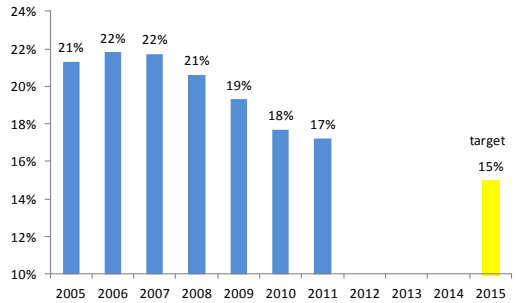
Waste & Environment Services

Overweight

Spring Cleaning

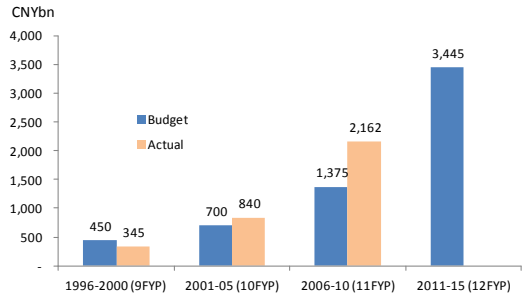
Macro ◆◆◆
Risks ◆◆
Growth ◆◆◆
Value ◆◆

River portion classified as "below Grade V"



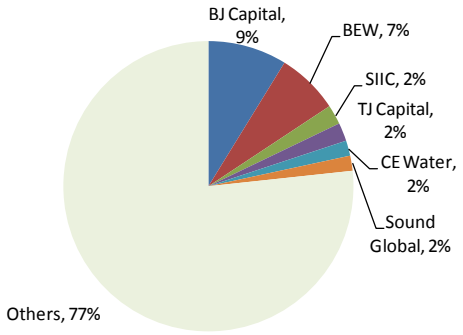
Source: China Environmental Statistics, NDRC, RHB

Environmental protection investment



Source: Ministry of Environmental Protection (MEP), NDRC,RHB

Municipal waste water treatment market share (2014F)



Source: MEP, NDRC, RHB

Unless otherwise mentioned, all share price data are as at the closing prices on 5 Dec 2014.

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We initiate coverage on China's waste treatment sector with an OVERWEIGHT rating. We are positive on Beijing's strong commitment to clean up its environment. Our Top Picks are Sound Global and CT Environmental on their fast growth prospects. However, we are less positive on BEW and CEI, mainly due to their rich valuations.

- **Environmental protection investment.** In its 12th 5-year plan (12FYP) (2011-2015), China budgeted CNY3.4trn for environmental protection, 140%/57% above what was budgeted/actual in 11FYP. The upcoming Water Pollution Prevention and Treatment Plan could assign another CNY2.0trn (2013-2017) on water pollution, ie 45% above 12FYP's.
- **Municipal waste water treatment.** The National Development and Reform Commission (NDRC) budgeted CNY430bn for 12FYP – 30%/14% above 11FYP's budget/actual respectively – to raise treatment rates for cities/counties/towns to 85%70%/30% in 2015 from 77%60%/20% in 2010 respectively
- **Industrial waste water treatment.** Despite an already high treatment rate (95% in 2010), industrial sewage still offers huge opportunities via third-party waste water treatment, which has higher cost efficiencies than self-treating sewage. China's economic slowdown may drag down industrial sewage volume, but the textile industry has better visibility on the recoveries in the US, and improved exports. We prefer the build-own-operate (BOO) as it charges higher, more flexible tariffs.
- **Sludge a new market.** Sludge is highly toxic but its treatment rate was low in 2010, below 25%. The NDRC intends to raise it up to 70% for China's cities in 2015, budgeting CNY35.0bn under 12FYP, 7% more than its 11FYP budget. Guangdong has committed the most to sludge treatment. Its market is large, comprising 11% of China's total new sludge treatment capacity for 12FYP.
- **NDRC favouring waste-to-energy.** The NDRC targets to raise the treatment rate for cities/counties to 90%/70% in 2015 from 78%/27% in 2010 respectively. It plans to raise treatment capacity by 91% in 12FYP, budgeting CNY264bn, or 3x its 11FYP budget. The NDRC prefers incinerators to landfills for electricity generation and smaller required land; >50% of new treatment capacity in 12FYP is for incinerators.
- **Our recommendations.** Our Top Picks are Sound Global (967 HK) and CT Environmental (1363 HK). The former resolved its financing bottleneck in 4Q13 and secured 1.3m tonnes capacity YTD, +132% YoY. The latter provides high earnings visibility, with sludge its new earnings growth driver in 2014-2016F. We are NEUTRAL on Beijing Enterprises Water (BEW) (371 HK) and China Everbright International (CEI) (257 HK). The former's 2015 earnings may decelerate on lack of big M&As in 2014. The latter's WTE projects may encounter construction delays.
- **Risks:** NDRC missing its 12FYP target; ability to secure low-cost financing; higher receivables collection risk in rural areas; project delays and slowdown in China's economy (see page 5 for additional risks.)

Stock Highlights

Company Name	Ticker	Rating	Price HKD	Target HKD	P/E14 x	P/E15 x	EPSG14 %	EPSG15 %	P/B14 x
Sound Global	967 HK	BUY	7.73	12.00	15.3	12.2	20.1	24.6	2.1
CT Environmental	1363 HK	BUY	7.64	9.80	29.6	19.0	28.1	55.5	6.1
Beijing Enterprises Water	371 HK	NEUTRAL	5.00	5.40	25.7	22.2	24.2	15.8	3.0
China Everbright Int'l	257 HK	NEUTRAL	11.36	10.50	30.4	22.2	14.6	36.7	3.5

Source: Company data, RHB

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Investment Summary

Chinese Premier Li Keqiang declared war against pollution in the 12th National People's Congress and called for the building of a "Beautiful China". The water quality of the country's rivers remains bad, with 18% of surface water in 2010 deemed severely polluted. China aims to trim this down to 15% by 2015.

Environmental protection investment. China budgeted CNY3.4trn for environmental protection under the 12FYP, ie 140%/57% above the budgeted/actual for 11FYP respectively. The upcoming Water Pollution Prevention and Treatment Plan will assign CNY2.0trn in 2013-2017 for water projects, 45% above 12FYP's numbers. This shows China's commitment at least until 2017 on this matter.

Municipal waste water treatment, higher budget. The NDRC budgeted CNY430bn for municipal waste water treatment in 12FYP. This was 30%/14% above the budgeted/actual numbers under 11FYP. The huge investment was intended to raise the treatment rate for cities/counties/towns to 85%70%/30% in 2015 from 77%60%/20% respectively. Future municipal sewage volume is on an uptrend, backed by the ongoing urbanisation process. Near-term drivers are: i) the "go rural" (county/town) with still low treatment rates, and ii) a discharge standards upgrade.

Industrial waste water treatment, a more centralised treatment. Despite the already high treatment rate of 95% in 2010, industrial sewage still offers enormous opportunities via waste water treatment by third-parties, which have better cost efficiencies than manufacturers that treat sewage by themselves. China's economy slowdown may drag down industrial sewage volume, but textile industry has better visibility due to the recoveries in the US. We prefer the BOO model for industrial waste water treatment as it charges higher, more flexible tariffs.

Sludge, a new market. Sludge is highly toxic, and its treatment rate was low in 2010 (below 25%). The NDRC plans to raise this rate up to 70% for cities in 2015, and budgeted CNY35.0bn for 12FYP, 7% more than its 11FYP budget. Guangdong has committed the most on sludge treatment and its market is large, accounting for 11% of China's total new sludge treatment capacity for 12FYP. Sludge BOOs can deliver 20% IRR.

For the living solid waste, NDRC favours waste-to-energy. The NDRC will uplift the treatment rate for cities/counties to 90%/70% in 2015 from 78%/27% in 2010. To achieve this target, the commission will raise treatment capacity by 91% in 12FYP with budget of CNY264bn, 3x of its budget set aside for 11FYP. It prefers incinerators to landfills for electricity generation and smaller required land. Over half of the new treatment capacity under 12FYP will be for incineration capacity which will increase by 243% during this period.

Sector rating and stock picks

We initiate coverage on China's waste water treatment and waste-to-energy sectors with an Overweight. We favour companies with fast growth and higher earnings visibility backed by strong project pipeline and financing.

Our Top Picks

i. **Sound Global** – Sound Global resolved its financing bottlenecks in 4Q13 via overseas loans. It has secured 1.3m tonnes capacity YTD (+132% YoY), which is above its target of 1.0m tonnes. An M&A of 1.9m tonnes of water assets from Sound Environmental (000826 CH, NR) in 1H15, together with the go rural policy, is expected to boost its growth. Our HKD12.00 TP is DCF-derived, implying a 19x FY15F P/E, above the sector average of 17x. We forecast Sound Global to deliver a 3-year recurring EPS CAGR of 26%, ahead of the 22% HK-listed sector average growth.

ii. **CT Environmental** – The company is well-positioned in Guangdong, the province with the highest budget on water pollution under the 12FYP. Its BOO projects deliver approximately 20% IRR. Sludge/hazardous waste is expected to become its new earnings growth driver in 2014-2016F. Further M&As are possible backed by huge loans facilities. Earnings visibility is high, and our estimates are based on announced greenfield/M&A projects. Our HKD9.80 TP is DCF-derived, implying 24x FY15F P/E, above the 17x sector average amid higher FY15 EPS growth of 55% vs the sector's 27% growth.

Two less positive stocks

i. **BEW** – We expect its earnings to likely decelerate in 2015, given that there are no more mega-sized M&As slated for the remainder of 2014. We estimate that BEW's current high valuation has already priced in all the positives for 2H14. Our DCF-derived HKD5.40 TP implies a 24x FY15F P/E, ie above the sector's average PE of 17x. This is despite its lower earnings growth of 16% vs the sector's 27%.

ii. **CEI** – CEI delayed the construction of a few waste-to-energy projects amid longer-than-expected government approval times. We cut earnings estimates by 6%/5%/1% for 2014/2015/2016 respectively to reflect the delays, which partially offset new biomass projects won. CEI's waste water treatment development has slowed again after the HanKore Environment Tech Group's (HanKore) (HANKORE SP, BUY, TP: SGD1.19) M&A, with no greenfield project secured YTD. Further waste-to-energy project delays are probable. Maintain NEUTRAL and HKD10.50 TP, which is based on DCF. This implies a 20x FY15F P/E, slightly above the average of its peers of 18x.

Figure 1: Revenue breakdown

	Waste water treatment BOT Construction	Waste water treatment	Tap water distribution	Sludge	BT Construction	EPC Construction	Waste to energy	Others	Total
2013									
Sound Global	12.6%	6.1%	-	-	-	79.2%	-	2.1%	100.0%
CTEG	-	67.4%	-	4.1%	-	-	-	28.5%	100.0%
BEW	13.8%	33.4%	6.0%	-	45.0%	-	-	1.9%	100.0%
CEI	8.5%	15.7%	-	-	-	-	68.0%	7.9%	100.0%
2014									
Sound Global	26.6%	9.3%	-	-	-	62.5%	-	1.7%	100.0%
CTEG	-	45.7%	-	31.5%	-	-	-	22.8%	100.0%
BEW	25.5%	37.0%	9.2%	-	26.6%	-	-	1.8%	100.0%
CEI	1.4%	13.4%	-	-	-	-	77.2%	8.0%	100.0%

Source: Company, RHB estimates

Investment Risks

The NDRC missing 12FYP target. The NDRC set aggressive targets for waste treatment capacity investment and utilisation under the 12FYP. Our market size forecasts are largely based on the Government's targets and, if the NDRC misses those targets, there could be fewer greenfield projects for the industry players, resulting in higher competition that may drag down returns. However, this risk is fairly low because of the increasing concern amongst the public on pollution, and hence tackling pollution becomes one of Chinese Government's top priority tasks.

China's economic/exports slowdown. The slowdown in China's economy and exports could reduce sewage volumes. Industrial waste volume is highly cyclical and more volatile than municipal waste treatment. If China's economy/exports were to slow down sharply, industrial sewage volume and sewage pollutant levels will most probably fall, resulting in lower tariffs charged. Lower treatment capacity utilisation could also squeeze gross margins.

Growing competition in municipal waste water treatment. We see growing competition in bidding for municipal waste water treatment build-operate-transfer (BOT) projects. Leading players in the industry have set aggressive targets and are ready to seize market share via M&As and greenfield waste water treatment projects bidding. The leading players are state-owned enterprises (SOEs), which have a competitive advantage through their larger scale and better access to low-cost debt.

Higher receivables collection risk in rural areas than in large cities. Waste water treatment operators are switching their focus to China's rural areas. However, as the balance sheets of a county or town government are weaker than those of a large city government, projects in county/towns incur higher receivables collection risk than in cities.

No access to low cost financing. Waste water plant projects require heavy capex investment and financing is the critical success factor for the industry. If fundraising becomes difficult, project execution could slow down or be halted. Similarly, if interest rates are trending up, a project's returns will be reduced, resulting in slower capacity expansion.

Project delay risks. Greenfield BOT and/or TOT projects require preparation and government approvals. If the preparation time is longer than expected, construction will be delayed. This, in turn, could result in lower construction revenue, and it could also impact the operating and maintenance (O&M) topline.

Environmental Protection Investment Plan

Significantly higher 12FYP budget

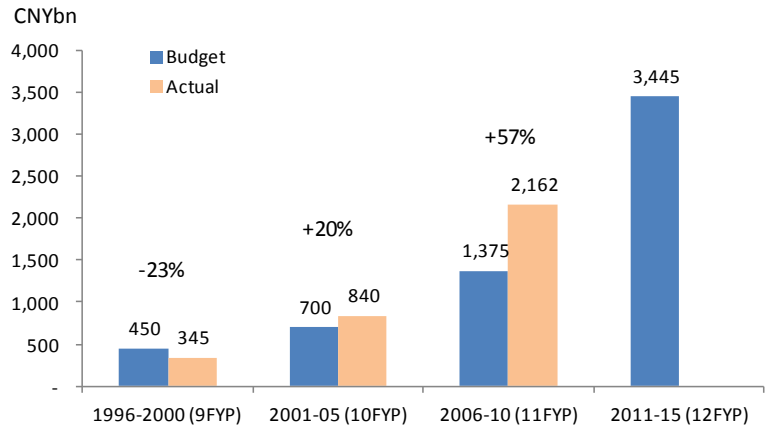
In China's latest 5-year plan (2011-2015), the Ministry of Environmental Protection (MEP) estimates that the "environmental protection investment requirement in China" (全社会环保投资需求) will reach CNY3.4trn, which is 140% and 57% higher than its budgeted and actual investments respectively under the 11FYP. The 11FYP, in turn, was 96% and 63% above the 10FYP's budget and actual investments respectively.

Figure 2: Environmental protection investment budget for 12FYP

Municipal WWT	430
Municipal water supply	410
Key rivers cleanup	500
Underground water cleanup	35
Water	1,375
Air	1,300
Solid waste	770
Total (CNYbn)	3,445

Source: MEP, NDRC, RHB

Figure 3: Environmental protection investment in China



Source: MEP, NDRC, RHB

Water pollution and treatment plan

China will also soon release its "Water Pollution Prevention and Treatment Plan" (水污染防治行动计划), according to YiCai news. In this water plan, the Chinese Government will invest as much as CNY2.0trn in 2013-2017, an amount slightly higher than the CNY1.7trn budget spent on air pollution in the "Air Pollution Prevention and Treatment Plan" (大气污染防治行动计划) released on 12 Sep 2013. This is the first time that an investment budget on water pollution is higher than that of air pollution. More importantly, the water plan for 2013-2017 is 45% hiher than the 12FYP water budget, ie about CNY1.4trn.This huge sum implies the Government's commitment towards tackling water pollution will not halt in 2017.

By 2015, the municipal sewage treatment rate will have reached 100% for 36 key cities and 85% for cities in China overall. To improve water quality further under the 13FYP, NDRC is likely to switch its focus to treatment quality from treatment rate. Still, 37% of the municipal waste water treatment capacity was Standard 2 or below in 2010, according to the Ministry of Housing and Urban-Rural Development (MOHURD). We expect more municipal waste water treatment TOT upgrades to National Standard 1A/1B, or even Beijing Standard 1A/1B, under 13FYP. Besides, NDRC will also continue to escalate the still low treatment rate in 2015 for counties (70%) and towns (30%). The go-rural policy will continue to be the key investment theme in the medium term.

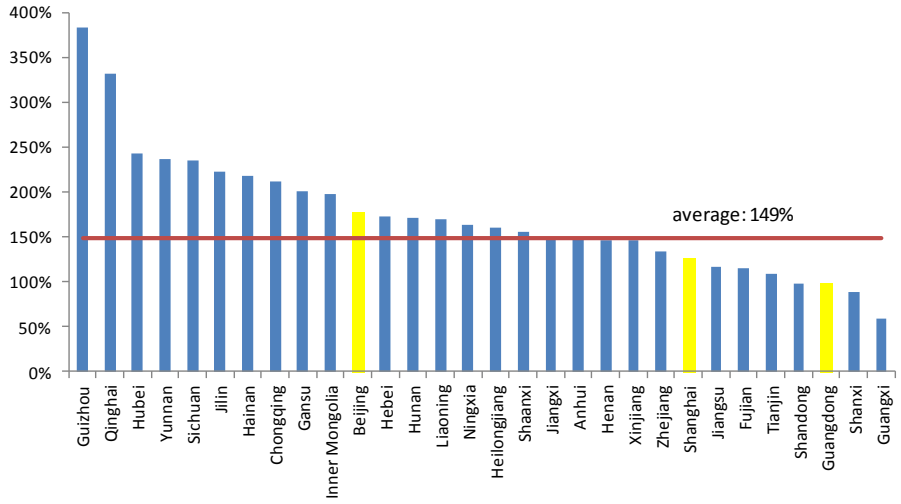
Project Financing

The bottleneck

The major risk against achieving the new capacity installation target is financing. Local governments have been increasing their debt levels in recent years. According to the official audit result, the total local government debt amounted to CNY10.9trn as at Jun 2013, up 43% from CNY6.7trn as at Dec 2010, or a 13% increase in six months from Dec 2012's CNY9.6trn. The local government debt/income ratio was, on average, 149% as at Jun 2013. If local government guarantees/contingent liabilities are also considered as debt, the debt/income ratio is 245% instead.

Provinces in West and South-West China have higher debt/income ratio and hence higher receivables collection risks. Guizhou had the worst ratio with debt amounting to 383% of its 2013 fiscal income, followed by Qinghai (332%). Other Central and South-West China provinces like Hubei, Yunnan, Sichuan, Hainan and Gansu have above average debt/income ratio. By contrast, coastal provinces like Guangdong, Guangxi, Shandong, Tianjin, Fujian, Jiangsu, Shanghai and Zhejiang have lower debt/income ratios because of their stronger fiscal income. For example, Jiangsu and Guangdong have the highest debt levels among all provinces, but their debt/income were 116%/98% respectively, ie below the national average.

Figure 4: Local government debt/fiscal income ratio 2013 (by provinces)



Note:
(1) debt excludes guaranteed and contingent liability
(2) debt level was as of Jun 30, 2013, and fiscal revenue was in 2013
Source: National Audit Office China, CEIC, RHB

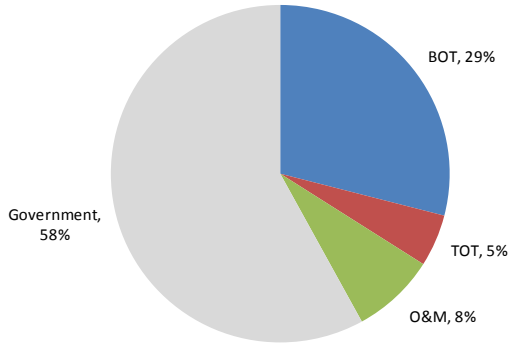
Types: BOT, TOT and BOO

Build-Operate-Transfer (BOT) is the most common form of project financing in China, wherein an enterprise receives a concession from the private/public sector to finance, construct and operate a facility stated in a concession contract. BOT enables the enterprise to recover its investment, operating and maintenance expenses in the project. The enterprise does not own the project and has to transfer the facility back to the owner at the end of the concession period.

Transfer-Operate-Transfer (TOT) is similar to BOT, except that the facility has already been constructed, but it requires upgrading. The enterprise finances the upgrade and then collects tariff to recover its investment spent and appropriate returns.

Build-Own-Operate (BOO) is a project model in which an enterprise undertakes the financing, design, construction, operations and maintenance of a facility. Transfer of the facility is not required.

Figure 5: Municipal waste water treatment by ownership (2010)



Source: MOHURD, H2O-China, RHB

The high gearing situation of local governments creates key opportunities for waste water treatment operators. BOT projects let SOEs/private companies in the industry to fund construction and help a local government achieve the NDRC's target without paying a dollar. The SOEs/private companies receive tariffs as returns and the local government does not incur additional debt to inflate its already high gearing levels, except in contingent liability of guarantees provided to BOT investors. TOT offers similar advantages to local governments on waste water treatment plants upgrade. Such governments are able to use private capital to fund municipal infrastructure construction.

The major risk for companies in this segment lies in sourcing for low-cost funds. SOEs have a competitive advantage in that they are able to access low-cost loans in China, ie SOEs can raise financing via bank loans and low-cost bonds. By contrast, Sound Global for instance, could only raise high-cost bonds in 2012/2013, slowing project execution during that period and inflating finance costs. According to BEW, interest rates in China were on an uptrend, posting risks to waste water treatment project investors, but the interest rate cut by the People's Bank of China (PBOC) in November should reverse the trend, at least in the near term.

We expect supportive policies on financing in order to achieve the 12FYP targets, with the latest one being public-private-partnership (PPP). The Ministry of Finance (MOF) issued its *Notice of Promotion of the Use of Government and Social Capital Cooperation Model* (关于推广运用政府和社会资本合作模式有关问题的通知) on 26 Sep and the Ministry promoted the application of PPP to channel private capital for urbanisation and municipal development. This included tap water supply, waste water treatment and living solid waste treatment. The broad definition of PPP is cooperation between private companies and the Government – BOT, BOO and TOT are all examples of PPP. The narrow definition of PPP is similar to BOT, but the Government will share a stake in the project to lower risk as well as an amount of capital needed by the companies undertaking the project. According to Sound Global chairman Wen Yibo, the Central Government will also provide guarantees or capital support in the construction/early operations stage of PPP projects.

Waste Water Treatment – Municipal

Introduction

Municipal waste water refers to all kinds of sewage that is discharged and collected into drainage systems. It includes rainfall runoff, inflow groundwater, and wastewater from urban households like human waste, washing water, and surplus manufactured liquids like drinks/detergents.

China's river water quality still low

- 17.2% of China's surface water was severely polluted in 2011

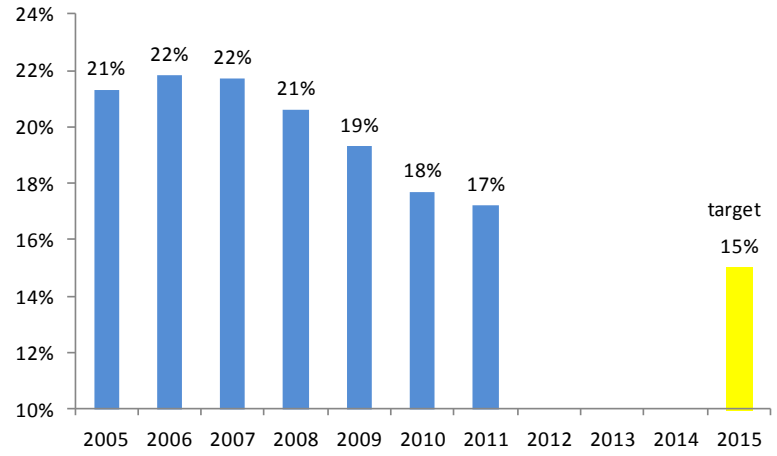
The water quality of rivers and lakes in China is less than satisfactory. In 2011, 17.2% of the total surface water was classified as below Class V, which is severely polluted and not suitable for any purpose. In the last few years, the Chinese Government has been undertaking a tremendous effort in dealing with water pollution and the cleaning up of the country's rivers. Surface water below Grade V dropped to 17.7% in 2010 from 21.3% in 2005, or 3.6ppts improvement under 11FYP (2006-2010). Under the 12FYP (2011-2015), the NDRC intends to go even further, targeting to cut the ratio by 2.7ppts to 15.0% by the end of 2015.

