Plant, Inner Mongolia	2 x 330MW	Wet (EEC)	18	120.0
Baotou 2nd Power Plant, Inner Mongolia	2 x 100MW	TFGD	15	50.0
June 2006				
Shengtou Power Plant, Shanxi	4 x 200MW	Wet (EEC) or TFGD	15	150.0
Yangtse Petrol Chemistry, Nanjing City, Jiangsu	4 x 50MW, 4 x 60MW	TFGD	10	64.0
Jinguan Power Plant, Jiaozuo City, Henan	2 x 135MW	Niro	12	60.0
Aiyisi Power Plant, Jiaozuo City, Henan	2 x 125MW	Niro	11	55.0

We are pleased to bring you this report on **Tinci Holdings.**

Objective was founded so that issuers can ensure that the market and their investors always have access to quality research through sponsoring indepth, proactive coverage.

While our research is sponsored by the companies we cover, it is always written on behalf of our readers. We offer you an objective, independently prepared view of the opportunity, the risks and what the value might be to an average investor in the companies we cover.

As we are unconflicted by corporate finance or PR/IR agendas, our analysts are always free to give their true opinion of the businesses we cover.

As always, I welcome your comments and feedback on our research!

Gabriel Didham, CFA
Objective Capital

David Lloyd Owen has followed the technology and environmental services sectors as an equity analyst and consultant since 1986. He worked at Savory Milln (UBS) and Paribas before co-founding Ecofin in 1991 and has been active in environmental finance consultancy since. David has a first degree in Environmental Biology at Liverpool University and a DPhil in Applied Ecology from Oxford University.

About our relationship with Tinci Holdings
Objective Capital has been sponsored by the company to provide research coverage of Tinci Holdings.

Objective will provide proactive, indepth coverage for a period of more than one year. The typical fee for the quality and level of coverage offered by Objective is £25,000 per annum. Objective does not accept payment in any form of equity.

Unless otherwise noted, the opinions expressed in our reports are entirely those of our analysts. Objective's analysts are contractually protected to be able to always provide their opinion on the businesses they write on.

objectivecapital

Objective Corporate Research

Call us today to find out how our sponsored research can benefit you

Objective Capital Limited
Tel:+44-(0)870-080-2965
Fax: +44-(0)870-116-0839
sales@objectivecapital.com

Internationally:
Phone: +44-20-7754 5994

US Toll-Free:
1-888-802-7215

For Marketing & Sales:
Token House
11-12 Tokenhouse Yard
London EC2R 7AS

Corporate: www.ObjectiveCapital.com
Research: www.ObjectiveCapital.co.uk