Figure 6: Surface water quality standard

Category	Grade	Application
Drinking water	I	for water source and national nature reserve
	II	for Grade I centralized dirnking water supply and rare water species habitat
	III	for Grade II centralized dirnking water supply, water species wintering gounds and swimming
Polluted	IV	for industrial and recreational water with no contact with human
	V	for agriculture and water landscape
Severely polluted	Below V	not suitable for any purpose

Source: MEP

Figure 7: River portion classified as "below Grade V"



Source: China Environmental Statistics, NDRC, RHB

Figure 8: Selected criteria of water quality standard (mg/L)

	Surface water standard					Discharge standard of municipal WWT plant			
	I	II	III	IV	V	1A	1B	2	3
COD	15	15	20	30	40	50	60	100	120
BOD	3	3	4	6	10	10	20	30	60
Petroleum	0.05	0.05	0.05	0.5	1	1	3	5	15
Anionic Surfactant	0.2	0.2	0.2	0.3	0.3	0.5	1	2	5
Nitrogen	0.2	0.5	1	1.5	2	15	20	NA	NA
Ammonia	0.15	0.5	1	1.5	2	5	8	25	NA
Phosphorus	0.02	0.1	0.2	0.3	0.4	0.5	1	3	5
PH	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-9

Note:
(1) Standard 1A is applied to water recycling and landscape decoration
(2) Standard 1B is applied to water discharged in surface water standard III region
(3) Standard 2 is applied to water discharged in surface water standard IV/V region
(4) Standard 3 is applied to water discharged in non-key rivers/drinking water source, but upgrade plan to Standard 2 must be available.

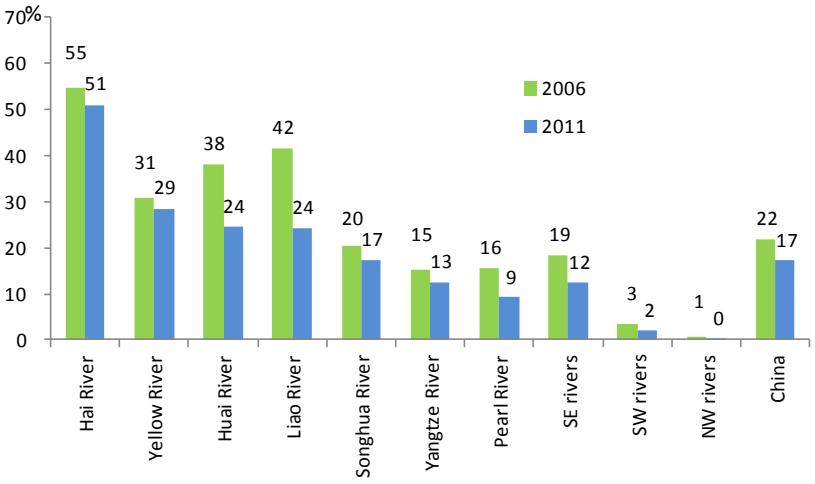
Source: MEP, RHB

The country's longest river, the Yangtze, is in fair condition and its "below Grade V" portion (12.4%) was below the national average of 17.2% in 2011. The Yellow and Liao rivers are moderately polluted and their "below Grade V" portions were significantly above the national average. The Hai River, which flows through Beijing and Tianjin, is the most polluted river in China. Alarmingly, over half of its water (51%) was "below Grade V". The river is short, yet covers key industrial areas like Shanxi, Inner Mongolia, Shandong and Beijing, and about 10% of sewage from heavy/ultra-heavy industries in the country was discharged into the river. The MEP will use more restrictive measures in 12FYP to clean the Hai River.

Figure 9: Key rivers in China

Source: MEP, RHB

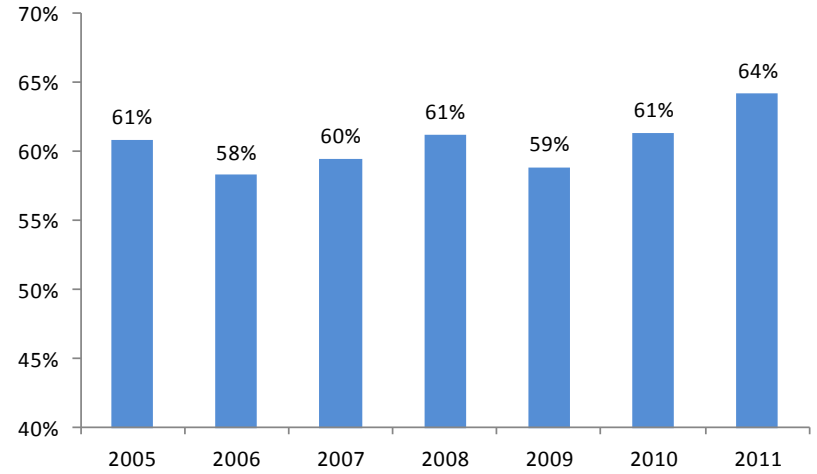
Figure 10: Portion of rivers with water quality below Grade V



Source: National Bureau of Statistics, NDRC, RHB

We anticipate a higher ratio of water quality at the drinking water level in the future. In 11FYP, the NDRC focused on tackling the most severely polluted water, hoping to improve the water quality to low graded (ie Grade IV/V) from non-graded. The drinking water ratio was largely unchanged as a result, with 61.4% of surface water classified as drinking water in 2010, an improvement of a mere 0.5ppts from 2005's numbers. Under the 12FYP, NDRC targets to uplift drinking water ratio by 5ppts in 2015 for the seven key rivers. To accomplish the goal, the Government plans to reduce sewage discharge into rivers and, more importantly, request for higher discharge standards for treated sewage. This leads to more construction upgrades, in terms of BOT/TOT.

Figure 11: Portion of surface water with water quality at drinking water level



Source: China Environmental Statistics, RHB

Aggressive municipal waste water treatment targets for 2015 set

To achieve the target of reducing "below Grade V" water ratio to 15% by 2015, NDRC released a number of action plans for the 12FYP in Apr 2012. These plans are:

i. To increase the municipal waste water treatment rate to 85% in 2015 from 77% in 2010 for cities (36 key cities must achieve 100% while prefecture-level/county-level cities 85%/70% respectively) and counties/towns must achieve 70%/30% (vs 60%/20% in 2010) respectively

ii. To uplift the municipal waste water treatment daily capacity to 208m tonnes in 2015 from 125m tonnes in 2010

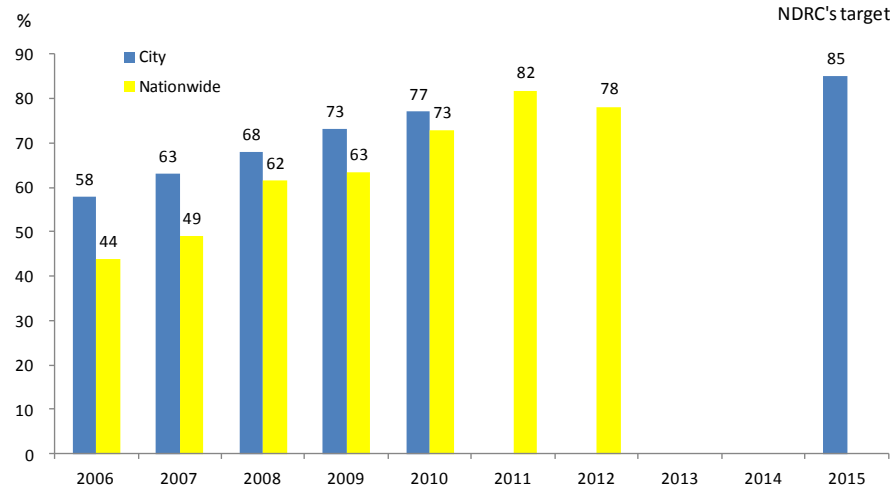
iii. To upgrade 26m tonnes of municipal waste water treatment daily capacity in 12FYP

iv. To uplift sewage pipeline length to 325,000km in 2015 from 166,000km in 2010, or add 159,000km in 12FYP

v. To increase the municipal recycling rate to 15% in 2015 from less than 10% in 2010

vi. To add 27m tonnes municipal recycling daily capacity in 12FYP (or uplift the capacity to 39m tonnes in 2015 from 12m tonnes in 2010).

Figure 12: Municipal sewage treatment rate for key cities in China (%)



Source: MEP, NDRC, RHB

- Capacity investment budget up 48% under the 12FYP is positive to waste water treatment operators

Budgeted CNY430bn for municipal sewage for 12FYP

More municipal treatment capacity and pipelines under the 12FYP require enormous investments. NDRC planned to invest CNY430bn on municipal sewage treatment for 12FYP, ie 30% above its budget in 11FYP and 14% above the actual. Over half (57%) of the investment will be on water pipelines while 43% has been earmarked for treatment capacity construction (64% will be on waste water treatment). Planned investment on treatment capacity will surge 48%, much faster than pipeline's 17%, benefiting Hong Kong-listed waste water treatment operators that invest essentially in treatment capacity only and not pipelines. The upsurge in the capacity investment budget is mainly due to the jump in average waste water treatment investment costs by 72% under the 12FYP. In our view, the increase was attributable to higher treatment standards for new waste water treatment plants and inflation. Higher treatment quality standard will benefit waste water treatment plant constructors like Sound Global and enable municipal waste water treatment investors to charge higher tariffs for better treatment quality requirements.

The planned increase in waste water treatment capacity under the 11FYP was 52m tonnes (37m tonnes involved the completion of construction that started under the 10FYP while 15m tonnes were new starts that were completed in 11FYP). The actual waste water treatment capacity increase under the 11FYP was 65m tonnes, 25% above what was planned. For 12FYP, the NDRC has not revealed how much new capacity construction will be completed under the 13FYP. However, the commission has targeted to uplift the municipal waste water treatment capacity to 208m tonnes in 2015 from 125m tonnes in 2010, implying an additional 83m tonnes, 60% above the 11FYP's planned target completion and 28% above actual capacity increase under the plan.

Figure 13: Budget on municipal waste water treatment investment under the 12FYP

	12FYP				11FYP				Change		
	Budget CNYbn	Breakdown	Add. daily capacity mn tonnes	Average inv. CNY/t	Budget CNYbn	Breakdown	Add. daily capacity mn tonnes	Average inv. CNY/t	Budget	Additional capacity	Average inv.
New start, completed in current FYP			NA				15				
New start, completed in next FYP			NA				43				
New start	69	16.1%	46	1,510	54	16.3%	58	931	27.8%	-21.2%	62.2%
Completion of construction started in last FYP	35	8.1%	38	931	15	4.5%	37	405	133.4%	1.5%	129.8%
New, including constructing	104	24.2%	83	1,249	69	20.8%	95	726	50.7%	-12.4%	72.0%
Upgrade	14	3.2%	26	525	12	3.6%	20	600	14.2%	30.6%	-12.5%
WWT capacity	118	27.4%	109	1,076	81	24.4%	115	704	45.3%	-4.9%	52.8%
Sludge capacity, new ^	35	8.1%	0.0142	2,445,077	32	9.7%	0.0067	4,789,442	7.4%	110.4%	-48.9%
Recycling capacity, new	30	7.1%	27	1,136	10	3.1%	7	1,500	198.0%	293.5%	-24.3%
Capacity investment	183	42.5%	136	1,342	124	37.2%	122	1,014	48.0%	11.8%	32.4%
Sewage pipeline *	244	56.8%	159,000	2	209	62.8%	162,724	1	17.2%	-2.3%	19.9%
Facilities invesmtent	427	99.4%			332	100.0%			28.6%		
Monitoring investment	3	0.6%			-	0.0%			NA		
Total	430	100.0%			332	100.0%			29.5%		

^ In terms of dry sludge
** Sewage pipelines target in km and average investment in CNYm/km*
Source: NDRC, China Environmental Statistics, RHB

Will China spend more than what was budgeted in 12FYP? The country added only 15m/13m tonnes of municipal waste water treatment capacity in 2011/2012 respectively. According to CEI, China's waste water treatment capacity was 162m tonnes as at end-2013, implying only 9.0m tonnes capacity added, which is really low, in our view. Thus China has to accelerate the pace by adding 23m tonnes each in 2014 and 2015, in order to reach its target of 208m daily treatment capacity by end-2015. We expect municipal waste water treatment investment to pick up in 2014-2015. The actual investment under the 11FYP was CNY377bn, 13% more than its budget. The investments in 2011/2012 were CNY97bn/CNY93bn respectively. Based on its 12FYP budget, China will then invest CNY80bn each year in 2013-2015.

We expect China to be able to achieve its total 208m tonnes daily waste water treatment capacity by end 2015. Thus, 23m tonnes new capacity could be added for each 2014/2015. We assume CNY6,000 average investment cost per daily treatment tonne capacity, total municipal waste water treatment investment will reach CNY521bn, 21% above the FY12P budget and 38% above actual investment under the 11FYP.

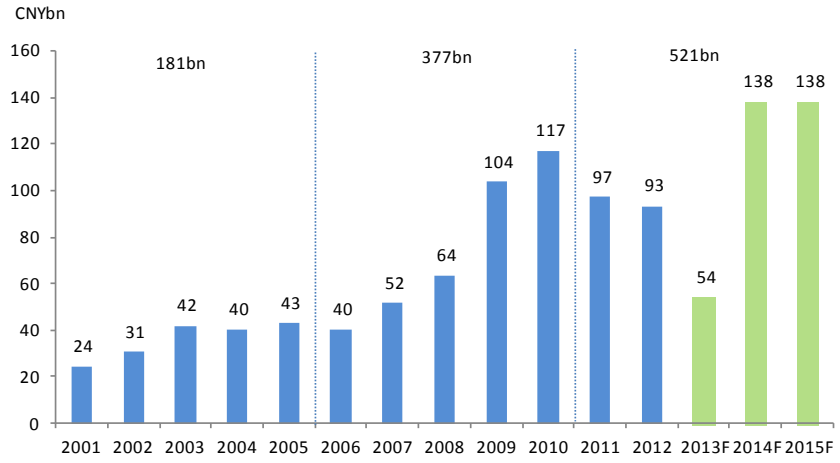
The average investment was CNY6,400/CNY7,100 in 2011/2012 respectively, and we assume CNY6,000 for 2013-2015. We estimate that the average construction cost per waste water treatment capacity is CNY5,000, of which about CNY2,000 is for capacity construction and CNY3,000 for sewage pipelines. CNY1,000 will be for sludge/recycling capacity construction and monitoring investments.

Figure 14: Municipal waste water treatment investment

	Actual investment		New waste water treatment capacity		Average inv.
	CNYbn	YoY%	m tonnes	YoY%	CNYm/tonne
2006	40		8		5,350
2007	52	28%	8	10%	6,257
2008	64	23%	15	81%	4,248
2009	104	63%	14	-7%	7,407
2010	117	13%	20	43%	5,866
2011	97	-17%	15	-24%	6,414
2012	93	-4%	13	-13%	7,061
2013F	54	-42%	9	-32%	6,000
2014F	138	156%	23	156%	6,000
2015F	138	0%	23	0%	6,000
2016F	138	0%	23	0%	6,000
2017F	138	0%	23	0%	6,000
11FYP	377		65		5,814
12FYP	521		83		6,243
Change	38.2%		28.7%		7.4%
2013-17	606		101		6,000

Note: investment including pipelines, sludge treatment capacity and recycling
Source: MEP, RHB estimates

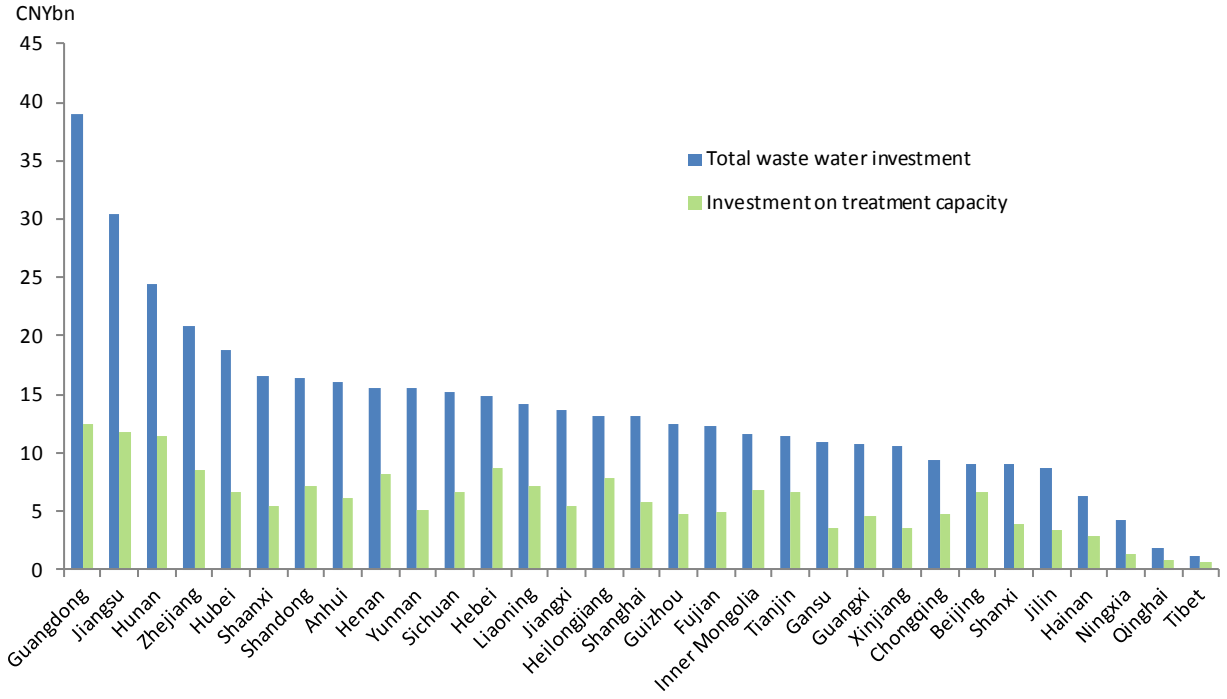
Figure 15: Municipal waste water treatment investment



Note: investment including pipelines and recycling/sludge capacity
Source: China Environmental Statistics, RHB

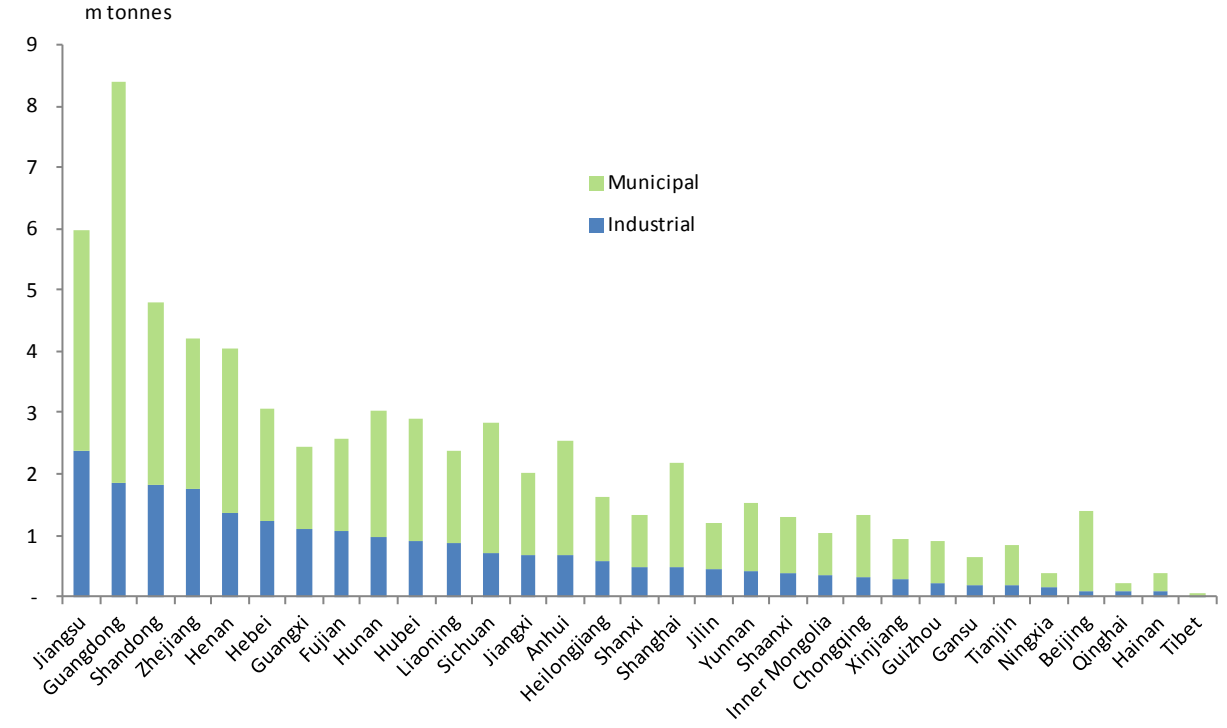
Guangdong is the most committed province when it comes to building a better water environment. According to the NDRC's plan, Guangdong will invest CNY39bn on municipal sewage investment under the 12FYP, the most among all provinces on both treatment capacity and pipeline. Guangdong will then become the largest municipal waste water treatment market under the 12FYP, including related sludge treatment. The province's government itself budgeted CNY62bn for 12FYP, 59% higher than the commission's plan. We see huge upside on the actual investment for 12FYP.

Figure 16: Municipal sewage investment by provinces (12FYP)



Source: NDRC, RHB

Figure 17: Sewage discharged in 2012 by provinces

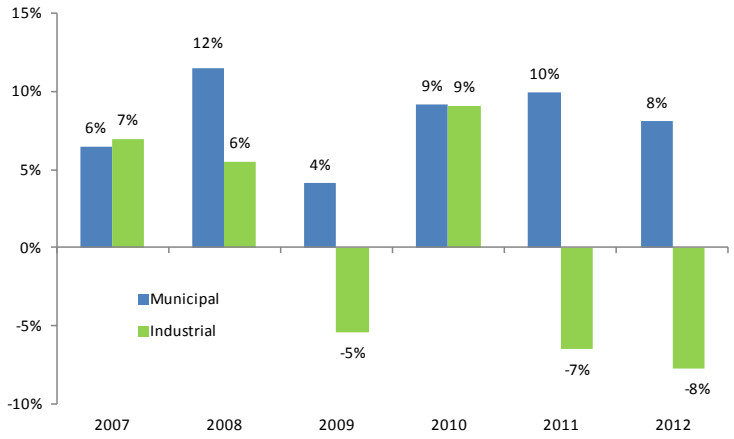


Source: MEP, RHB

Municipal sewage volumes stable

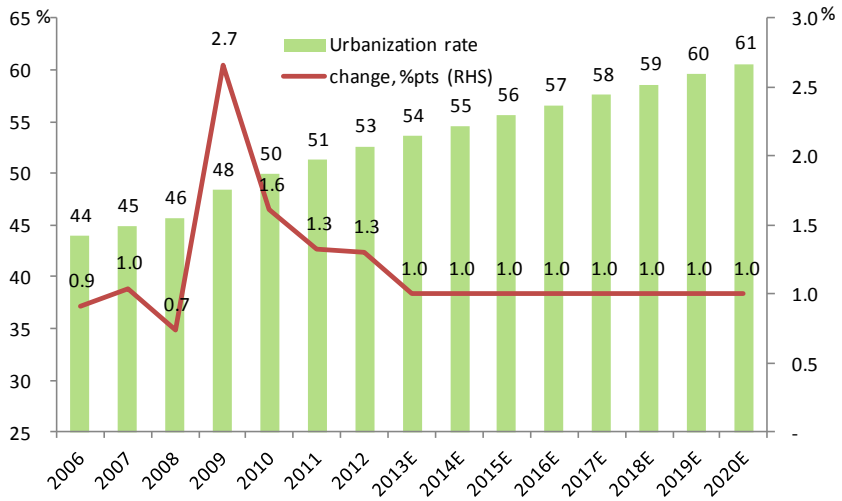
Municipal sewage volume is more stable than industrial sewage, and has been increasing at largely 6-12%, except 2009 when the global financial crisis also hurt China. We believe some of the key drivers of municipal sewage volume are urbanisation, economic growth (for commercial sewage) and, in the longer term, natural population growth. Premier Li decided to use urbanisation as the key economic growth driver in the coming years and targeted to raise urban population portion to 60% in 2020 from 52.6% in 2012, or 1ppt per annum for the next eight years. The rate is below the average urbanisation rate in 2006-2012 of 1.4ppts. Thus, we estimate municipal sewage volume growth will be 7% per annum in 2013-2020, below the average 9% growth in 2007-2012 (excluding 2009). The key risk to our forecast is China's economic slowdown. Our forecast is likely achievable if the country's GDP growth stays at 7%.

Figure 18: Sewage generation growth in China (YoY)



Note: generation = recycle + discharge
Source: China Environmental Statistics, RHB estimates

Figure 19: Urbanisation rate in China



Note: urbanization rate = urban population / total population
Source: China Environmental Statistics, RHB

Our forecast

Municipal sewage treated volume increased by a CAGR of 23% in 2007-2011 because the Government has urged for the treatment of sewage before it is discharged into the country's waterways. The treatment rate jumped to 82% in 2011 from 49% in 2007. The living sewage treated volume growth decelerated to 3% in 2012, below the 8% generated sewage volume. We believe the slower growth may be due to higher rainfall levels in 2012 (the second highest in 2001-2012) and more surface water available to digest municipal sewage. For 2013-2020F, we expect treated sewage volume growth will be same as sewage generated volume growth of 7%. Treatment ratio for living sewage will increase to 89% in 2015 from 73% in 2010 amid slower treated volume growth vis-à-vis discharge volume growth. According to our estimates, the NDRC's target treatment ratio of 85%/70%/30% for cities/counties/towns for 2015 respectively, or 81% overall. Our 89% estimate is not too high – the actual treatment rate in 2010 was 77%, way above NDRC's target of 70%. We expect that, in 2020, China's sewage treatment rate can reach almost 100%.

The recycling of municipal sewage segment has yet to develop. The NDRC has targeted to increase the recycle ratio to 20% in 2015 from 10% in 2010 (this target was revised up from Sep 2013's 15%). It plans to add 27m recycling capacity under the 12FYP, 3x more than its plan under the 11FYP. Recycling is a very effective way of tackling water pollution and keep the environment clean. It reduces not only the amount of clean water drawn from rivers and/or lakes, but also sewage to be discharged into such bodies of water. We factor in a recycling rate of 20%, the same as the NDRC's target, and expect the recycling volume to increase at a CAGR of 52% in 2012-2015. By contrast, discharge volume growth will decelerate to 3% CAGR, ie below the sewage generation volume of 7%.

Figure 20: Municipal sewage discharged, treated and recycled volumes (bn tonnes)

	2006	2007	2008	2009	2010	2011	2012	2013F	2014F	2015F	2016F	2017F	2018F	2019F	2020F
Waste water generated	31	33	36	38	41	46	49	53	56	60	64	69	74	79	85
Waste water treated, living sewage	13	15	20	23	28	35	36	39	41	44	47	51	54	58	62
Waste water treated, total sewage	16	19	24	28	34	40	42	45	48	51	55	58	62	67	71
Waste water recycle	1	2	3	2	3	3	3	4	6	10	12	14	17	19	22
Waste water discharge	30	31	33	36	38	43	46	49	51	50	52	55	57	60	63
Waste water treatment capacity, annual	25	28	33	38	46	51	56	59	68	76	84	93	99	106	112
Waste water treatment capacity, daily *	68	76	91	105	125	140	153	162	185	208	231	254	272	290	308
Change *		8	15	14	20	15	13	9	23	23	23	23	18	18	18
YoY%															
Waste water generated		6.2%	11.7%	4.1%	9.2%	9.9%	8.1%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Waste water treated, living sewage		16.9%	33.6%	10.8%	23.1%	26.4%	3.4%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Waste water treated, total sewage		16.6%	24.7%	18.6%	19.9%	19.6%	3.2%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Waste water recycle		60.0%	112.5%	-29.4%	41.7%	-20.6%	7.4%	27.1%	52.9%	81.9%	18.3%	17.2%	16.3%	15.6%	15.0%
Waste water discharge		4.4%	6.5%	7.6%	7.0%	12.6%	8.2%	5.7%	3.5%	-1.3%	4.7%	4.6%	4.6%	4.5%	4.5%
Waste water treatment capacity, annual		12.6%	19.5%	15.4%	19.1%	12.3%	9.4%	5.7%	14.2%	12.4%	11.1%	10.0%	7.1%	6.6%	6.1%
Ratio															
Treatment ratio	43.8%	49.0%	61.5%	63.4%	72.9%	81.8%	78.2%	79.1%	81.8%	88.6%	90.6%	92.7%	94.8%	97.1%	99.4%
Recycle ratio	6.1%	8.4%	14.3%	8.5%	10.1%	6.7%	7.0%	8.3%	11.8%	20.1%	22.2%	24.4%	26.5%	28.6%	30.8%
Utilisation rate		72.7%	78.0%	78.8%	80.5%	83.4%	77.8%	77.4%	75.2%	71.1%	68.1%	65.9%	65.0%	65.1%	65.5%

** in m tonnes*
Note:
(1) Treatment ratio = waste water treated, living sewage/waste water discharge
(2) Recycle ratio = waste water recycled/waste water treated, total sewage
(3) Utilisation rate = waste water treated, total/waste water capacity, annual
Source: MEP, NDRC, MOHURD, RHB

The utilisation rate of municipal waste water treatment capacity increased from 2006-2011. Despite the fast pace of construction, the utilisation rate was still in an uptrend, due to the dramatic increase in treatment ratios. Although the utilisation rate did fall in 2012, it was still high at 78%. We believe China will add approximately 23m tonnes each in 2014 and 2015, implying 83m tonnes under the 12FYP, in line with NDRC's target.

We expect no big cliff-fall after the 12FYP on capacity addition. China will likely continue to add approximately 23m tonnes of new waste water treatment capacity each in 2016 and 2017, backed by the *Water Pollution Prevention and Treatment Plan* that will cover investments in 2013-2017. Capacity addition will outpace sewage treated volume, and the utilisation rate will inch down to 66% in 2017 from 71% in 2015. After 2017, we expect new capacity addition to fall to 18m tonnes every year in 2018-2020, to keep capacity growth at 6-7%, ie in line with treated sewage volume growth. The utilisation rate will then stabilise. In other words, the current high new waste water treatment capacity projects will last in 2014-2017, creating huge greenfield opportunities for Hong Kong-listed waste water treatment operators.

Go rural: both opportunities and risks

More and more waste water treatment investors have started to expand their operations into China's counties/towns since 2013. Sound Global is actively expanding into the rural market while CEI is also exploring opportunities there. Industry players are going into counties/towns because of the higher competition in the cities, especially the large ones. By contrast, the rural area has yet to be developed and waste water treatment infrastructure projects are currently available. Furthermore, NDRC has targeted to raise the municipal waste water treatment ratio for counties/designated towns to 70%/30% in 2015 from 60%/20% in 2010 respectively. In 12FYP, the NDRC targeted to start new waste water treatment construction of 45.7m tonnes, of which 10.1m/9.6m tonnes will be for counties/towns respectively. This accounts for almost half (43%) of total new construction starts. Decent opportunities are available.

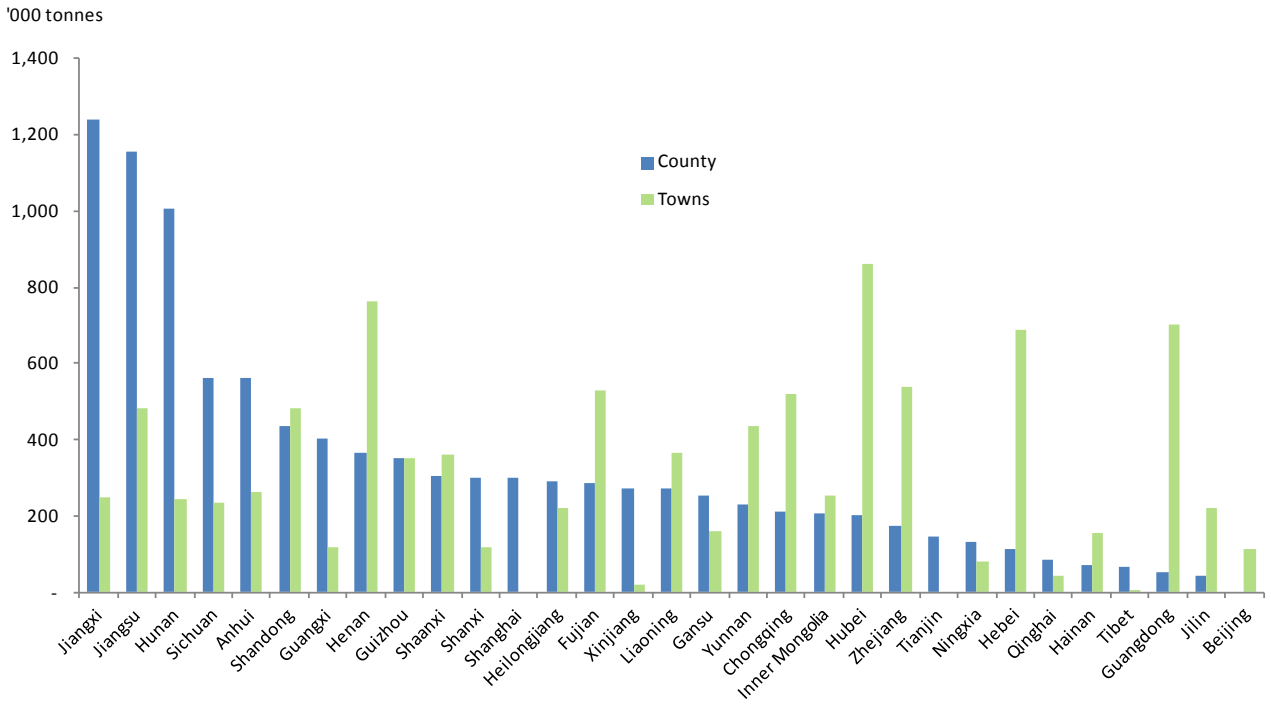
Figure 21: Number of cities/towns and waste water treatment rate

		Municipal waste water treatment rate		No. of cities/towns
		2010 actual	2015F target	
Key cities	重点城市		100.0%	36
Prefecture-level city	地级市		85.0%	285
County-level city	县级市		70.0%	368
City	设市城市	77.5%	85.0%	689
County	县城	60.1%	70.0%	1,453
Town	建制镇	20.0%	30.0%	19,881
Total				22,023

Source: China Environmental Statistics, RHB

Jiangsu, Jiangxi, Hunan, Hubei and Henan are the most active in developing waste water treatment in counties/towns and the five provinces together will add over 1.0m tonnes for counties/towns in 12FYP. On the other hand, Tibet, Beijing, Tianjin and Qinghai are the least active areas, and will add less than 200,000 tonnes daily capacity in 12FYP.

Figure 22: New daily waste water treatment capacity in 12FYP



Note: New waste water treatment capacity in 12FYP excludes completion of waste water treatment construction started in 11FYP.
Source: NDRC, RHB

"Go rural", however, is not without its particular risks. A county/town government's balance sheet is weaker than its city counterpart and receivables collection risks for counties/towns is higher than that of cities. Counties/towns have much lower sewage volume too, about 800-1,000 tonnes daily sewage volume per town vs 100,000 tonnes for a city. Smaller scale can hurt margins.

The average capex for rural waste water treatment projects is about double for municipal waste water treatment, according to Sound Global. Local governments will allow for a doubling of tariffs or grant subsidies to compensate for the higher costs. Hence, rural project's IRR is 9-12%, higher than city projects' 8-12%.

Large waste water treatment companies are still large city-focused. BEW has not rushed into expanding into the rural market, but it is ready to do so if more favourable policies are available. Given its second-largest position in the market, BEW will continue to focus on large cities where the company is competitive, as it is able to leverage on its giant-sized economies of scale and can tender for competitive bidding tariffs given its cost advantages.

Fragmented municipal waste water treatment market

The municipal waste water treatment market is fragmented. Beijing Capital, the market leader, captured a 9% market share in 2013. The market share of the top five players in China has been increasing, but is still low at 21% in 2013. The market is still too fragmented, and many of the waste water treatment projects are in the hands of local governments and smaller operators. Therefore, there is room for further development for the top players via: i) M&As with the smaller players, and ii) bidding for TOT/external O&M projects.

China's daily waste water treatment capacity was only 162m tonnes in 2013, according to CEI. As a result, the country has to add 23m tonnes each for 2014 and 2015 in order to achieve its 12FYP target of 208mn tonne by next year. We expect China can achieve the new capacity target. We also expect new capacity addition will be maintained at similar level in 2016 and 2017, as the NDRC is determined to deal with pollution and will commit CNY2.0trn for 2013-2017 in the soon-to-be-released water plan. The utilisation rate for municipal waste water treatment will be approximately 71% in 2017 and, the treatment ratio will reach 89%. After 2017, new capacity addition will fall to approximately 18m tonnes per annum, in order to keep capacity utilisation rate at the 65-66% level. Capacity growth rate will be 6-7% per annum in 2017-2020, in line with municipal sewage increase growth rate. Competition will increase, and M&As more frequent which could result in a market consolidation.

Figure 23: Daily WWT capacity

	2010	2011	2012	2013	2014F	2015F	2016F	2017F	2018F	2019F	2020F
Daily WWT cappacity											
BEW	4.4	5.8	6.6	10.2	12.6	15.5	18.9	22.8	26.7	30.6	34.5
BJ Capital	12.0	13.0	14.0	15.0	16.0	17.0	18.0	20.0	22.0	24.0	26.0
SIIC				3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
CE Water	1.6	1.6	1.6	1.9	3.1	4.1	5.1	6.1	7.1	8.1	9.1
TJ Capital	4.1	3.2	3.8	3.7	3.7	4.2	5.2	6.2	7.2	8.2	9.2
Sound Global		0.9	1.2	1.7	3.1	6.4	7.7	9.0	10.0	11.0	12.0
Others	102.8	115.5	126.1	126.5	142.6	155.8	170.1	182.9	191.0	199.1	207.2
China (m tonnes)	124.8	139.9	153.1	162.0	185.0	208.0	231.0	254.0	272.0	290.0	308.0
Change											
BEW		1.4	0.8	3.6	2.4	2.9	3.4	3.9	3.9	3.9	3.9
BJ Capital		1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
SIIC		-	-	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
CE Water		-	-	0.3	1.2	1.0	1.0	1.0	1.0	1.0	1.0
TJ Capital		(0.8)	0.6	(0.1)	-	0.5	1.0	1.0	1.0	1.0	1.0
Sound Global		0.9	0.3	0.6	1.3	3.4	1.3	1.3	1.0	1.0	1.0
Others		12.7	10.6	0.5	16.1	13.2	14.3	12.8	8.1	8.1	8.1
China (m tonnes)		15.1	13.2	8.9	23.0	23.0	23.0	23.0	18.0	18.0	18.0
YoY%											
BEW		32.1%	14.1%	54.5%	23.6%	23.0%	22.0%	20.7%	17.1%	14.6%	12.8%
BJ Capital		8.3%	7.7%	7.1%	6.7%	6.3%	5.9%	11.1%	10.0%	9.1%	8.3%
SIIC					33.7%	25.2%	20.1%	16.8%	14.4%	12.6%	11.2%
CE Water		0.0%	0.0%	21.3%	64.4%	32.4%	24.4%	19.6%	16.4%	14.1%	12.4%
TJ Capital		-20.8%	17.5%	-2.0%	0.0%	13.5%	23.8%	19.2%	16.1%	13.9%	12.2%
Sound Global			27.5%	49.4%	76.4%	110.7%	20.2%	16.8%	11.1%	10.0%	9.1%
Others		12.3%	9.2%	0.4%	12.7%	9.3%	9.2%	7.5%	4.4%	4.2%	4.1%
China		12.1%	9.5%	5.8%	14.2%	12.4%	11.1%	10.0%	7.1%	6.6%	6.2%
Market share											
BEW	3.5%	4.1%	4.3%	6.3%	6.8%	7.4%	8.2%	9.0%	9.8%	10.5%	11.2%
BJ Capital	9.6%	9.3%	9.1%	9.3%	8.6%	8.2%	7.8%	7.9%	8.1%	8.3%	8.4%
SIIC	0.0%	0.0%	0.0%	1.8%	2.1%	2.4%	2.6%	2.7%	2.9%	3.1%	3.2%
CE Water	1.2%	1.1%	1.0%	1.2%	1.7%	2.0%	2.2%	2.4%	2.6%	2.8%	3.0%
TJ Capital	3.3%	2.3%	2.5%	2.3%	2.0%	2.0%	2.3%	2.4%	2.6%	2.8%	3.0%
Sound Global	0.0%	0.7%	0.8%	1.1%	1.7%	3.1%	3.4%	3.6%	3.7%	3.8%	3.9%
Others	82.4%	82.5%	82.3%	78.1%	77.1%	74.9%	73.6%	72.0%	70.2%	68.7%	67.3%
Overall	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

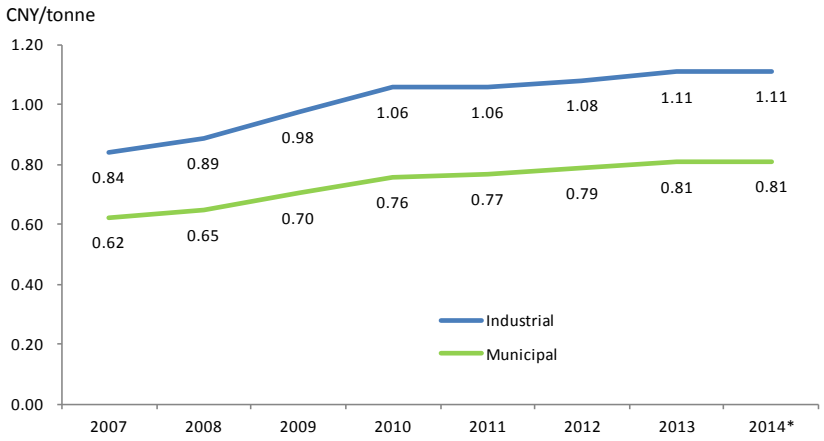
Note 1: including only BOT/TOT projects
Note 2: including non operating capacity
Source: China Environmental Statistics, NDRC, Company, RHB

Municipal waste water treatment tariff in an uptrend

Municipal waste water treatment tariffs have been rising. The average municipal tariff increased by 5% CAGR during 2007-2013. Local governments allow tariff hikes for increased operating costs or for higher treatment standards. To operate a municipal waste water treatment plant, electricity expenses are the largest expense (of approximately 33%), followed by staff cost (16%). Together they account for 49% of the total operating cost, according to BEW. Electricity costs increased in 2007-2012 due to increasing coal prices and are not expected to fall due to renewable energy development. Labour costs have also been on an uptrend. Thus, future operating costs are likely to continue increasing. Most municipal waste water treatment projects are under the BOT model, and waste water treatment operators negotiate with local governments for tariff hikes for every 2-3 years within the concession period.

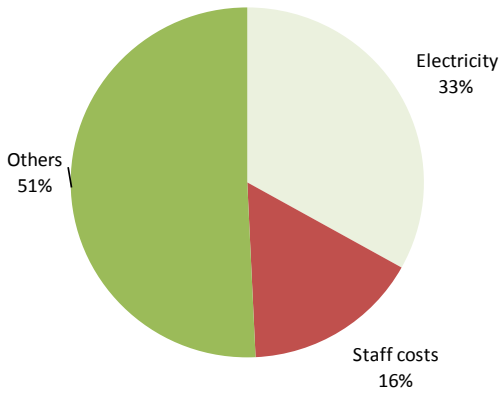
CT Environmental is industrial waste water treatment-focused, and its operating cost mix is different from BEW's. Its raw materials accounted for 41% of total cost of services (excluding heating services) in 2013, while raw materials accounted for 6% of cost of services of Tianjin Capital (1065 HK, NR), which is engaged in municipal waste water treatment. Industrial sewage is much more environmentally polluting, and requires more chemicals for treatment. As a result, CT Environmental's Xinzhou plant charges CNY5.0/tonne, while Tianjin Capital's charges CNY0.80/tonne for its BOT plants in Tianjin.

Figure 24: Average sewage treatment tariffs in key cities



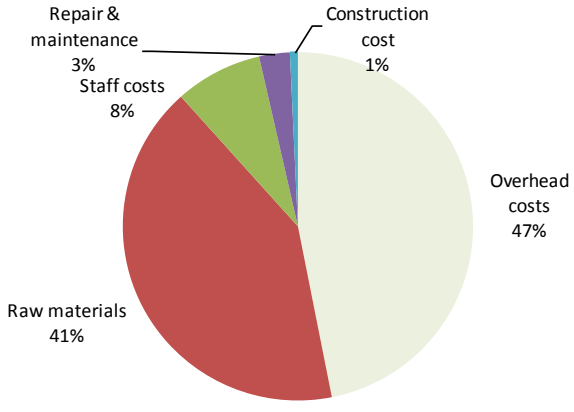
** First eight months*
Source: H2O China Water Net, RHB

Figure 25: Cost breakdown of BEW in 2013



Note: Costs excludes construction cost
Source: Company data

Figure 26: Cost breakdown of CT Environmental in 2013



Note1: Cost excludes cost related to heating services
Note2: Overheads include depreciation, utilities, security fees, laboratory tests & travelling
Source: Company data

Treatment quality upgrade can raise tariffs. Waste water treatment investors can either construct a new waste water treatment plant with higher treatment quality standards or upgrade existing plants. National discharge Standard 1A accounted for only 15% of total municipal waste water treatment capacity in 2012 while those below the national discharge Standard 1 accounted for 37%. Thus, future TOT projects for upgrades are tremendous.

Despite the national discharge Standard 1A being the highest standard, it is still slightly below the surface water Standard V. Thus, if the treated sewage is still contaminative in nature, it becomes another source of contamination to the country's rivers and lakes.

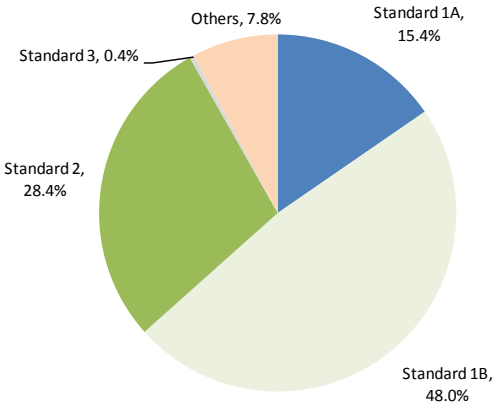
To completely resolve the problem, Beijing set its own, more stringent discharge standard, 1A/1B, in 2012. Beijing Standard 1A/1B is almost equivalent to surface water Grade III/IV. Note that Grade III water is suitable for drinking. The Beijing Government required Standard 1A for discharge in Grade II/III surface water, and Standard 1B for discharge in Grade IV/V surface water. The more stringent standards require more capex, and we expect more projects adopting this standard under the 13FYP.

Figure 27: Beijing discharge standards for treated sewage (2012)

mg/L	Surface water standard					Discharge standard of municipal WWT plant			
						Beijing (2012)		National	
	I	II	III	IV	V	1A	1B	1A	1B
COD	15	15	20	30	40	20	30	50	60
BOD	3	3	4	6	10	4	6	10	20
Petroleum	0.05	0.05	0.05	0.5	1	0.05	0.5	1	3
Anionic Surfactant	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.5	1
Nitrogen	0.2	0.5	1	1.5	2	10	15	15	20
Ammonia	0.15	0.5	1	1.5	2	1	1.5	5	8
Phosphorus	0.02	0.1	0.2	0.3	0.4	0.2	0.3	0.5	1
PH	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-9

Note: New waste water treatment capacity in 12FYP excludes completion of waste water treatment construction that started under the 11FYP.
Source: NDRC, RHB

Figure 28: Municipal waste water treatment capacity by discharge standard (2010)



Source: MOHURD

Waste Water Treatment – Industrial

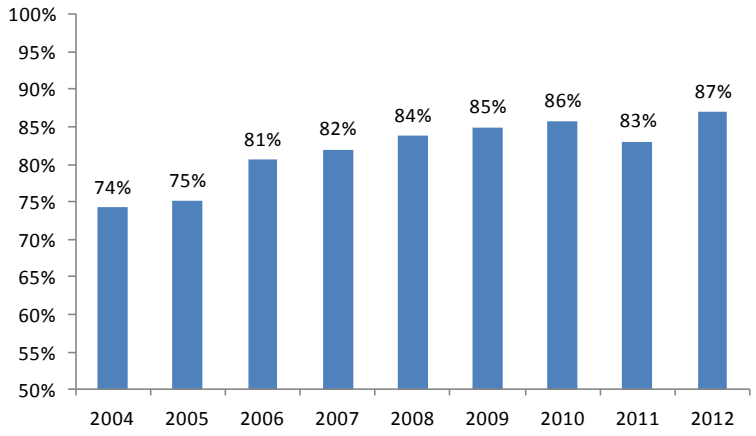
- Treatment ratio >95%

Industrial waste water treatment well-developed

Industrial waste water treatment development started much earlier than municipal waste water treatment. The sewage treatment rate already reached 95% in 2010, significantly higher than municipal's 77%. The treatment rate should have increased further after 2010, since the Government actively banned untreated industrial sewage discharge. To completely deter illegal discharge, the NDRC is improving its monitoring processes. On 1 Sep, it announced that it would extend coverage of its automatic sewage monitoring system to key enterprises that can install the system by end-2014. The NDRC will then extend this to all enterprises in key polluting industries (eg steel, paper and cement) by end-2015, and then to all enterprises by end-2016.

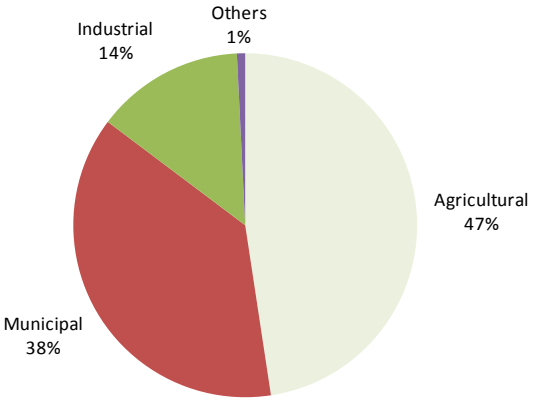
Recycling is more common for industrial sewage. As much as 87% of industrial sewage was recycled in 2012, ie 12x higher than the rate for municipal sewage (7%). The Government has been encouraging recycling in order save surface water consumption. Moreover, recycling is perhaps the most effective way to minimise sewage discharge volume and, hence, water pollution. Thus, the recycling rate for the industrial segment has escalated to 87% in 2012 from 74% in 2004. Many large, sophisticated manufacturers, particularly highly polluting industries, can achieve zero discharge. We expect the recycling rate to further increasing going forward.

Figure 29: Industrial sewage recycle rate



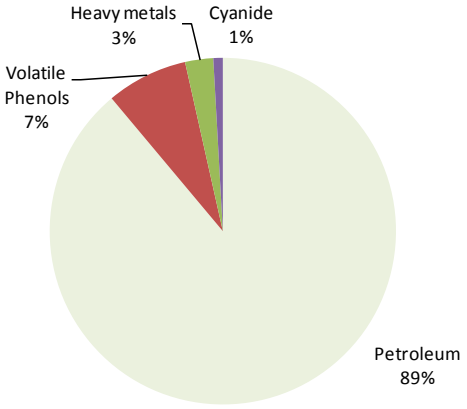
Source: MEP, RHB

Figure 30: COD discharged by segments in 2012



Note: COD is used to indirectly measure the amount of organic compounds in water
Source: MEP, RHB

Figure 31: Contaminants inside industrial sewage discharge

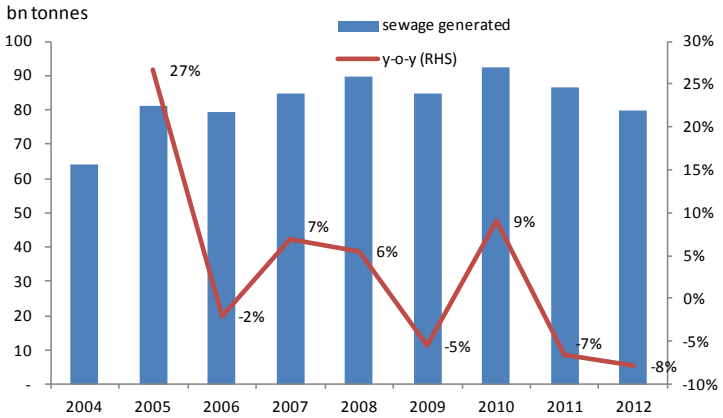


Note: organic waste and ammonia nitrogen are excluded
Source: MEP, RHB

Sewage volume more cyclical

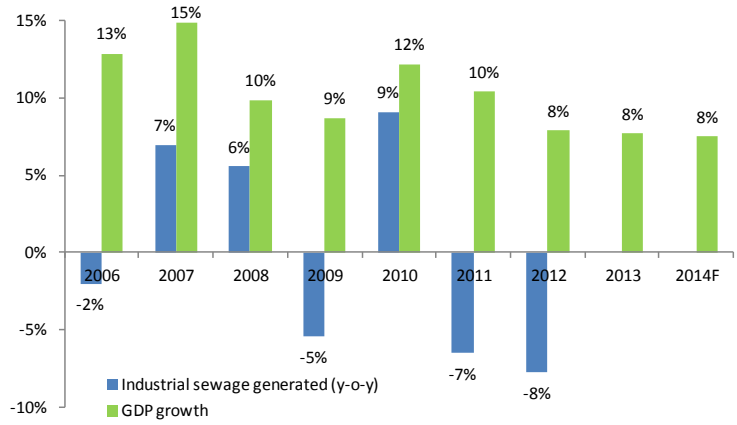
Industrial sewage volume is more cyclical than municipal sewage. It fell 5% YoY in 2009 when the global financial crisis occurred. The macroeconomic tightening in China in 2011/2012 and the subsequent economic slowdown also dragged down industrial sewage volume by 7%/8% respectively, according to our estimates. Since China's economy will continue to slow down to about 7.5% in 2014 from 7.8% in 2013, according to Premier Li's target, industrial sewage volume will likely continue to decline. However, the drop will be less than that in 2011/2012. Beyond 2014, if China's GDP growth can stay at 7%, further declines in industrial sewage volume should be mild.

Figure 32: Industrial waste water generated



Note: Generated = discharge + recycle
Source: MEP, RHB

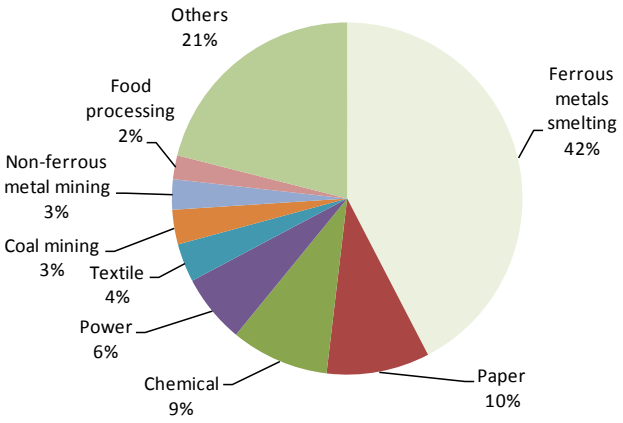
Figure 33: Industrial sewage generated vs GDP in China



Source: MEP, National Bureau of Statistics of China

The industrial sewage is mainly from ferrous metals from the smelting industry, which uses huge amounts of water for cooling/washing. Ferrous metal smelting accounted for 42% of the total industrial sewage treated volume in 2012 while the country's Top 8 industries accounted for almost 80% in total. Large SOEs exist in the ferrous/non-ferrous metal smelting, chemical and power industries, and they prefer to treat their own sewage. Therefore, industries that commonly utilise third-party waste water treatment operators are textile, paper and food processing. For example, at least 80% of CT Environmental's industrial waste water treatment capacity is for textile, and the rest is for paper-making and food processing. Sound Global's recent industrial waste water treatment projects are for food processing and printed circuit board manufacturing.

Figure 34: Industrial sewage treated volume by industry in 2012



Source: China Environmental Statistics

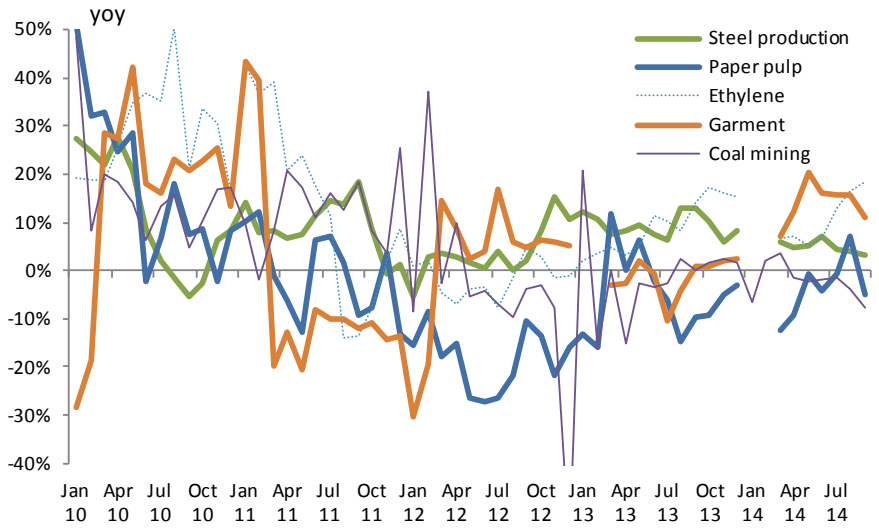
Textile's better visibility

Among industries with high sewage volume, steel production has been slowing down in 2014, dragged by a slowdown on China's fixed asset investment (FAI) on infrastructure/real estate. Coal mining volume is falling and coal demand will be weak, given its permanent replacement by clean energy and the country's weak economy. Paper pulp production is recovering from the worst. Paper demand is more related to China's and the world's economic conditions, though we do see the US recovering on the right track.

Garment production, on the contrary, is showing sign of recovery and has recorded moderate growth since mid-2014. We believe the recovery is in tandem with the improving garment exports to the US. Production volume growth of yarns and garments rose to double-digits since May while pile fabrics increased by 20% YoY in 9M14.

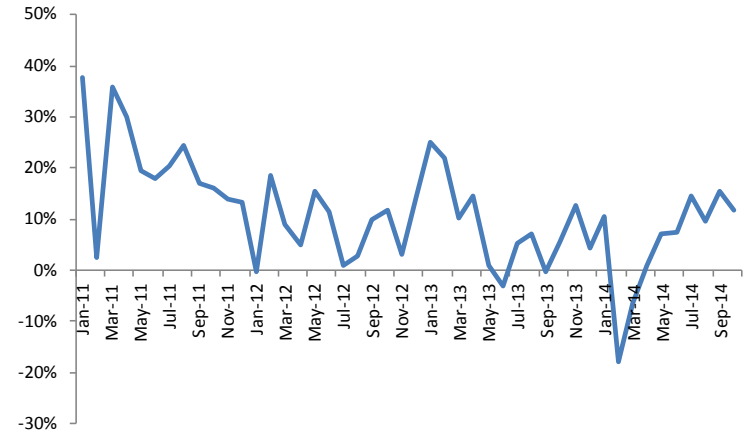
China export is recovering from the worst in 1Q13. With a stronger USD and better economic outlook in the US and the reverse of monetary easing, garment exports will help offset the slowdown in China's economy and facilitate the maintenance of stable industrial sewage volume. China's recent interest rate cut (in Nov 2014) will accelerate CNY depreciation.

Figure 35: Production volume change in China by industries (YoY)



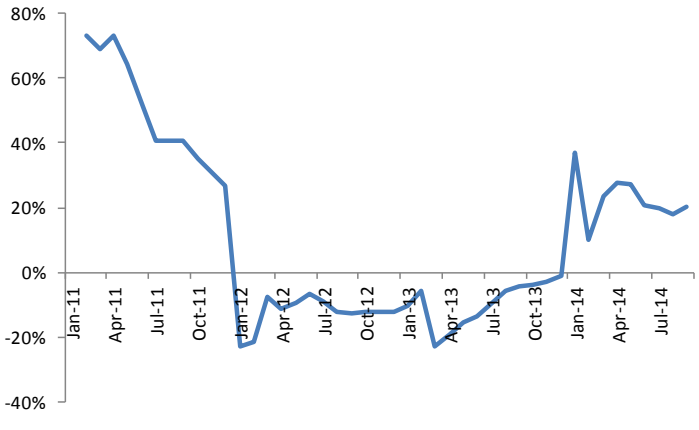
Source: CEIC, RHB

Figure 36: China's export value (YoY)



Source: CEIC, RHB

Figure 37: Export value of pile fabrics YTD (YoY)



Source: CEIC, RHB

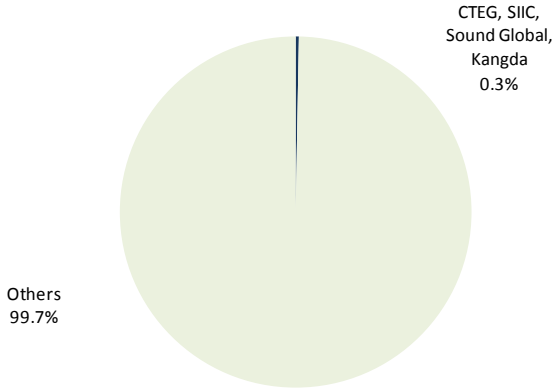
Centralised waste water treatment still uncommon

The NDRC reiterated its preference on third parties waste water treatment operators in Sep 2014. Most of factories equip waste water treatment facilities and treat their own sewage. In fact, centralised waste water treatment saves not only management costs, but also chemical costs as industrial sewage from different sources can neutralise themselves. Specialised waste water treatment operators also have higher expertise in waste water treatment, further enhancing operational efficiency. Thus, third-party operators have cost advantages over self-sewage treatment, especially for smaller factories.

Among Hong Kong-listed waste water treatment companies, only CT Environmental, Sound Global and Kangda International Environmental (Kangda) (6136 HK, NR) have waste water treatment projects for industrial sewage. Together with SIIC Environment (SIIC) (SIIC SP, Buy, TP: SGD0.188), they account for only 0.3% of industrial waste water treatment capacity in 2013. Therefore, there is huge room for third-party waste water treatment expansion. Large SOE operators focused on municipal waste water treatment in the past, but they are ready to enter the industrial waste water treatment segment amid higher tariffs available there and, hence, higher returns.

SOE waste water treatment operators still prefer the BOT model to BOO for industrial waste water treatment. This is in order to save management and administration efforts/costs. They also need to negotiate with local governments only and not individual clients or factories. Such firms also favour external O&M contracts, which do not require capex from the waste water treatment operators, hence, minimising the risk of economic cycles

Figure 38: Industrial waste water treatment capacity breakdown (2012)



Note:
(1) including only BOT, TOT, and BOO
(2) including municipal- industrial mixed WWT projects
Source: Companies data, RHB

Higher tariffs than municipal

According to *H2O China*, the average industrial waste water treatment tariff was CNY1.11/tonne in 2013, 37% above municipal's tariff of CNY0.81. Industrial sewage is way more polluting than municipal sewage. For example, industrial sewage chemical oxygen demand (COD) is 2,000-3,000 on average for CT Environmental but, in extreme cases, it can reach 10,000. Industrial waste water treatment projects charge higher tariff. If a BOO model is used, industrial waste water treatment tariff can reach CNY2-5/tonne. Thus, CT Environmental can enjoy 20% IRR for BOO industrial waste water treatment project but only 10-12% IRR for BOT municipal/industrial waste water treatment.

BOO model preferred

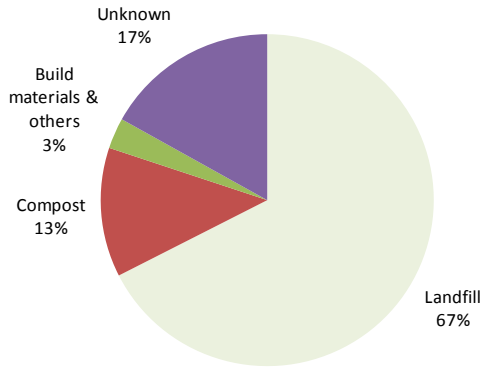
For industrial sewage clients (mainly factories), we prefer BOO over BOT. This is because BOO generates higher returns, as waste water treatment operators can charge higher rates from its clients for treating raw sewage. Under BOT, clients have to pre-treat sewage by themselves before discharging it to the waste water treatment operators. The sewage discharged to the operators is often inadequately pre-treated, resulting higher cost for operators. What's more, it can adjust tariffs for different clients based on sewage quality and the contract terms renewal is more flexible, ie one year for BOO vs three years for BOT.

Waste Water Treatment - Sludge

Sludge treatment, an undeveloped market

Sludge represents the residuals that accumulate after sewage is treated. It is highly toxic, comprising nitrogen, phosphorus, potassium, organic ingredients and toxic components. It is also 80% water. Sludge treatment is an undeveloped market, and the treatment rate is below 25% even in China's large cities. In the past, untreated sludge was directly dumped into landfills, further creating pollution. Besides, as raw sludge contains a high level of water, the direct disposal method affects the structure of a landfill. Therefore, NDRC included sludge for its municipal waste water treatment 12FYP. Sludge treatment itself started to arouse public awareness and business interest. The projected IRR for such treatment is as high as 20%, according to CT Environmental.

Figure 39: Sludge handling method (2011)



Source: H2O-China

Capacity growth – NDRC sets aggressive target for 12FYP

The NDRC targets to raise the sludge treatment ratio to 80% for 36 key cities, 70% for all cities, and 30% for counties and towns from less than 25% in 2010. Thus, treated sludge volume will surge 3x for cities in 2015 when compared to 2010. To achieve the higher treatment target, NDRC targets to add 5.2m capacity annually, ie almost tripling its sludge annual treatment capacity to 8m tonnes in 2015 from 2.8m tonnes in 2010.

China has completed about 43% of its target additional sludge treatment capacity as at Dec 2013, according to MOHURD. The implied annual additional was 749,000 tonnes in 2011-2013. Therefore, local governments must accelerate their construction and add 1.5m tonnes each in 2014 and 2015 in order to achieve the 12FYP target. In our view, more greenfield sludge projects will be available, and favourable policies like subsidies and availability of bank loans will continue.

Figure 40: The NDRC's 12FYP target for sludge

	Treatment rate		Annual treatment capacity ('000 tonnes)			
	2010	2015	2010	2015	Change	%
36 key cities	<25%	80%	NA	NA	NA	NA
City	<25%	70%	2,540	6,370	3,830	151%
County	<25%	30%	250	1,230	980	392%
Designated town	<25%	30%	-	370	370	NA
Total	NA	NA	2,790	7,970	5,180	186%

Note: sludge capacity in terms of dry sludge
Source: NDRC

The NDRC budgeted CNY35bn for 12FYP, 7% more than its 11FYP budget. The moderate growth implies that average investment cost will drop by almost 50% in 12FYP vis-à-vis 11FYP. The dramatic decline in average cost is likely due to better design and technology in sludge treatment plants that will substantially enhance treatment efficiency. Besides, capacity construction was limited under the 11FYP and the larger construction scale under the 12FYP can help average down investment costs.

Sludge volume, boosted by higher treatment rate

Since sludge is the residual that linger after sewage is treated, its volume is directly correlated to sewage treatment volume growth. Sludge ratio is the amount of dry sludge per 10,000 tonnes sewage. The ratio for municipal waste water treatment is slightly above one tonne of dry sludge per 10,000 tonnes of sewage, or 0.010%. We expect municipal waste water treatment to grow at 7% per annum in 2013-2020. By contrast, we expect municipal sludge treatment volume to have over 30% CAGR under the 12FYP, riding on increasing sludge treatment rate as requested by the NDRC. We expect sludge treatment volume to grow at 20% per annual growth till 2018, when the treatment rate will reach 98%.

The NDRC targets to have 208m tonnes of daily municipal waste water treatment capacity by end 2015. If we use sludge ratio of 0.011%, the required sludge treatment capacity is 8.4m tonnes, while the NDRC's target of 8m tonnes by end-2015 can largely meet the need for new municipal waste water treatment capacity.

Figure 41: Sludge volume from municipal waste water (m tonnes)

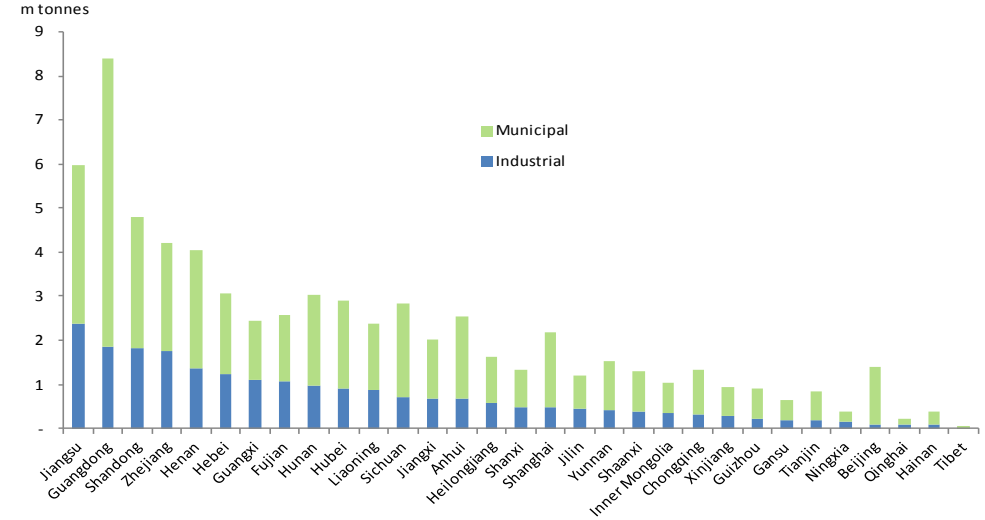
	2007	2008	2009	2010	2011	2012	2013F	2014F	2015F	2016F	2017F	2018F	2019F	2020F
WW generated	32,600	36,400	37,900	41,400	45,500	49,200	52,644	56,329	60,272	64,491	69,006	73,836	79,004	84,535
WW treated	19,000	23,700	28,100	33,700	40,300	41,600	44,512	47,628	50,962	54,529	58,346	62,430	66,801	71,477
Sludge generated	2.2	2.7	3.2	3.9	4.6	4.8	5.1	5.5	5.9	6.3	6.7	7.2	7.7	8.2
Sludge treated			0.5	1.0	1.4	1.8	2.2	3.1	4.0	4.9	5.9	7.0	7.7	8.2
Sludge capacity, annual				2.8	3.5	4.3	5.0	6.5	8.0	9.1	10.2	11.3	11.6	11.7
Change *					0.7	0.7	0.7	1.5	1.5	1.1	1.1	1.2	0.3	0.1
YoY%														
WW generated		11.7%	4.1%	9.2%	9.9%	8.1%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
WW treated		24.7%	18.6%	19.9%	19.6%	3.2%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Sludge generated		24.7%	18.6%	19.9%	19.6%	3.2%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Sludge treated				77.3%	46.0%	27.2%	23.1%	37.9%	30.4%	22.7%	20.7%	19.2%	9.2%	7.0%
Sludge capacity, annual					26.9%	21.2%	17.5%	29.1%	22.5%	13.7%	12.4%	11.5%	2.6%	0.9%
Ratio														
Sludge ratio	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Sludge treatment rate			16.9%	25.0%	30.5%	37.7%	43.3%	55.8%	68.0%	78.0%	88.0%	98.0%	100.0%	100.0%
Utilisation rate				34.7%	40.0%	42.0%	44.0%	47.0%	50.0%	54.0%	58.0%	62.0%	66.0%	70.0%

Source: MEP, National Bureau of Statistics, NDRC, RHB

Guangdong/Jiangsu committed the most on sludge

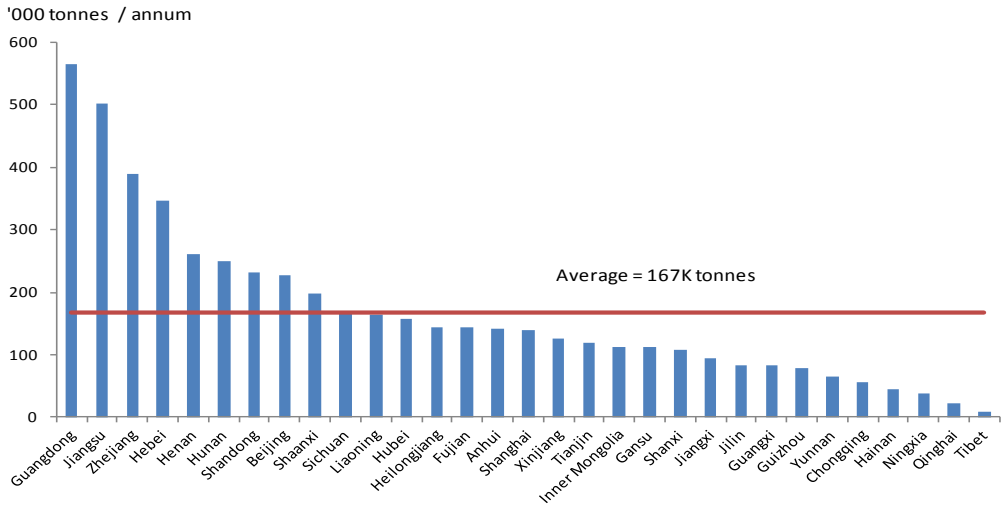
Guangdong targets to build 566,000 tonnes new sludge treatment capacity under the 12FYP, the highest among all provinces. This is followed by Jiangsu, with 502,000 tonnes. Their huge commitment towards sludge capacity construction is attributable to their highest amount of sewage discharged in 2012. The two provinces also committed the most towards municipal waste water treatment capacities, adding 3.1m (Guangdong) and 2.5m (Jiangsu) daily tonnes under the 5-year plan. Other high sewage discharged volume provinces like Shandong, Zhejiang, Henan and Hebei are also committed to adding above average sludge treatment capacity under the 12FYP.

Figure 42: Sewage discharged in 2012 by provinces



Source: MEP, RHB

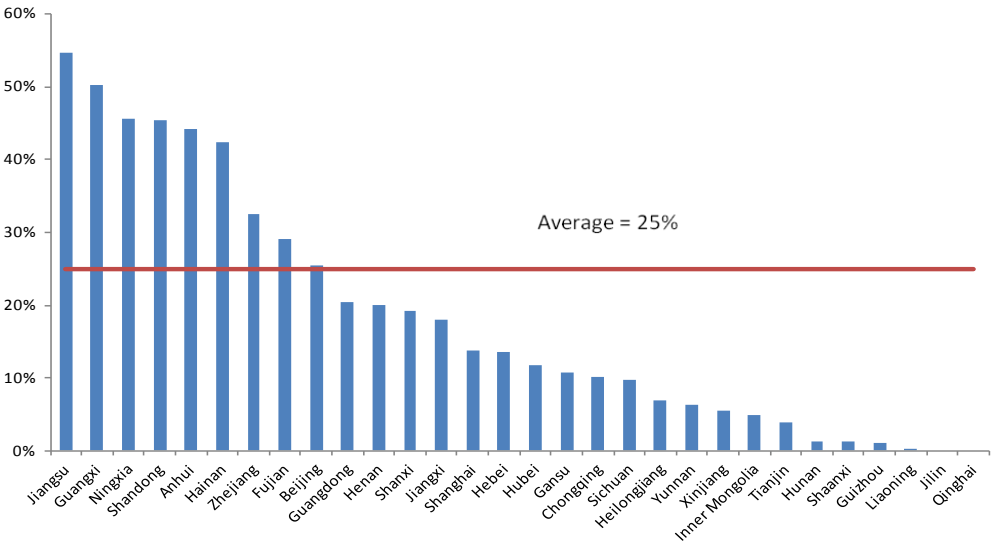
Figure 43: New sludge treatment annual capacity in 12FYP



Note: in terms of dry sludge
Source: NDRC

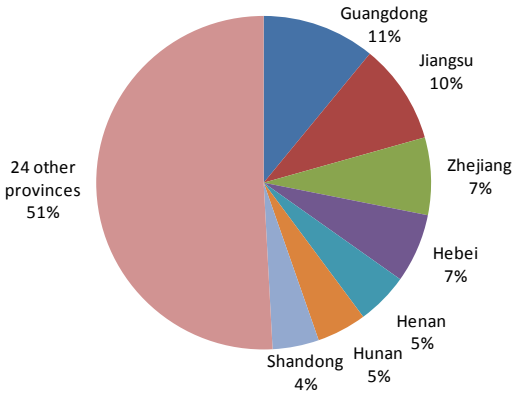
Guangdong is the largest sludge treatment market under the 5-year plan. With the highest amount of discharged sewage, the province is determined to tackle pollution and to build a better environment. It is budgeted the most for 12FYP on municipal waste water treatment among all of China's provinces. Guangdong has capability to achieving (if not surpassing) its 12FYP target, backed by its third-lowest debt/income ratio in the country. This low ratio can also reduce tariff collection receivable risks. Guangdong is also committed to installing the most sludge treatment capacity under the 12FYP in order to raise its sludge treatment rate, which was only 20% in 2010 (vs the national average 25%). The province's new sludge capacity for 12FYP accounted for 11% of the national addition. We expect more greenfield sludge treatment capacity projects and municipal sludge treatment bids from the Government going forward.

Figure 44: Sludge treatment rate by provinces (2010)



Source: MOHURD

Figure 45: New sludge treatment capacity by provinces under the 12FYP



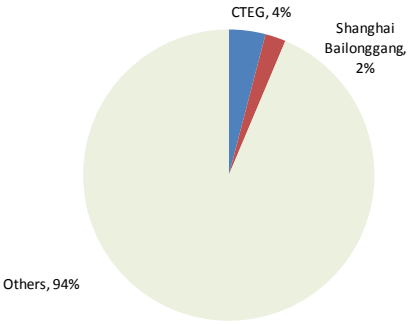
Source: MOHURD

Fragmented market

The sludge industry in China is fragmented. Although CT Environmental is one of the leading sludge treatment operators, its daily capacity, including acquired Qingyuan Lvyou, accounted for only 4% of China's total capacity in 2014, according to our estimates. However, CT Environmental's sludge projects are all located in Guangzhou. The company will seize 34% sludge market share in Guangdong in 2014 and then 59% in 2015, according to our estimates.

Only operators with an industrial solid waste license (under the environmental pollution treatment facility operation certificate) are allowed to conduct sludge treatment. The license is on a project-by-project basis, with an existing operator having to apply for a new license for each new sludge plant. CEI, BEW and CT Environmental all have sludge treatment project. However, for CEI and BEW, the business scale of sludge is tiny when compared to their other businesses.

Figure 46: Sludge market share by capacity (2014)



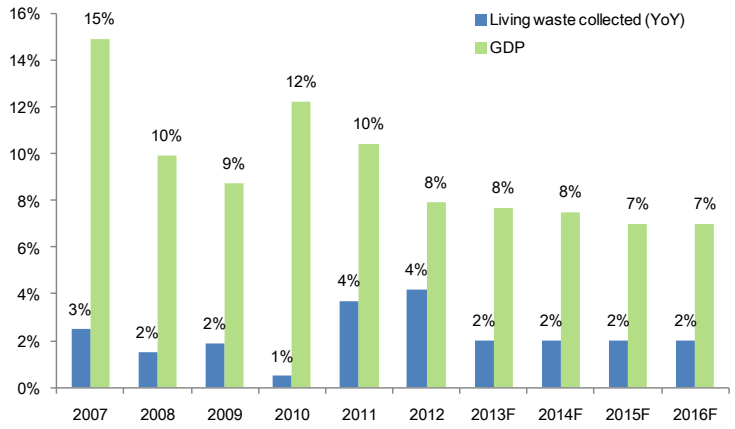
Source: NDRC, MEP, Company data, RHB

Waste To Energy

Living solid waste volume cyclical

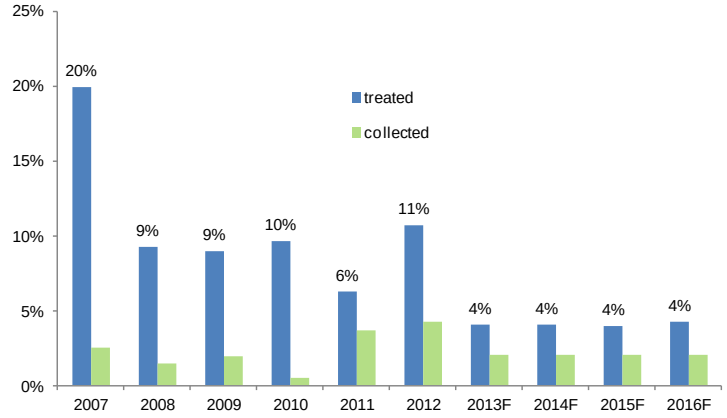
Living solid waste is household, sanitary and business waste. Components include slag, cooking residue, peel, plastics, fallen leaves, fabrics, lumber, glass, paper and batteries. Living solid waste collected volume in China grew at a CAGR of 1.4% in 2003-2012. We find the collected volume in China largely correlated to GDP growth with one year lag time. This is likely due to higher income in the previous year stimulating the current year's consumption, including consumption during the Chinese New Year festivities. China targets GDP growth at 7.5% for 2014, and so the country's GDP growth is on a downtrend. Living solid waste volume growth should be also lower. Hence, we estimate living solid waste collected volume growth is about 2% for 2013 onwards, largely at 2009 and 2010 levels.

Figure 47: Living solid waste collected in cities



Source: CEIC, RHB

Figure 48: Living solid waste treated in cities

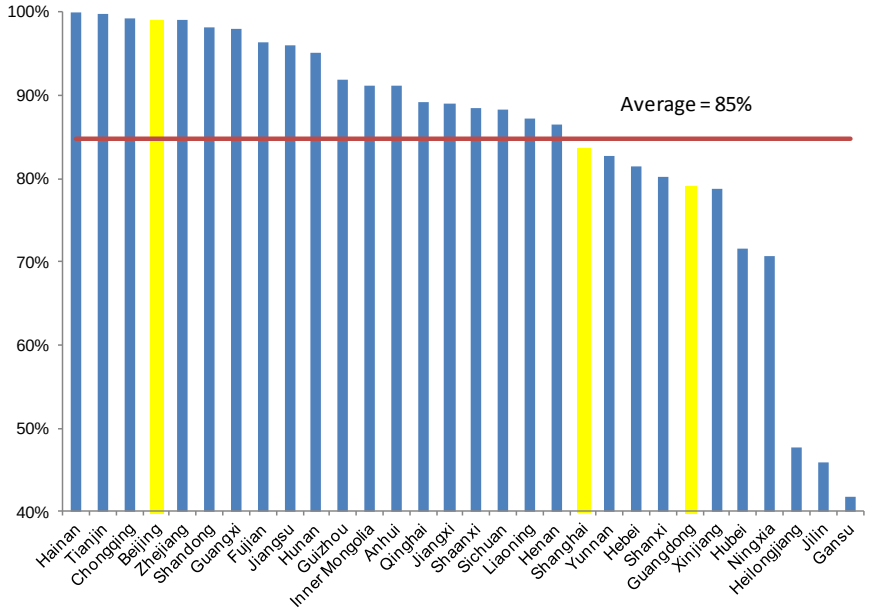


Source: National Bureau of Statistics, CEIC, RHB

Treatment rate increasing

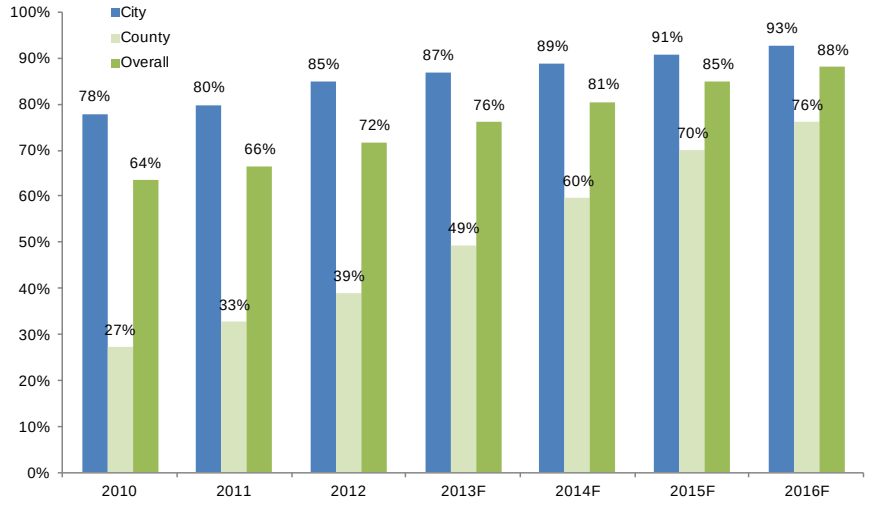
The treatment rate has been increasing considerably since the 11FYP. It was low in 2005 and the treatment rate for cities was 52%. It increased to 78% in 2010 and further to 85% in 2012. Hainan and Tianjin have already achieved 100% treatment in 2012, followed by Chongqing (99%) and Beijing (99%). Still, 17 provinces/cites have treatment rates below the national level, including Shanghai (84%) and Guangdong (79%). Future new projects will be more in these regions.

Figure 49: Living solid waste treatment rate for cities (2012)



Source: MOHURD

Figure 50: Living solid waste treatment rate



Source: National Bureau of Statistics, CEIC, RHB

The NDRC targets to raise living solid waste treatment rates for cities/counties to 90%/70% in 2015 from 78%/27% in 2010 respectively. The target is not too challenging for cities, given that the treatment rate has already reached 85% in 2012. The treatment volume will rise at 6%/24% CAGR for cities/counties during 12FYP and will continue to outpace living solid waste collected. We expect overall treatment rate will increase 21%pts to 85% in 2015. We believe the NDRC will raise the treatment rate by a further 15ppts under the 13FYP: by 2020, China will finally have all living solid waste treated before it is disposed.

Figure 51: Living solid waste for city and county in 12FYP (m tonnes)

	2010	2011	2012	2013F	2014F	2015F	2016F	2017F	2018F	2019F	2020F
Living waste collected	221	229	239	244	248	253	259	264	269	274	280
Living waste treated	140	152	171	186	200	215	228	240	254	267	280
LWT capacity, annual	167	181	203	241	280	318	338	358	378	398	419
LWT capacity, daily *	457	496	555	660	766	871	926	981	1,036	1,091	1,146
Change *		39	59	106	106	106	55	55	55	55	55
YoY%											
Living waste collected		3.7%	4.2%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Living waste treated		8.4%	12.6%	8.2%	7.9%	7.5%	5.8%	5.6%	5.5%	5.4%	4.7%
Living waste tretment capacity, annual		8.5%	11.9%	19.0%	16.0%	13.8%	6.3%	5.9%	5.6%	5.3%	5.0%
Ratio											
Treatment rate	63.5%	66.4%	71.8%	76.1%	80.5%	84.9%	88.0%	91.2%	94.3%	97.5%	100.0%
Utilisation rate		87.6%	89.4%	83.7%	76.9%	72.0%	69.4%	69.0%	68.9%	68.8%	68.5%

** in '000 tonnes*
Source: MEP, National Bureau of Statistics, NDRC, RHB

A huge investment budget for 12FYP

To achieve the 90%/70% treatment rate target for cities/counties respectively, the NDRC planned to raise the capacity to 871,000 tonnes by 2015 from 457,000 in 2010, ie increasing it by 91%. To add 415,000 tonnes of capacity, NDRC will build 580,000 tonnes, which is 48% above its target for 11FYP, and then close 166,000 tonnes. This 580,000 tonnes will include 182,000 tonnes of capacity whose construction started under the 11FYP.

The NDRC budgeted CNY264bn for 12FYP, three times its 11FYP budget. The huge increase was mainly due to: i) an 87% increase in average investment cost for living solid waste, and ii) 21% of the 12FYP budget (or CNY56bn) for new items like food waste, categorisation and monitoring – none of which were in 11FYP. We believe the upsurge in average investment cost was due to rise in incinerators, which incurred the highest unit capex vis-à-vis landfills and compost.

Figure 52: 12FYP investment plan on living solid waste

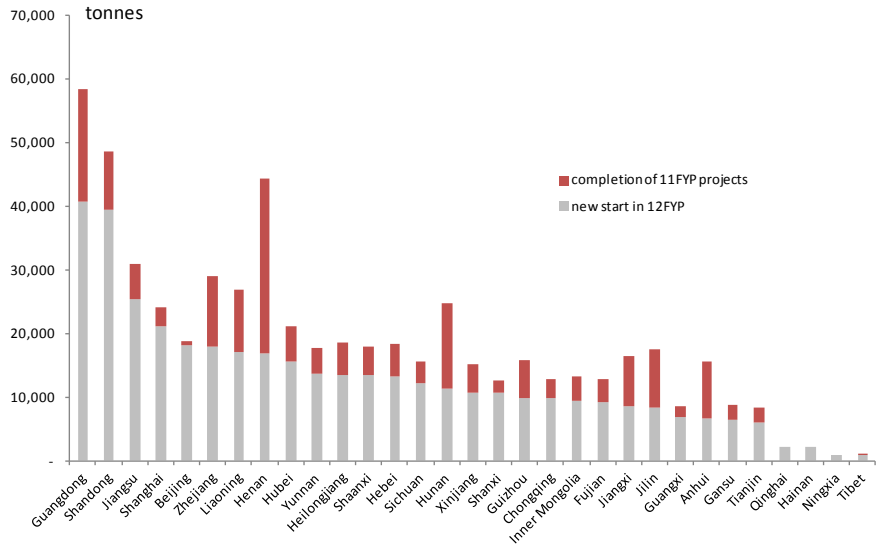
	12FYP				11FYP				Change		
	Budget CNYbn	Breakdown	Add. daily capacity '000 tonnes	Average inv. CNY/t	Budget CNYbn	Breakdown	Add. daily capacity '000 tonnes	Average inv. CNY/t	Budget	Additional capacity	Average inv.
New start	139	52.5%	398	348			320			24.4%	
Completion of projects started in last FYP	35	13.1%	182	189			71			156.9%	
Addition	173	65.6%	580	298			391			48.4%	
Closure	-	0.0%	(166)	-			(60)			176.4%	
Living waste	173	65.6%	415	417	71	82.7%	320	223	142.4%	29.6%	87.1%
Food waste	11	4.1%	30	361							
Capacity	184	69.8%	445	413							
Transportation	35	13.3%	457	77	15	17.3%			135.1%		
Storage treatmnet *	21	8.0%	1,882	11							
Categorization	21	8.0%									
Monitoring	3	0.9%									
Total	264	100.0%			86	100.0%			205.5%		

** no. of storage*
Source: NDRC, RHB

Guangdong and Shandong will add the most living solid waste treatment capacities in 12FYP, followed by Jiangsu, Shanghai and Beijing, which will have a lot of new starts on waste-to-energy construction in 12FYP. CEI has 13 waste-to-energy projects operating as at end-2013, of which 10 are in Jiangsu, accounting for 74% of total operating capacity.

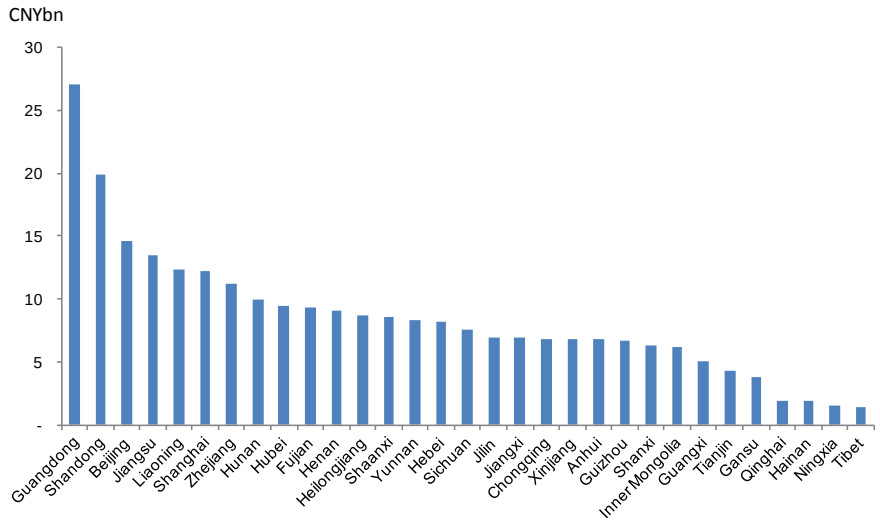
The company has 35 projects under construction/preparatory/planning stages, of which 13/8/3 are in Shandong/Jiangsu/Guangdong respectively. These account for over two-thirds of projects. Guangdong, Shandong, Beijing and Jiangsu also have the largest budget for living solid waste investment under the 12FYP.

Figure 53: Living solid waste treatment capacity addition under the 12FYP



Source: NDRC

Figure 54: Living solid waste investment under the 12FYP



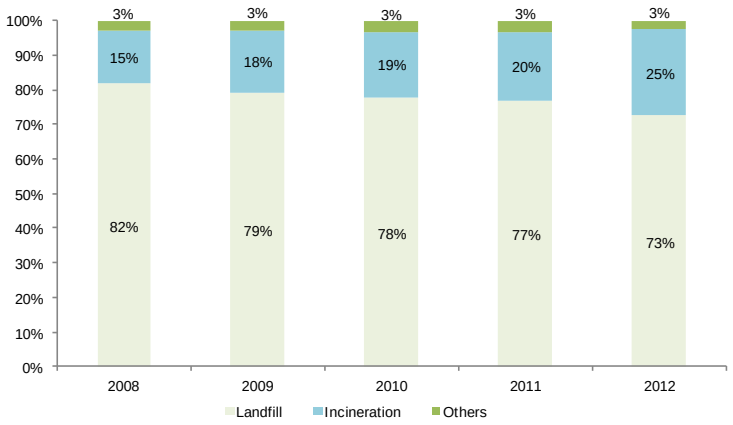
Source: NDRC

The NDRC prefers incineration to landfill

Landfills represents the most common method for living solid waste treatment, accounting for 73% of total living solid waste treatment volume in 2012. Incineration accounted for only 20% while the remaining 3% was by compost and other methods like recycling. Incineration's share has been increasing to 25% in 2012 from 15% in 2010, while others, including compost, remain at 3%.

In 12FYP, the NDRC targeted to add 415,000 tonnes of living solid waste treatment capacity, of which over half (53%) will be for incineration. Incineration capacity will increase to 307,000 tonnes daily capacity in 2015 from 90,000 tonnes in 2010, up 243%. By contrast, landfill capacity will increase by only 46% under the 12FYP, accounting for 59% total capacity by end 2015, down from 77% in 2010. Treatment capacity for recycling and others will surge 232% in 12FYP.

Figure 55: Living solid waste treated volume for city



Source: National Bureau of Statistics

Figure 56: Living waste new daily treatment capacity under the 12FYP

	Actual 2010	Target 2015	Change '000 tonnes	Change %
Incineration	90	307	218	242.7%
Landfill	352	514	162	45.9%
Others	15	51	35	231.6%
Total ('000 tonnes)	457	871	415	90.7%
Breakdown				
Incineration	19.6%	35.2%	52.5%	
Landfill	77.0%	59.0%	39.0%	
Others	3.3%	5.8%	8.5%	
Overall	100.0%	100.0%	100.0%	

Note: For both cities and counties
Source: NDRC

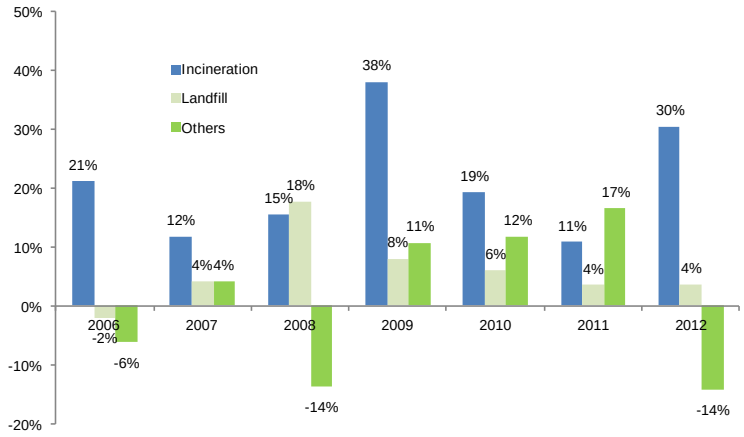
The NDRC prefers incineration to landfills since incineration is less harmful to the environment when compared to landfill. If advanced technology and professional management are applied, bad smells from incinerators can be minimised. What is more, waste-to-energy can generate power not only for the use of the waste treatment plant, but also for external power sales. Power generation provided about 70% of total revenue of a waste-to-energy project, and this income is absent for landfills. Besides, under over 850°C flames, hazardous organic materials like bacteria/viruses can be completely destroyed. Furthermore, incineration can reduce the size of living solid waste by up to 90%. However, unit investment cost for waste-to-energy is about CNY300,000-800,000 per tonne of daily treatment, about doubled that for landfills.

Landfills are less ideal. They produce huge amounts of bad smells and create leachate, which is highly contaminative and will pollute underground water, inducing “secondary pollution”. It also occupies a much larger area of land. Compost uses organic living solid waste as fertiliser. Compost requires the removal of inorganic waste like glass/plastic, and so it has limited usage.

Recycling is the best approach for long-term living waste sustainable development. Paper, metals and plastics can be recycled. More recycling will reduce living solid waste volume available for incineration, but the risk is low in the short term, because incineration and recycling together account for 23% of total treatment capacity in 2010. They can also take landfill's share. Recycling also requires public education, which takes time.

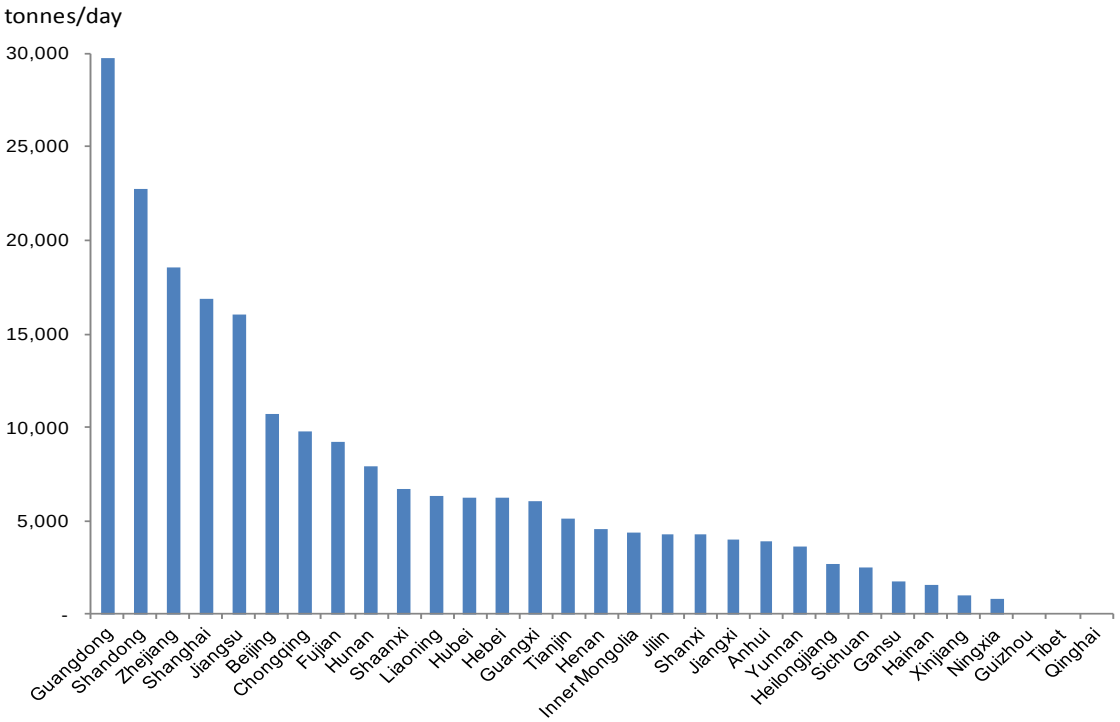
Food waste was separately listed for the first time under a 5-year plan. In 12FYP, the NDRC will invest CNY11bn to build 30,000 tonnes of daily treatment capacity. Food waste collection development will further build a better environment for China.

Figure 57: Treatment capacity for cities



Source: MEP, National Bureau of Statistics

Figure 58: Incineration capacity addition in 12FYP



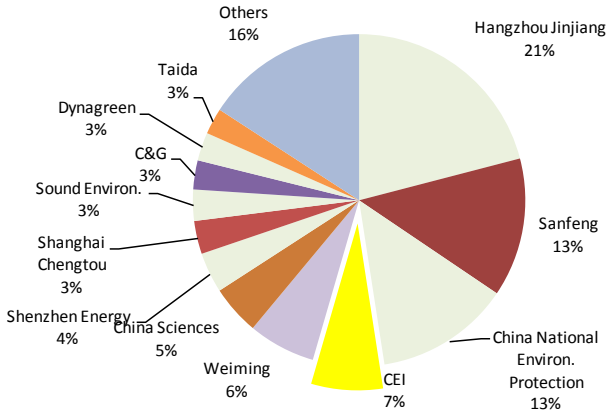
Source: NDRC

Less fragmented than waste water treatment

The waste-to-energy market is less fragmented when compared to municipal/industrial waste water treatment sector. From its company website, Hangzhou Jinjiang Group had 40,000 tonnes waste-to-energy daily operating capacity, ranked first among its peers and captured 21% market share based on operating capacity. The Top 3 have already accounted for almost half (48%) of the market. CEI has 13,250 tonnes operating capacity, capturing 7% market share. The company has 37,900 tonnes of waste-to-energy capacity projects in hand, of which 32,250 tonnes capacity is under construction and preparation. CEI will rank second in the waste-to-energy industry, if we also consider capacity under construction/preparation.

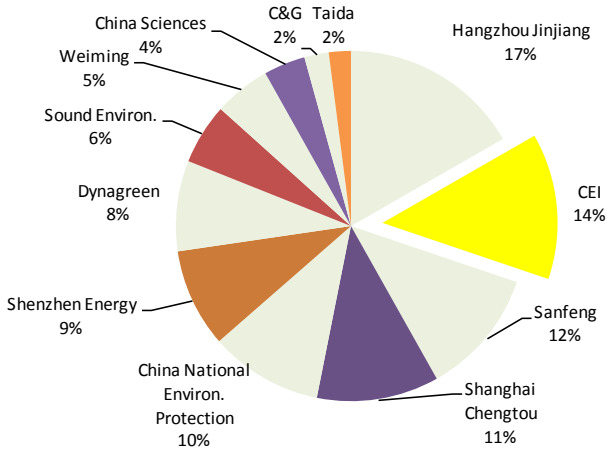
Despite a less fragmented market share, competition will not be too keen in 2014-2015. This is because of a lot of greenfield projects available for bidding. NDRC plans to increase incineration capacity by 243%, or a CAGR of 28% under the 12FYP. Installation was slow in 2011 but has accelerated in 2012. For CEI, it has a huge project pipeline on hand, and the backlog is sufficient for its development, at least until 2017, according to our estimates. It has strong presence in Jiangsu, Shandong and Zhejiang, and 72% of the projects at planning/preparatory stages are from the three provinces.

Figure 59: Market share of waste to energy is based on operating capacity (2013)



Source: Companies data, Chinapower.com, RHB

Figure 60: Market share among selected top players based on operating, constructing, preparatory capacity



Note: Phase II projects not at operating/constructing/preparatory stages are excluded
Source: Companies data, Chinapower.com, RHB

Risk – local residents' objections

Living solid waste treatment projects may not be welcomed by local residents, because of bad smells, the emission of toxic air and highly polluting leachate. In 2013, CEI imported SITY2000 incineration grate furnace technology from Germany's Martin GmbH. Major technologies for incinerators are grate furnaces and circulated fluidised beds. Since grate furnaces produces less waste from flue gas, they are more welcomed by residents despite their higher investment costs.

Smoke emissions in all of CEI's operating/construction waste-to-energy plants are fully-compliant with EUR2000 standards, which are way better than the national standard. Toxic items like dioxins are also minimised. Since sulphur dioxides are less than a fifth of the national standard, bad smell issues have been significantly reduced. Besides, CEI treated leachate, which is much more contaminative than industrial/municipal sewage. The company has waste water treatment technology, and its treated leachate can meet national waste water treatment discharge standards. Therefore, for waste-to-energy, companies with high emission standards and better technology can significantly have larger public acceptance, enjoying lower public objection risks.

Figure 61: Comparisons of emissions standards

mg/m3	EUR2000	China
Total suspended particulate	10	80
Mono nitrogen oxides	200	400
Sulfur Dioxide	50	260
Carbon monoxide	50	150
Total organic compound	10	-
Hydrochloric acid	10	75
Hydrogen fluoride	1	9
Mercury	0.05	0.2
Cadmium+Thallium	0.05	-
Carbon dioxide	-	0.1
Other heavy metals	0.5	-
Lead	-	1.6
Dioxins	0.1	1

Source: CEI, MEP

Figure 62: Comparison of major incineration technology

	Grate incinerator technology	Circulated fluidised bed technology
Technological maturity	Long history with mature technology	Short history but commercialised
Combustion mode	Waste is fed into incinerator directly to be dried then combusted; relatively large blocks of waste with longer average combusting time	Dry and crush waste particles with combustible heat media (600-700 °C); shorter average combusting time
Cost of investment	CNY300,000-800,000/tonne daily capacity	CNY300,000-600,000/tonne daily capacity
Operational cost	CNY80-100/tonne	CNY150-200/tonne
Auxiliary material	Small amount of diesel fuel during initial combustion is required	Substantial amount of coal, and blending coal ratio may not exceed 20% according to the State Environmental Protection Department
Impact of waste size	Able to accept waste particles of various sizes; only large chunks need to be crushed	Waste requires pre-treatment before combustion to create acceptable waste particles
Flue gas treatment	Dioxin emissions standard can be fulfilled by gas treatment equipment, and flue gas production is 0.35-0.48 m3/tonne of waste	Flue gas production of 0.5-0.9 m3/tonne of waste
Ash	Minimal: 2.5-3% of the waste treated	Large amount of ash: 15-20% of the waste treated; Must be treated as hazardous waste with higher cost
Leachate	Leachate must be treated separately, unable to spray back for combustion	Able to spray leachate back for combustion, but will affect combustion efficiency

Source: China Association of Urban Environmental Sanitation, the First China Business Post, Dynagreen

Sound Global (967 HK)

Buy

Industrial - Environment Control

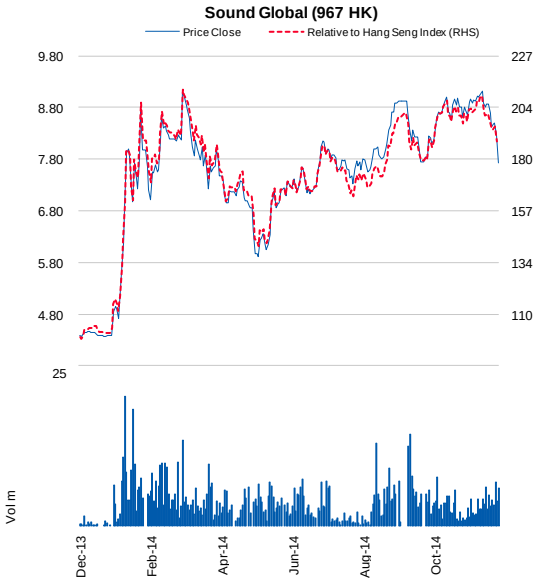
Target Price: HKD12.00

Market Cap: USD1,463m

Price: HKD7.73

Financing Bottleneck Removed

Macro ◆◆◆
Risks ◆◆
Growth ◆◆
Value ◆◆



Source: Bloomberg

Avg Turnover (HKD/USD)	31.6m/4.08m
Cons. Upside (%)	39.7
Upside (%)	55.2
52-wk Price low/high (HKD)	4.36 - 9.12
Free float (%)	31
Share outstanding (m)	1,467
Shareholders (%)	
Wen Yibo	50.3
CCB	11.2
International Finance Corp	7.7

Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	76.1	(10.2)	(11.3)	5.0	74.9
Relative	73.8	(10.8)	(5.7)	1.9	74.4

We initiate coverage on Sound Global with a BUY and DCF-derived HKD12.00 TP (55% upside), implying a 19x FY15F P/E (vs the HK-listed wastewater sector average multiple of 17x). We expect a 3-year recurring EPS CAGR of 26%, higher than the 22% HK-listed sector average growth. Sound Global's capacity expansion accelerated since it resolved its financing bottlenecks via offshore loans in 4Q13, with daily capacity up 132% YoY to 1.3m tonnes YTD.

- **Eliminates financing bottleneck.** Sound Global took USD110m in syndicated bank loans in Taiwan in 4Q13, set up a leasing joint-venture (JV) with Sound Environmental (000826 CH, NR) in October as a way to transfer overseas loans to China and borrowed USD300m (including USD200m in syndicated loans) from the Asian Development Bank on 22 Nov at lower than exiting offshore loans. Lower cost funds will therefore replace its costly senior notes redeemable in Aug 2015.
- **New projects secured YTD up 132% YoY**. Sound Global has secured 1.3m tonnes daily waste water treatment/water supply capacity works YTD in 2014, above its 1.0m tonne target. In 2015, it targets 1.2m-1.5m tonnes on top of the 1.9m tonnes of water projects to be acquired from Sound Environmental in 1H15. It will add at least 3.1m tonnes in capacity in 2015, or 2.4x of its new projects secured YTD. Thus, we expect build-operate-transfer (BOT) operations and maintenance (O&M) revenue to grow 116%/73% in 2015/2016. BOT O&M delivers higher gross margin vs engineering, procurement and commissioning (EPC)/external O&M.
- **Rural expansion may hasten growth**. Sound Global has been diversifying into rural areas since 2013, were is less competition. The National Development and Reform Commission (NDRC) aims to lift the wastewater treatment ratio for counties/towns to 70%/30% in 2015 (60%/20% in 2010), adding 10.1m/9.6m tonnes capacity in the 12th 5-Year Plan (12FYP). Rural projects made up 5% of O&M revenue and 7% of BOT capacity in 2013. Therefore there is a huge room for growth.
- **BUY, with a HKD12.00 TP**. Our DCF-based TP of HKD12.00 implies a FY15F P/E of 19x (12x currently), slightly above the HK-listed wastewater sector average of 17x. We expect Sound Global to deliver a 3-year recurring EPS CAGR of 26%, slightly ahead of the HK-listed sector's 22%. The company's capacity expansion has accelerated since it resolved financing bottlenecks in 4Q13 via the issue of offshore loans. Its daily capacity has now grown to 1.3m tonnes YTD (+132% YoY).
- **Risks.** NDRC missing 12FYP target, failure to secure low-cost financing.

Forecasts and Valuations	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover (CNYm)	2,652	3,140	3,868	5,046	6,039
Reported net profit (CNYm)	428	423	575	820	1,188
Recurring net profit (CNYm)	430	432	575	820	1,188
Recurring net profit growth (%)	1.6	0.4	33.0	42.6	44.9
Recurring EPS (CNY)	0.33	0.33	0.40	0.50	0.67
Recurring P/E (x)	18.4	18.3	15.3	12.2	9.2
P/B (x)	2.99	2.58	2.10	1.56	1.33
P/CF (x)	na	na	na	na	195
EV/EBITDA (x)	11.4	9.3	9.7	9.6	8.3
Return on average equity (%)	17.3	14.8	15.5	14.4	15.7
Net debt to equity (%)	net cash	3.6	36.5	62.7	66.6
Our vs consensus EPS (adjusted) (%)			3.7	(0.4)	0.3

Source: Company data, RHB

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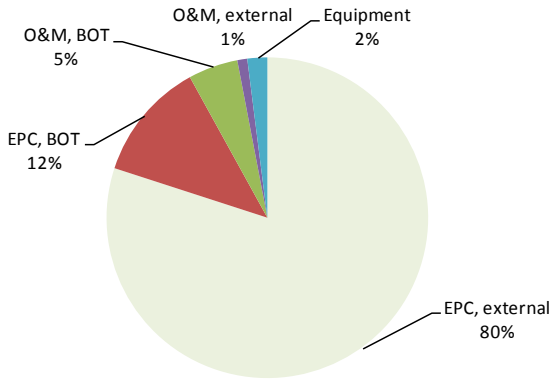
Investment Thesis

Initiate coverage with BUY and TP of HKD12.00

We initiate coverage on Sound Global with a BUY rating. Our TP of HKD12.00 is based on a DCF approach, and implies a FY15F P/E of 19x – which is above its HK-listed peer average PE of 17x. We expect it to deliver a 3-year recurring EPS CAGR of 26%, which is slightly higher than its HK-listed waste water treatment sector average growth of 22%. Sound Global is the leading waste water treatment operator in China, and provides external EPC services for water plants. It expanded rapidly in 2014 and has secured 1.3m tonnes worth of BOT/transfer-operate-transfer (TOT) projects in 2014 YTD (+132% YoY), above its target of adding 1m tonnes for 2014.

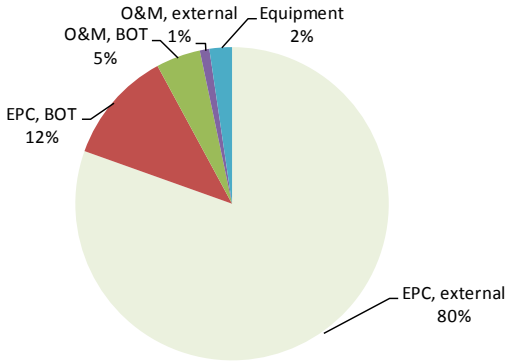
For 2015, the company targeted 1.2m-1.5m tonnes, on top of the 1.9m tonnes for water projects that it will acquire from Sound Environmental in 1H15. Sound Global will add at least 3.1m tonnes in capacity, 2.4x of its new projects secured YTD in 2014. We note that M&As and/or the execution of greenfield BOT/TOT projects would require financing. Sound Global successfully removed financing bottlenecks by raising low-cost syndicated bank loans (USD110m) in Taiwan in 4Q13. In Nov 2014, it further raised even lower-cost loans (USD300m) from the ADB, which has further enriched its cash position. Expanding into the rural market would allow the company to secure more greenfield projects, which have a slightly higher IRR than municipal waste water treatment jobs.

Figure 1: Breakdown of revenue in 2013



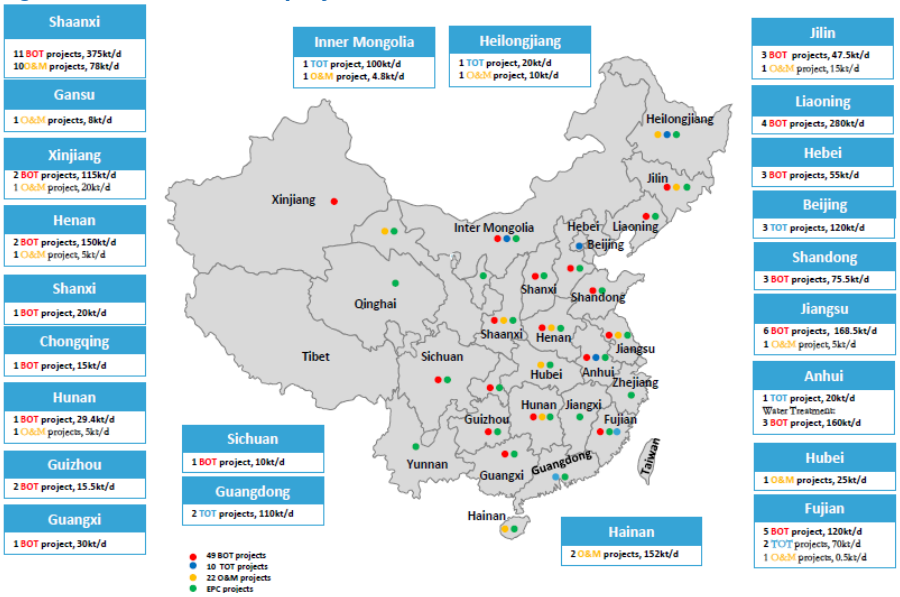
Source: Company data, RHB

Figure 2: Breakdown of gross profit in 2013



Source: Company data, RHB

Figure 3: BOT/TOT/ PPP projects in Jun 2014



Note: Sound Global had 2,435,000 tonnes/day capacity, of which 72% (1,753,000 tonnes) was operational
Source: Company data

Outlook of waste water treatment sector is promising

We are positive on the outlook for the sewage treatment industry, since the Chinese Government is determined to tackle pollution and has committed a budget of CNY430bn for municipal sewage for 12FYP, which is 30% and 14% above its budget and actual spending respectively under the 11th 5-Year Plan (11FYP). As such, bids for greenfield BOT/TOT projects may increase. Favourable polices like tax holidays (3-year tax exemption and three years of halved tax rates for new waste water treatment plants), value-added tax (VAT) exemptions as well as available financing will continue. The soon-to-be released "Water Pollution Prevention and Treatment Plan" by the NDRC will see the Chinese Government allocating approximately CNY2.0trn in 2013-2017 (vs CNY1.4trn in 2011-2015) for water supply and sewage treatment. The Government's commitment to fight water pollution could extend to at least 2017.

The rate of sewage treatment in municipalities is projected to reach 100% for 36 key cities and 85% for overall cities in 2015. To further improve water quality, in its 13th 5-Year Plan (13FYP), the NDRC is likely to switch its focus from the rate of sewage treatment to the quality of the treatment itself. In 2010, only 15% of municipal waste water treatment capacity was of National Standard 1A, according to China's Ministry of Housing and Urban-Rural Development (MOHURD), and we expect to see more municipal waste water treatment projects being upgraded to National Standard 1A or even Beijing Standard 1A/1B, in 13FYP. Hence, TOT projects will be more available. In addition, the Chinese Government will also continue to focus on developing rural areas, as the NDRC will continue to escalate the still-low treatment rate in 2015 for towns (30%) relative to cities (85%).

Fragmented municipal waste water treatment market

The municipal waste water treatment market is fragmented. The combined market share of the top five waste water treatment operators was 21% in 2013, despite rising from 18% in 2010. Such a fragmented market allows large players to expand their market share via acquisitions. Besides that, about 58% of waste water treatment projects are still under the purview of local governments. Given the high gearing levels of local governments, future waste water treatment plant upgrades would rely on TOT projects – which would increase the available jobs for top players.

The entry of new players, together with the fast expansion of leading state-owned enterprise (SOE) peers, has increased competition. The keener competition resulted in lower tariff and lower gross margins. Nevertheless, scale is a critical factor of success for a waste water treatment operator. As Sound Global has been accelerating the pace of its growth and secured 132% more projects YTD in 2014, we believe it can manage to further lower costs in order to offset lower tariffs, and as a result, maintain stable gross margins.

Bottleneck on financing resolved

Financing was a major bottleneck for the company in 2012/2013. Its revenue growth decelerated to 16%/18% in 2012/2013 from 37%/30% in 2010/2011 respectively. BOT construction revenue even fell 26% YoY in 2013, which was likely due to insufficient funds. The execution of BOT projects requires huge capex, but the financial market in China was challenging in 2012/2013, according to Sound Global chairman Mr Wen Yibo. As such, the company issued high-interest rate convertible notes (9% effective interest rate) and senior notes (11.875% interest rate), which boosted its financing expenses (61%/64% for 2012/13) and muted earnings growth in 2012/2013 to just +3%/-1% respectively.

To remove the bottleneck, Sound Global implemented several strategies:

i. It incurred syndicated bank loans of USD110m (or CNY676m) in Taiwan in 4Q13 at the rate of LIBOR+3.15%, which was lower than the rate for its existing domestic bank loans (6.1% in 2012) and much less than convertible bonds (CB) and senior notes. Consequently, the company accelerated Its BOT construction and overall 4Q13 revenue surged +30%YoY (3Q13: -2% YoY). It is in discussions with overseas banks like Deutsche Bank and will likely further increase its loans from offshore bank financing.

ii. It set up a leasing JV with Sound Environmental in Oct 2014 to migrate its offshore loans to China. The country limits foreign currency conversion and sets up forex quotas for each company. Sound Global has almost used up all its quota after taking offshore loans from International Finance Corporation (IFC) and Taiwanese banks, as well as issuing convertible bonds and senior notes. Leasing firms have higher quotas, calculated as 10x of its registered capital minus risk assets, according to regulations stipulated by the State Administration of Foreign Exchange (SAFE), which took effect in May 2013. As the leasing JV has a registered capital of HKD233m (CNY184m), its quota for foreign exchange conversion is CNY1,840m.

iii. It borrowed from the ADB a normal loan of USD100m (CNY613m) in Nov 2014 for three years, to support the development and execution of its waste water treatment projects in rural areas. The interest cost is only LIBOR+ less than 3%, the lowest among the company's different types of loans. The ADB also offered an additional USD200m (CNY1,227m) in syndicated loans. Total loans taken from the bank amount to CNY1,840m.

Sound Global's senior note (CNY899m) carries a high interest rate of 11.875%, and will be redeemable on 10 Aug 2015. Management is ready to redeem the note to save finance expenses. Its finance cost was CNY139m, accounting for about 16% of operating profit. If it can be replaced by domestic bank loans with a 6.1% interest rate, Sound Global would be able to save CNY70m in finance expenses, which is about 10% of its 2013 profit (including the effect of a tax shield).

New projects secured YTD higher by 132% YoY

Sound Global has already secured 1.3m tonnes including non-operating projects YTD in 2014, significantly above its target of 1m tonnes of daily water capacity for BOT projects for this year. The amount is more than double the 300,000/600,000 tonnes for new projects in 2012/2013 respectively. We expect the company to step up the pace of its expansion, after successfully garnering Taiwan-syndicated loans in 4Q13.

For 2015, it has targeted a new project capacity of 1.2m-1.5m tonnes daily, equivalent to -9% to +14% of new contracts secured YTD. We also conservatively assume it to record 1.3m tonnes for new projects secured for 2015. Together with the 1.9m tonnes of capacity that it will acquire Sound Environmental, Sound Global will add at least 3.1m tonnes capacity in 2015, which is 2.3x of its new project of secured YTD 2014.

Figure 4: BOT/TOT/PPP capacity

	2H13 actual	1H14 actual	2014F est.	2015F est.	2016F est.
Daily capacity					
Operating	1,242	1,753	2,234	5,374	6,661
Constructing	491	682	824	884	897
Total ('000 tonnes)	1,733	2,435	3,058	6,258	7,558
Change					
Operating		511	481	3,140	1,287
Constructing		191	142	60	13
Total ('000 tonnes)		702	623	3,200	1,300

Source: Company data

M&A of Sound Environmental is a longer-term positive

On 18 Sep 2014, Sound Global announced that:

i. It will acquire 22 waste water treatment projects (1.9m tonnes of daily capacity, including 500,000-600,000 for tap water supply) from Sound Environmental, a sister company that is 42.4%-owned (before the transaction) by Sound Global's chairman (Wen) and related parties for a consideration of CNY1,200m. It will also settle loans worth CNY1,024m, which comprise long-term loans (CNY326m) and shareholders loans (CNY698m). Its total payments would amount to CNY2,224m, implying a 31x FY13 P/E.

ii. It will issue 280m new shares at HKD8.10 per share (9% discount to its last closing price) to Sound Environmental. The new shares would represent 19% of its existing share capital, and would be valued at HKD2,271m (or CNY1,800m).

iii. Mr. Wen (and related parties) will sell their existing 268m Sound Global shares at HKD8.10 per share to Sound Environmental, representing 15.2% of its enlarged share capital and valued at HKD2,144m (or CNY1,700m)

After the transaction, Sound Environmental will hold a 31.2% stake in Sound Global. Sound Environmental will pay CNY3,500m (ie CNY1,800m + CNY1,700m) partly satisfied by the waste water treatment assets (CNY1,200m) that it will hive off to Sound Global. To fund the remaining CNY2,224m, Sound Environmental will offer new shares for subscription, subject to the China Securities Regulatory Commission's (CSRC) approval. After that, Wen's effective interest in Sound Global will drop to 41% from 51%. Management expects the M&A to be completed in 1H15.

The deal was slightly dilutive (-2%) to EPS in 2013, based on a 17% earnings enhancement but with 19% more shares issued. In our view, the deal would be positive to Sound Global in the longer term for two reasons. Firstly, the restructuring would result in clearer business objectives and a cleaner delineation of Wen's businesses, as Sound Global would become his flagship waste water treatment unit. Sound Environmental will focus more on waste-to-energy and municipal EPC projects. This would eliminate the competition for projects among companies within the group. Sound Environmental would also benefit from more water projects that are secured by Sound Global. Secondly, Sound Global would enjoy greater economies of scale. It currently has 3m tonnes of daily waste water treatment capacity on hand (including non-operating projects), and the acquired waste water treatment assets of 1.9m tonnes would lift its capacity by 63%. We reiterate that "bigger is better" is a winning strategy for waste water treatment firms, as management teams and research and development (R&D) costs could be shared. Besides that, having larger scale would allow Sound Global to have stronger bargaining power in negotiations with local governments.

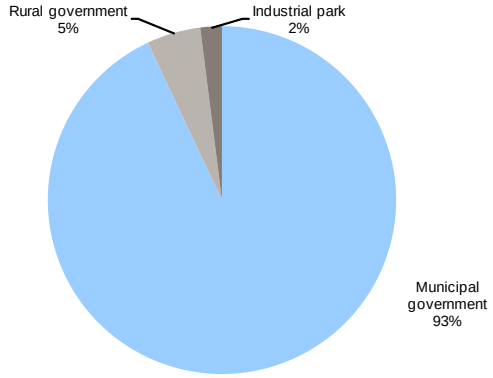
Rural expansion could hasten growth

Management believes that rural areas offer more growth as these places have less competition. Sound Global also enjoys an early mover advantage as it started conducting R&D on sewage treatment in rural areas in 2005. In 2013, rural projects only accounted for 5% of its O&M revenue and 7% of BOT capacity. More waste water treatment operators began expanding to towns in 2013. Sound Global was the most active in "going rural", while China Everbright International (CEI) (257 HK, NEUTRAL, TP: HKD10.50) has started to expand to rural areas.

In our view, players expand to counties and towns due to the intense competition in cities (especially key cities). In contrast, rural areas have yet to develop and the number of waste water treatment projects completed there are few. The NDRC targets to lift municipal waste water treatment ratio for counties/designated towns to 70%/30% in 2015 from 60%/20% in 2010. In 12FYP, new construction of waste water treatment capacity projects will be 45.7m tonnes, of which 10.1m/9.6m tonnes will be for counties/designated towns respectively, accounting for almost half (43%) of the new capacity.

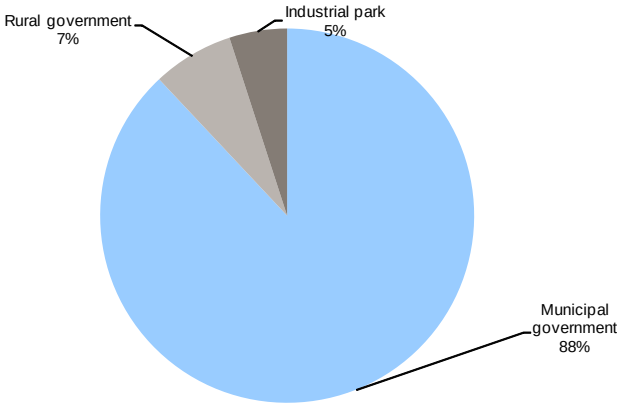
Going rural, however, is not without risks: i) as county/town governments' balance sheets are weaker than that of city governments – their receivables collection risk would be higher, ii) counties/towns have much lower sewage volumes (about 800-1,000 tonnes of daily sewage) vs 100,000 tonnes for cities – smaller scale will reduce operating efficiency, and iii) the average capex for rural waste water treatment projects is double that of municipal waste water treatment projects.

Figure 5: External O&M capacity by customer type (2013)



Source: Company data

Figure 6: BOT/TOT/PPP capacity by customer type (2013)



Source: Company data

BOT construction revenue likely to double in 2014

Management guided for CNY1bn in construction revenue for 2014, which is 2.5x of Sound Global's construction revenue for 2014. Such high growth would be due to the completion of BOT jobs that started in 2013. Many projects began construction in 4Q13, when overseas syndicated loans were available. As most of the construction will be completed in 2014, the related construction revenue would be booked in 2014.

Sound Global has 720,000 tonnes of capacity in BOT greenfield projects secured YTD (+60% YoY). We expect most of the construction will be done in 2015, boosting BOT construction revenue by 68% YoY in 2015. We estimate construction revenue growth to decelerate to 7% in 2016, as its net debt to equity reached 67%, above Sound Global's preferred gearing level of 60%.

O&M BOT revenue upsurge

We expect O&M BOT revenue to surge 87%/116%/73% in 2014/2015/2016 respectively. In the past, Sound Global secured new projects mainly by bidding for greenfield projects. Greenfield projects require 6-18 months for construction. By contrast, most of the projects acquired by the company were operating before the M&As were made and it was able to generate immediate O&M revenue. Besides, M&As tend to be done quickly as they do not involve local government planning or a long bidding process. To accelerate its expansion, Sound Global will continue to bank on M&As. Among the 1.3m tonnes of waste water treatment for new projects secured YTD, 46% were via M&As (vs 21% in 2013). Management expects half of the new projects in 2015 to be secured via M&As, and we expect the company to maintain obtaining half of its new projects via M&As moving forward.

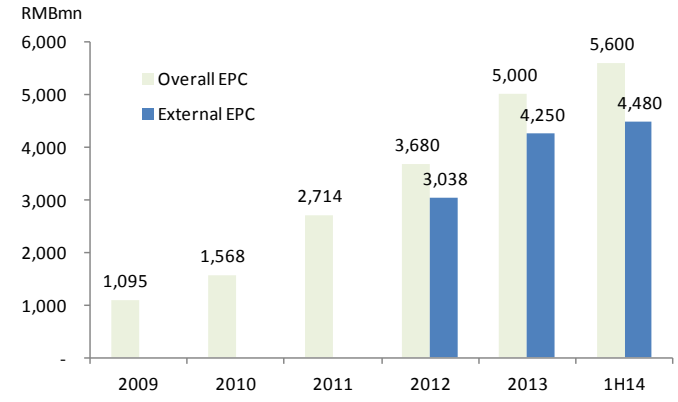
We also anticipate its completed greenfield BOT/TOT projects, together with capacity, to lift revenue. Higher O&M revenue not only increases revenue, but also widens its overall gross margin. For 1H14, O&M BOT gross margin was 45%, which was above Sound Global's overall gross margin of 31%. We also estimate its revenue contribution to increase to 8%/13%/18% in 2014-2016 from 5% in 2013.

External EPC revenue in 2014/2015 fully covered by backlog

Management switched its focus from external EPC to BOT projects. External EPC revenue decelerated to 5% YoY in 1H14 from 30% in 2013. We believe the strategy is correct, since the external EPC gross margin is edging down and is now similar to the gross margin for EPC BOT construction. Moreover, BOT construction can create future O&M revenue, which would generate a continuous income stream. Most importantly, external EPC projects completed do not count towards Sound Global's market share in the municipal waste water treatment market. As such, the company prefers BOT to external EPC. However, BOT projects require capex, while external EPC projects collect income according to the progress of their completion, according to the management.

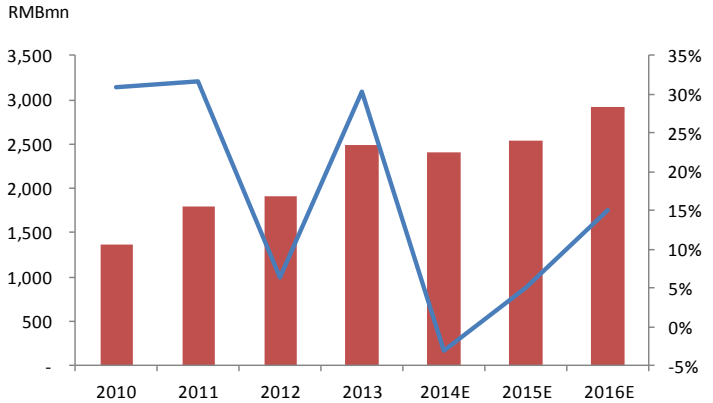
Sound Global's external EPC backlog in end-2013 was at CNY4.3bn. The backlog rose to CNY4.5bn, and we estimate that the company secured CNY1.5bn in new contracts in 1H14. If we add new contracts with to the end-2013 backlog, the adjusted backlog would be worth CNY5.8bn – which fully covers our estimated external EPC revenue of CNY4.9bn for 2014-2015. Management guided for external EPC revenue to grow 10-15% YoY in 2015. We conservatively estimate a growth of 5%, since internal EPC revenue may continue to surge by 68% in 2015. We expect Sound Global to accelerate external EPC growth to 15% in 2016, when BOT construction revenue growth could decelerate given the high base of 2015.

Figure 7: EPC backlog



Source: Company data, RHB

Figure 8: External EPC revenue



Source: Company data, RHB

Key Risks

Failure to raise funds at a low cost. Sound Global's key bottleneck in last two years was debt financing. If it fails to secure low-cost financing, it would have to use high-cost debts like bonds – which could lower its earnings. Moreover, insufficient funding would slow down the company's execution of build-operate-transfer (BOT) works on both M&As and greenfield projects. The BOT approach is set to be its key growth driver in 2014 and its execution requires heavy capex. As we believe Sound Global would be able to redeem and refinance its high-cost senior notes in Aug 2015, low-cost financing would be critical for it to achieve this.

The NDRC missing 12FYP targets. The NDRC set aggressive targets for waste treatment capacity investment and utilisation under the 12FYP. Our market size forecasts are largely based on the Government's target. If the NDRC misses its target, this would result in fewer greenfield projects for industry players – which would increase competition and drag down returns. This risk is fairly low due to increasing public concern on pollution, and we note that one of the Government's top priorities currently is battling pollution.

Higher competition in municipal waste water treatment. We see growing competition in bidding for municipal waste water treatment BOT projects. Leading players in the waste water treatment industry set aggressive targets, and are ready to seize market share when the Chinese Government launches projects. As the leading players are also state-owned enterprises (SOEs), they benefit from their larger scale and have better access to low-cost debt. Thus, they have a competitive advantage over Sound Global.

Receivables collection risk is higher in rural areas than in large cities. Sound Global is expanding quickly to rural areas. Since the balance sheets of county and town administrations are weaker than that of large cities, its receivables collection risk would increase.

Project delay risks. Greenfield BOT/transfer-operate-transfer (TOT) projects require preparation and approvals from the Government. If the time taken to prepare is longer than expected, construction will be delayed – which would lead to lower construction revenue and operations and maintenance (O&M) revenue.

Short-term price weakness from chairman's breach of Takeovers Code. In our view, this development may have a short-term negative impact on the group's share price, but is unlikely to negatively affect its fundamentals. On 4 Dec, *aastocks.com* reported the Securities and Futures Commission's public criticism of chairman Wen for contravening the Takeovers Code. The details are as follows: On 10 Sep 2013, Sound (HK) Ltd (which is 99.83% owned by Wen and related parties) and Sound Global issued a joint announcement about the delisting of Sound Global on the Singapore Stock Exchange. To facilitate the delisting, Sound (HK) Ltd made a cash offer for all Sound Global shares at an offer price of HKD4.37 (SGD0.70). The offer closed on 17 Jan. Between 28 Mar and 9 May 2014, Wen and Sound Water (BVI) Ltd acquired a total of 5.6m Sound Global shares at HKD5.94-7.55 in the market. In doing so, he violated Rule 31.3 of the Takeovers Code, by acquiring shares above offer price within six months after the close of an offer. Wen admitted to this breach, attributing it to his inadvertent oversight.

Valuation

Our TP of HKD12.00 is based on a DCF valuation. We use a 7.1% WACC, based on a risk-free rate of 3% and an equity risk premium of 5%, with 1% terminal growth for its future growth for its external EPC and 0% for its BOT/TOT/public-private partnership (PPP) contracts after the end of the concession period.

Figure 9: DCF assumptions

Present value of FCF	14,688
Present value of terminal value	4,518
EV (CNYm)	19,206
Beta	0.96
Risk free	3.0%
Equity risk premium	5.0%
Cost of equity	7.8%
Cost of debt (after tax)	6.5%
WACC	7.1%
Terminal growth	1.0%
Debt/Capital	52.0%

Source: Bloomberg, RHB

Figure 10: DCF valuation

	CNYm	CNY/share	GNAV %	Valuation Methodology
EPC, external	12,011	8.03	62.5	DCF (7.1% WACC, 1% Terminal Growth)
BOT	6,683	4.47	34.8	DCF (7.1% WACC, 0% Terminal Growth)
O&M, external	395	0.26	2.1	DCF (7.1% WACC, 1% Terminal Growth)
Equipment fabrications	117	0.08	0.6	DCF (7.1% WACC, 1% Terminal Growth)
GNAV at year end	**19,206**	**12.84**	**100.0**	
Debt & MI	(5,010)	(3.35)		
NAV at year end	**14,196**	**9.49**		
NAV at year end (HKD/share)		**11.98**		

Source: RHB

Our DCF-derived TP implies a FY15F P/E of 19x (vs 12x currently), above its HK-listed waste water treatment sector average of 17x. Sound Global is currently trading at +1.0SD from its forward P/E. We expect Sound Global to deliver a 3-year recurring EPS CAGR of 26%, slightly ahead of the HK-listed sector's growth of 22%. The current valuation multiple looks high relative to the unusually low valuation in 2012-2013, when the company was grappling with financing bottlenecks and was dual-listed in Singapore/Hong Kong, which negatively impacted valuations. We believe the low valuation multiple no longer applies. Sound Global secured low-cost funding from Taiwan in 4Q13, and then it accelerated BOT construction and M&As in 2014. We believe it will be able to deliver approximately 25% YoY EPS growth in FY15, compared to only 2%/0% in 2012/2013 respectively. Therefore this stock deserves a higher forward P/E, since the company can deliver increased earnings growth and also de-listed from Singapore in Jan 2014.

Figure 11: Valuation table I

Company	Ticker	Price	Mkt cap (USDm)	3-mth avg t/o (USDm)	P/E Hist (x)	P/E FY1 (x)	P/E FY2 (x)	EPS FY1 YoY%	EPS FY2 YoY%	3-Yr EPS Cagr (%)	PEG (x)	Div yld Hist (%)	Div yld FY1 (%)	P/B FY1 (x)
HSI		**24003**			**10.4**	**11.1**	**10.5**	**(6.9)**	**6.6**	**3.0**	**3.7**	**3.8**	**3.6**	**1.2**
CSI300		**3125**			**13.5**	**12.7**	**11.0**	**6.9**	**15.0**	**12.1**	**1.0**	**1.9**	**2.3**	**1.8**
HK-listed WWT services														
Sound Global	967 HK	7.73	1,463	4.3	18.3	15.3	12.2	20.1	24.6	25.9	0.6	NA	0.0	2.1
CTEG	1363 HK	7.64	1,421	4.8	37.9	29.6	19.0	28.1	55.5	39.4	0.7	0.4	0.6	6.1
BEW	371 HK	5.00	5,617	9.2	31.9	25.7	22.2	24.2	15.8	19.4	1.3	1.1	1.4	3.0
Kangda	6136 HK	3.20	854	5.6	NA	17.9	13.2	NA	35.2	N/A	NA	NA	0.5	2.0
Tianjin Capital	1065 HK	5.20	1,856	3.3	20.6	19.7	19.2	5.0	2.4	5.2	3.8	1.9	1.6	1.4
Average					**27.2**	**21.6**	**17.2**	**19.4**	**26.7**	**22.5**	**1.6**	**1.1**	**0.8**	**2.9**
Singapore-listed WWT services														
HanKore	HANKORE SI	1.02	397	1.5	NA	27.8	23.6	NA	17.6	N/A	NA	NA	NA	1.5
SIIC	SIIC SP	0.15	1,058	4.7	22.6	22.6	22.6	0.0	0.0	N/A	NA	NA	NA	2.0
Average					**22.6**	**25.2**	**23.1**	**0.0**	**8.8**	**NA**	**NA**	**NA**	**NA**	**1.7**
WTE with WWT services														
CEI	257 HK	11.36	6,571	11.6	34.8	30.4	22.2	14.6	36.7	27.6	1.1	0.8	0.9	3.5
China-listed WWT services														
Chongqing Water	601158 CH	7.78	6,071	25.2	19.9	19.5	18.7	2.1	4.5	5.4	3.6	3.5	3.5	2.7
Shanghai Chent	600649 CH	7.23	3,512	18.5	15.7	13.9	11.9	13.0	17.3	14.5	1.0	2.1	NA	NA
Beijing Origin	300070 CH	33.18	5,774	50.9	41.9	28.9	20.7	45.0	39.7	37.6	0.8	0.2	0.2	5.8
Beijing Capital	600008 CH	9.28	3,319	36.9	34.0	34.1	27.9	(0.5)	22.4	14.0	2.4	1.6	1.6	2.4
Chengdu Xingro	000598 CH	6.25	3,034	91.7	24.0	21.6	18.5	11.5	16.2	11.5	1.9	0.4	0.6	2.5
Zhongshan Public	000685 CH	22.40	2,836	43.8	28.7	33.9	29.5	(15.4)	15.2	15.1	2.2	0.7	NA	2.4
Tianjin Cap	600874 CH	9.21	1,856	26.5	46.1	49.3	44.5	(6.5)	10.7	7.0	7.0	0.9	0.8	3.2
Beijing Water	300055 CH	43.33	1,726	16.7	71.0	56.5	41.9	25.7	34.8	29.6	1.9	0.3	0.5	5.2
Average					**35.2**	**32.2**	**26.7**	**9.4**	**20.1**	**16.8**	**2.6**	**1.2**	**1.2**	**3.5**
Int'l-listed WWT operators														
American Water	AWK US	52.14	9,349	34.2	25.1	21.6	20.0	15.9	8.1	10.1	2.1	2.3	2.3	2.0
Veolia	VIE FP	14.71	10,168	24.1	NA	33.1	20.3	NA	63.1	N/A	NA	4.8	4.8	1.0
Suez	SEV FP	14.88	9,882	15.5	21.6	20.7	18.5	4.3	11.5	9.6	2.2	4.4	4.4	1.5
Average					**23.3**	**25.1**	**19.6**	**10.1**	**27.6**	**9.8**	**2.1**	**3.8**	**3.8**	**1.5**
China WTE operators														
Sound Environ	000826 CH	25.05	3,436	52.1	35.8	26.2	19.9	36.4	31.6	33.0	0.8	0.3	0.4	4.0
Hangzhou Boil	002534 CH	24.08	1,568	6.4	141.6	NA	NA	NA	NA	N/A	NA	0.6	NA	NA
Zhejiang Fuchu	002479 CH	9.75	1,165	14.3	51.3	40.6	32.5	26.3	25.0	13.8	2.9	NA	NA	2.5
Focused Photon	300203 CH	19.46	1,408	25.4	54.1	40.5	31.6	33.6	28.1	28.5	1.4	0.2	0.5	4.2
Wuxi Huaguang	600475 CH	15.54	647	15.7	51.8	34.5	27.8	50.0	24.4	39.8	0.9	0.6	NA	NA
Dongjian Environ	002672 CH	32.61	1,704	13.4	53.2	41.8	26.7	27.2	56.5	39.9	1.0	0.6	0.6	4.5
Average					**64.6**	**36.7**	**27.7**	**34.7**	**33.1**	**31.0**	**1.4**	**0.5**	**0.5**	**3.8**

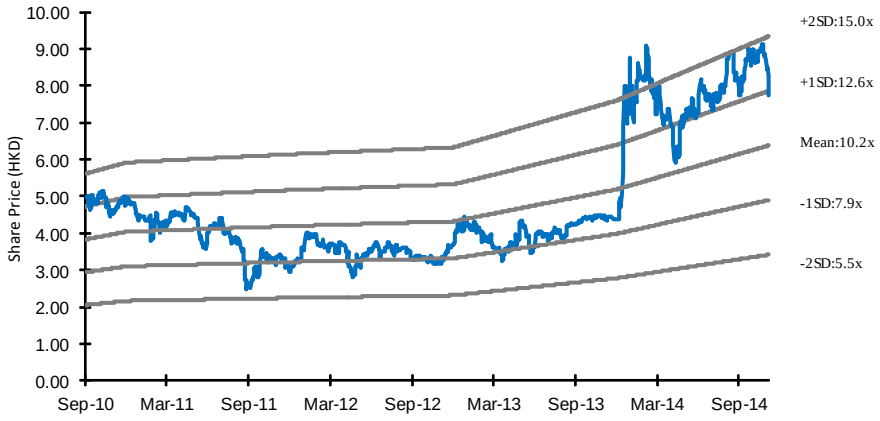
Source: Bloomberg, RHB

Figure 12: Valuation table II

Company	Ticker	Price Chg 1 mth	Price Chg 3 mth	Beta	Rev Hist (USDm)	Rev FY1 (USDm)	NP Hist (USDm)	NP FY1 (USDm)	Gross margin Hist (%)	Net margin Hist (%)	Net margin FY1 (%)	ROE Hist (%)	ROE FY1 (%)	ROE FY2 (%)
HSI														
CSI300														
HK-listed WWT services														
Sound Global	967 HK	(12.2)	(11.3)	0.9	510	629	69	92	30.5	13.8	14.9	14.8	15.5	14.4
CTEG	1363 HK	(0.7)	13.9	N/A	63	134	29	47	63.1	46.4	35.2	29.6	26.2	28.0
BEW	371 HK	(8.4)	(8.8)	0.7	827	1,190	140	194	39.1	19.0	18.2	10.0	11.5	12.6
Kangda	6136 HK	(12.3)	(7.2)	N/A	218	278	38	47	38.3	17.3	17.0	18.9	14.3	13.3
Tianjin Capital	1065 HK	(5.5)	(12.9)	1.2	260	268	46	49	38.1	17.6	18.1	7.9	8.0	7.0
Average		**(7.8)**	**(5.3)**	**0.9**	**375**	**500**	**64**	**86**	**41.8**	**22.8**	**20.7**	**16.2**	**15.1**	**15.1**
Singapore-listed WWT services														
HanKore	HANKORE SI	18.0	16.7	1.2	85	289	(19)	65	40.1	(23.8)	24.1	(8.4)	9.4	6.1
SIIC	SIIC SP	(12.0)	(12.6)	0.9	197	188	24	45	29.8	12.3	23.8	7.4	9.1	10.5
Average		**3.0**	**2.0**	**1.1**	**141**	**238**	**3**	**55**	**34.9**	**(5.7)**	**24.0**	**(0.5)**	**9.3**	**8.3**
WTE with WWT services														
CEI	257 HK	6.8	4.6	0.8	686	887	171	216	44.7	24.9	24.4	12.2	12.0	14.8
China-listed WWT services														
Chongqing Water	601158 CH	27.3	37.2	1.2	645	720	305	307	49.9	47.3	42.6	13.5	13.6	13.9
Shanghai Chent	600649 CH	0.0	3.6	1.2	547	780	224	255	37.0	40.9	32.7	11.3	10.0	N/A
Beijing Origin	300070 CH	13.1	3.8	1.0	496	741	137	196	35.5	27.5	26.5	19.1	20.6	22.3
Beijing Capital	600008 CH	22.3	28.7	1.1	667	742	98	99	37.8	14.7	13.4	10.5	7.7	8.3
Chengdu Xingro	000598 CH	7.8	9.5	1.1	388	430	121	141	47.4	31.2	32.9	11.3	11.4	12.0
Zhongshan Public	000685 CH	59.5	74.3	1.1	138	184	99	108	32.3	71.5	58.7	10.6	9.7	7.6
Tianjin Cap	600874 CH	6.5	7.3	1.1	260	271	46	43	38.1	17.6	16.0	7.9	N/A	6.7
Beijing Water	300055 CH	14.1	28.6	0.9	124	178	23	30	25.7	18.5	16.8	6.8	9.1	11.6
Average		**18.8**	**24.1**	**1.1**	**408**	**506**	**132**	**147**	**38.0**	**33.7**	**29.9**	**11.4**	**11.7**	**11.8**
Int'l-listed WWT operators														
American Water	AWK US	0.3	3.2	0.5	2,902	3,081	369	431	N/A	12.7	14.0	8.2	8.8	9.7
Veolia	VIE FP	4.7	2.0	1.1	18,167	18,737	(110)	213	15.0	(0.6)	1.1	0.1	3.0	5.1
Suez	SEV FP	8.0	2.8	1.0	11,922	11,741	287	319	N/A	2.4	2.7	10.4	7.0	8.3
Average		**4.3**	**2.7**	**0.9**	**10,997**	**11,186**	**182**	**321**	**15.0**	**4.8**	**6.0**	**6.2**	**6.3**	**7.7**
China WTE operators														
Sound Environ	000826 CH	2.7	(1.1)	1.1	432	625	95	128	34.5	22.0	20.4	16.1	15.4	17.3
Hangzhou Boil	002534 CH	26.7	73.2	1.3	961	N/A	11	N/A	15.2	1.2	N/A	0.5	N/A	N/A
Zhejiang Fuchu	002479 CH	(4.4)	10.7	1.0	514	574	23	30	11.4	4.5	5.2	7.3	5.2	7.4
Focused Photon	300203 CH	(13.2)	13.4	0.7	151	194	26	33	48.6	17.1	17.3	8.7	10.0	11.8
Wuxi Huaguang	600475 CH	4.8	16.8	1.1	538	N/A	12	N/A	17.9	2.3	N/A	6.2	N/A	N/A
Dongjian Environ	002672 CH	0.9	(2.7)	1.2	256	338	34	45	29.8	13.2	13.2	10.0	10.6	14.6
Average		**2.9**	**18.4**	**1.1**	**475**	**433**	**34**	**59**	**26.2**	**10.1**	**14.0**	**8.1**	**10.3**	**12.8**

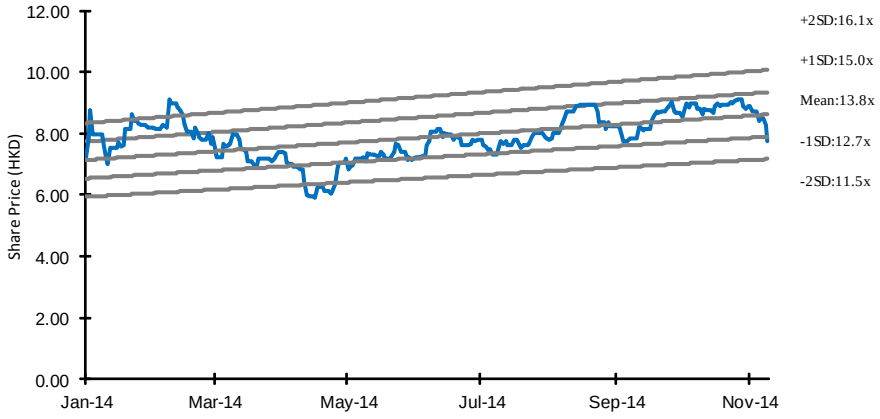
Source: Bloomberg, RHB

Figure 13: Sound Global's forward 4-year P/E band



Source: Bloomberg, RHB

Figure 14: Sound Global's forward P/E band since its delisting in Singapore



Source: Bloomberg, RHB

Our forecast for 2014-2016 is above consensus

Our revenue estimates are 0%/5%/8% above consensus for FY14-16F. We have factored in the M&A of Sound Environmental water projects, which was announced on 18 Sep, and assume that the deal will be completed in 1H2015. This could lead to at least a half-year contribution to the company's numbers in 2015.

Our recurring EPS forecasts are largely in line with consensus for FY15-16F. Our gross margin assumptions are below consensus. For FY15/FY16, we have factored in the M&A of Sound Environmental's water projects, and expect Sound Global to secure more projects after raising loans from overseas banks and the ADB – upon which it would be able to increase its capex. We also factored in issuing shares to IFC on 1 Dec, with a 2% dilution effect.

Figure 15: 2H14 earnings forecasts (CNYm)

	1H13 Actual	2H13 Actual	1H14 Actual	2H14 RHB	2H14 YoY%
EPC, external	1,247	1,240	1,303	1,109	-10.5
EPC, BOT	117	279	195	828	197.2
EPC	1,364	1,519	1,498	1,938	27.6
O&M, BOT	53	108	96	204	89.6
O&M, external	19	13	32	36	177.4
Equipment fabrications	38	25	8	56	119.7
Revenue	**1,475**	**1,665**	**1,635**	**2,234**	34.2
Cost of services	(1,030)	(1,151)	(1,134)	(1,571)	36.5
Gross profit	**444**	**514**	**500**	**663**	28.9
GPM	30.1%	30.9%	30.6%	29.7%	
Distribution & selling expenses	(13)	(25)	(15)	(33)	27.8
Administrative expenses	(63)	(69)	(73)	(90)	30.0
R&D	(11)	(9)	(9)	(16)	77.5
Operating expense	(87)	(103)	(97)	(138)	
Opex as % of revenue	5.9%	6.2%	5.9%	6.2%	
Other income	39	45	52	64	39.9
Interest income	6	6	7	6	12.7
Other expenses, net	(28)	17	(13)	13	-23.0
Operating profit	**373**	**478**	**450**	**607**	26.9
Operating margin	25.3%	28.7%	27.5%	27.2%	
Finance cost	(143)	(142)	(146)	(181)	27.3
PBT	**230**	**336**	**304**	**426**	26.8
Income tax	(55)	(86)	(64)	(89)	4.1
Effective tax rate	24.0%	25.5%	21.1%	20.9%	
MI	(1)	(1)	(0)	(2)	173.6
Net profit- reported	**173**	**250**	**240**	**335**	
NPM - reported	11.8%	15.0%	14.7%	15.0%	
Net profit - recurring	**195**	**237**	**250**	**325**	37.1
NPM - recurring	13.2%	14.2%	15.3%	14.5%	

Source: Company data, RHB

Figure 16: Detailed P&L statement (CNYm)

	FY11	FY12	FY13	FY14F	FY15F	FY16F
EPC, external	1,795	1,908	2,487	2,412	2,533	2,913
EPC, BOT	375	538	396	1,024	1,720	1,844
EPC	2,170	2,446	2,883	3,436	4,253	4,757
O&M, BOT	44	71	161	300	649	1,123
O&M, external	16	24	32	68	80	96
Equipment fabrications	58	112	64	64	64	64
Revenue	**2,288**	**2,652**	**3,140**	**3,868**	**5,046**	**6,039**
yoy change	29.6%	15.9%	18.4%	23.2%	30.4%	19.7%
Cost of services	(1,566)	(1,852)	(2,181)	(2,705)	(3,491)	(4,120)
Gross profit	**722**	**800**	**958**	**1,163**	**1,555**	**1,919**
yoy change	34.7%	10.8%	19.7%	21.4%	33.7%	23.4%
GPM	31.6%	30.2%	30.5%	30.1%	30.8%	31.8%
Distribution & selling expenses	(25)	(38)	(38)	(47)	(62)	(74)
Administrative expenses	(119)	(118)	(132)	(163)	(212)	(254)
R&D	(13)	(24)	(20)	(25)	(33)	(39)
Operating expense	(156)	(180)	(191)	(235)	(306)	(367)
Opex as % of revenue	6.8%	6.8%	6.1%	6.1%	6.1%	6.1%
Other income	24	50	84	116	215	416
Interest income	10	10	11	13	13	14
Other expenses, net	(11)	(3)	(11)	-	-	-
Operating profit	**589**	**677**	**851**	**1,057**	**1,477**	**1,982**
yoy change	52.7%	14.9%	25.8%	24.2%	39.7%	34.2%
Operating margin	25.8%	25.5%	27.1%	27.3%	29.3%	32.8%
Finance cost	(108)	(174)	(285)	(327)	(434)	(472)
Others	0	-	-	-	-	-
PBT	**481**	**503**	**566**	**731**	**1,043**	**1,511**
Income tax	(67)	(76)	(141)	(153)	(219)	(317)
Effective tax rate	14.0%	15.1%	24.9%	21.0%	21.0%	21.0%
MI	-	-	(2)	(3)	(4)	(6)
Net profit- reported	**414**	**428**	**423**	**575**	**820**	**1,188**
yoy change	43.1%	3.3%	-1.0%	35.7%	42.6%	44.9%
NPM - reported	18.1%	16.1%	13.5%	14.9%	16.2%	19.7%
Net profit - recurring	**423**	**430**	**432**	**575**	**820**	**1,188**
yoy change	20.0%	1.7%	0.4%	33.0%	42.6%	44.9%
NPM - recurring	18.5%	16.2%	13.8%	14.9%	16.2%	19.7%

Source: RHB

Management Background

Mr Wen Yibo, 48, executive director and chairman. Wen is the founder of Sound Global, and has over 20 years of experience in China's environmental protection industry. He has received various technological advancement awards and prominent design awards at the ministerial and national levels. He was awarded the "China Environmental Protection Development Contribution Award" by the China Environmental Protection Industry 2005. In Oct 2009, Wen was awarded the title of "Excellent Entrepreneur in Environmental Protection Industry of China" by China Environmental Protection Industry. He has a Master's degree in environmental engineering from Tsinghua University, and began doctoral studies in engineering in the same university in 2012.

Mr Zhang Jingzhi, 42, executive director and CEO. He has been the executive director of Sound Global since 2013, and is responsible for the overall management of the company. In 2004-2011, he served as director, then general manager and executive general manager of Sound Environmental. Zhang was awarded the title of "Excellent Entrepreneur in Environment Protection Industry of China" in 2009 and ranked 11th in the "2009 Forbes' best CEO of China-listed companies" list. He is a senior engineer (professor level), and has a Master's in business administration from Renmin University of China's School of Business in April 2001. Zhang has published over 20 technical articles in various publications and received second technological advancement awards at ministerial level.

Mr Wang Kai, 51, executive director and CFO. Wang is a senior engineer, certified investment adviser and certified level-one constructor (municipal engineering). He joined Sound Global in 1998 as a chief engineer, and has over 20 years of experience in sewage treatment and water pollution control, and has organised a number of design, construction and management projects. Before joining the company, he was an engineer at the Chengdu Institute of Methane Science of the Ministry of Agriculture. Wang has a Master's degree in radioactive waste management from Tsinghua University, and has published over 10 academic dissertations and won the Second Prize of the All-China Federation of Industry and Commerce's Science & Technology Progress Award.

Mr Jiang Anping, 41, executive director. Jiang is the chief engineer of Sound Global, and was appointed to the board in Oct 2011. He plays an important role in the innovation and design improvement of foreign engineering projects. He also manages the Beijing Municipal Science and Technology project, and is a key participant of three "water special projects" under the 12FYP. Jiang obtained a Master's degree in engineering from the Department of Environmental Science and Engineering of Tsinghua University in Jul 1998, and a PhD in engineering science from the Department of Biological Systems Engineering of Washington State University in US in Dec 2009.

Mr Luo Liyang, 40, executive director. Luo joined Sound Global in May 2000 and was appointed to the board in 2011. He is the deputy general manager on marketing, responsible for channel exploitation and product platforms management. Before joining the company, he was vice manager of the business department of Henan Luohe Huanhaiqing Environmental Protection. Luo graduated with a Bachelor's degree in environmental monitoring from Henan Normal University in Jul 1997. He was accorded engineer status in Dec 1998 by the Henan Science & Technology Committee.

Auditors

Deloitte Touche Tohmatsu has been Sound Global's auditor since its IPO in Singapore in Oct 2006.

Financial Exhibits

Profit & Loss (CNYm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover	2,652	3,140	3,868	5,046	6,039
Cost of sales	(1,852)	(2,181)	(2,705)	(3,491)	(4,120)
Gross profit	**800**	**958**	**1,163**	**1,555**	**1,919**
Gen & admin expenses	(118)	(132)	(163)	(212)	(254)
Selling expenses	(38)	(38)	(47)	(62)	(74)
Other operating costs	26	64	91	182	377
Operating profit	**671**	**851**	**1,044**	**1,463**	**1,968**
Operating EBITDA	685	867	1,060	1,469	1,975
Depreciation of fixed assets	(5)	(5)	(6)	(6)	(7)
Amortisation of intangible assets	(10)	(10)	(10)	-	-
Operating EBIT	**671**	**851**	**1,044**	**1,463**	**1,968**
Interest income	10	11	13	13	14
Interest expense	(174)	(285)	(327)	(434)	(472)
Exceptional income - net	(3)	(11)	-	-	-
Pre-tax profit	**503**	**566**	**731**	**1,043**	**1,511**
Taxation	(76)	(141)	(153)	(219)	(317)
Minority interests	-	(2)	(3)	(4)	(6)
Profit after tax & minorities	**428**	**423**	**575**	**820**	**1,188**
Reported net profit	**428**	**423**	**575**	**820**	**1,188**
Recurring net profit	**430**	**432**	**575**	**820**	**1,188**

Source: Company data, RHB

Cash flow (CNYm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Operating profit	**671**	**851**	**1,044**	**1,463**	**1,968**
Depreciation & amortisation	**15**	**15**	**16**	**6**	**7**
Change in working capital	**(694)**	**(621)**	**(1,642)**	**(2,068)**	**(1,144)**
Other operating cash flow	(40)	(64)	-	-	-
Operating cash flow	**(48)**	**183**	**(582)**	**(599)**	**831**
Interest received	10	11	13	13	14
Interest paid	(110)	(255)	(327)	(434)	(472)
Tax paid	(57)	(66)	(153)	(219)	(317)
Cash flow from operations	**(207)**	**(126)**	**(1,049)**	**(1,239)**	**56**
Capex	(5)	(6)	(6)	(6)	(6)
Other investing cash flow	(24)	(155)	(1,150)	(3,345)	(1,120)
Cash flow from investing activities	**(29)**	**(161)**	**(1,156)**	**(3,351)**	**(1,126)**
Dividends paid	(65)	-	-	-	-
Proceeds from issue of shares	-	-	146	1,800	-
Increase in debt	474	1,222	1,824	1,401	1,000
Other financing cash flow	665	(308)	-	1,840	-
Cash flow from financing activities	**1,073**	**915**	**1,970**	**5,041**	**1,000**
Cash at beginning of period	2,074	2,912	3,534	3,299	3,750
Total cash generated	**838**	**627**	**(235)**	**451**	**(70)**
Forex effects	(0)	(6)	-	-	-
Implied cash at end of period	**2,912**	**3,534**	**3,299**	**3,750**	**3,679**

Source: Company data, RHB

Financial Exhibits

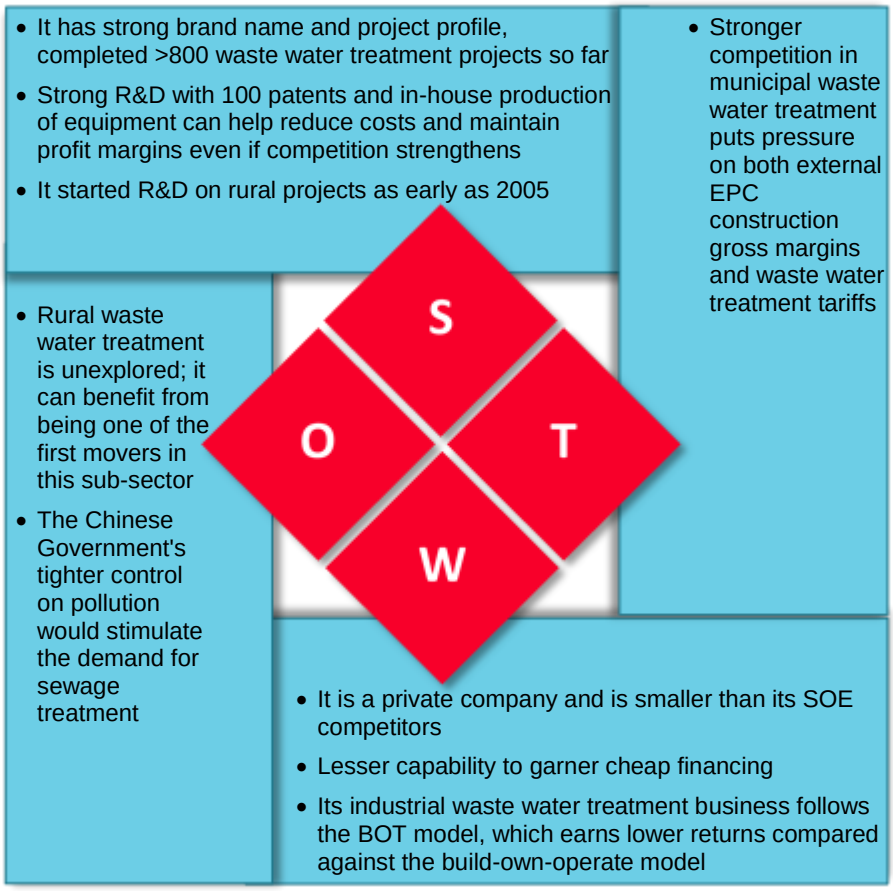
Balance Sheet (CNYm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total cash and equivalents	2,965	3,643	3,408	3,859	3,789
Inventories	24	28	35	45	53
Accounts receivable	1,433	1,569	1,740	1,827	2,269
Other current assets	586	1,098	1,915	2,733	1,919
Total current assets	**5,008**	**6,338**	**7,098**	**8,464**	**8,030**
Tangible fixed assets	91	92	93	93	93
Intangible assets	41	41	41	41	41
Total other assets	1,699	2,326	4,510	9,605	12,710
Total non-current assets	1,831	2,460	4,644	9,739	12,844
Total assets	**6,839**	**8,797**	**11,742**	**18,203**	**20,874**
Short-term debt	465	764	1,000	1,000	1,000
Accounts payable	1,171	1,654	2,051	2,647	3,124
Other current liabilities	127	151	151	151	151
Total current liabilities	**1,763**	**2,569**	**3,202**	**3,798**	**4,275**
Total long-term debt	1,811	2,416	4,004	7,245	8,245
Other liabilities	610	738	165	165	165
Total non-current liabilities	**2,421**	**3,154**	**4,169**	**7,410**	**8,410**
Total liabilities	**4,185**	**5,723**	**7,371**	**11,208**	**12,685**
Share capital	833	833	966	1,147	1,147
Retained earnings reserve	1,811	2,237	3,399	5,837	7,025
Shareholders' equity	**2,644**	**3,070**	**4,365**	**6,984**	**8,172**
Minority interests	11	4	7	11	16
Other equity	(0)	0	0	0	(0)
Total equity	**2,655**	**3,074**	**4,371**	**6,995**	**8,188**
Total liabilities & equity	**6,839**	**8,797**	**11,742**	**18,203**	**20,874**

Source: Company data, RHB

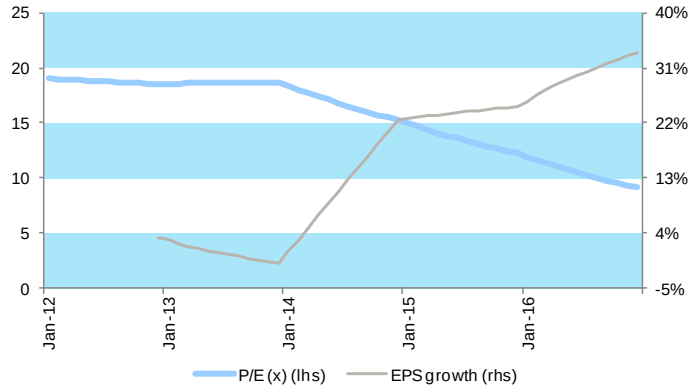
Key Ratios (CNY)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Revenue growth (%)	15.9	18.4	23.2	30.4	19.7
Operating profit growth (%)	13.6	27.0	22.6	40.2	34.5
Net profit growth (%)	3.3	(1.0)	35.7	42.6	44.9
EPS growth (%)	3.3	(1.0)	22.5	24.6	33.5
Bv per share growth (%)	15.2	16.1	22.6	34.8	17.0
Operating margin (%)	25.3	27.1	27.0	29.0	32.6
Net profit margin (%)	16.1	13.5	14.9	16.2	19.7
Return on average assets (%)	7.2	5.4	5.6	5.5	6.1
Return on average equity (%)	17.3	14.8	15.5	14.4	15.7
Net debt to equity (%)	(4.9)	3.6	36.5	62.7	66.6
Recurrent cash flow per share	(0.16)	(0.10)	(0.73)	(0.76)	0.03

Source: Company data, RHB

SWOT Analysis

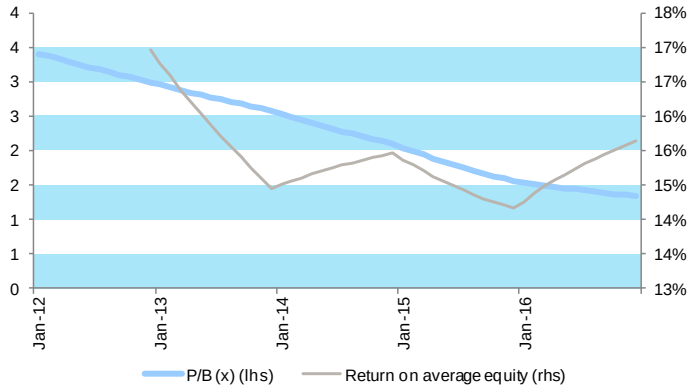


P/E (x) vs EPS growth



Source: Company data, RHB

P/BV (x) vs ROAE



Source: Company data, RHB

Company Profile

Sound Global Limited (SGL) is one of China's leading turnkey wastewater treatment solutions providers. It engaged in both external EPC and EPC BOT projects, which accounted for 80% and 12% of total revenue in 2013. SGL also provided O&M services for external clients and for its BOT projects. O&M projects are mainly located in Shanxi, Henan, Hainan, and Jilin; its existing BOT are in Shanxi, Jiangsu, Jilin, and Shandong. While SGL focuses on municipal sewage treatment (which contributed 93% revenue in FY13), it also provides turnkey solutions for industrial parks and for villages in rural area. SGL was listed in Singapore in Oct 2006, then dual-listed in Hong Kong in Sep 2010, and then delisted in Singapore in Jan 2014.

Recommendation Chart

Source: RHB, Bloomberg

Date	Recommenda	Target Price	Price
2014-04-15	Not Rated	na	6.95

Source: RHB, Bloomberg

CT Environmental Group (1363 HK)

Buy

Industrial - Environment Control

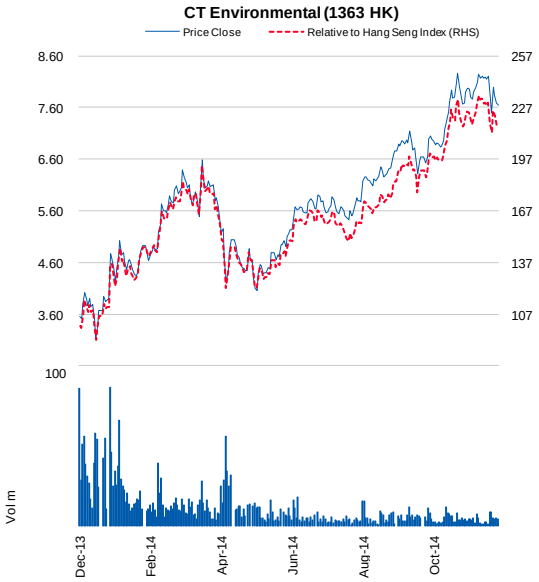
Target Price: HKD9.80

Market Cap: USD1,421m

Price: HKD7.64

Embracing New Drivers

Macro ◆◆◆
Risks ◆◆
Growth ◆◆◆
Value ◆



Source: Bloomberg

Avg Turnover (HKD/USD)	35.9m/4.62m
Cons. Upside (%)	4.1
Upside (%)	28.3
52-wk Price low/high (HKD)	3.13 - 8.27
Free float (%)	35
Share outstanding (m)	1,442
Shareholders (%)	
Tsui Cham To	61.0
Gu Yaokun	4.2

Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	96.9	(0.3)	13.9	49.8	129.4
Relative	94.6	(0.9)	19.5	46.7	128.9

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We initiate coverage on CT Environmental (CTEG) with a BUY and DCF derived TP of HKD9.80 (28% upside). CTEG is one of largest players in the treatment of industrial sewage and sludge sector in Guangdong, which has the highest budgeted spending on WWT in the 12FYP. We forecast CTEG to post a 3-year EPS growth of 39% on market share gains in the fast growing industrial sewage and sludge sectors as it owns the highest number of lucrative BOO projects.

- **Guangdong, the biggest WWT/sludge market.** Guangdong is determined to tackle pollution, and budgeted the most for 12FYP on municipal WWT of all provinces. Guangdong has the capability to achieve its 12FYP target, backed by its low debt/income ratio in China; also is committed to install the most sludge treatment capacity in 12FYP. With over 95% of revenue derived in Guangdong, CTEG is well-positioned to tap the benefit.
- **Sludge, the new growth driver**. CTEG becomes the largest sludge player in Guangdong, and could seize 59% share in 2015 according to our estimates. We expect sludge revenue to grow at 87%/38% in 2015/2016, accounting for 36% total revenue in 2015. Sludge delivers an IRR 20%, similar to industrial WWT, while a sludge plant takes only 1-1.5 year to reach full utilization vs 4-5 years for industrial WWT.
- **More M&As possible**. CTEG delivered huge earnings growth since IPO, partially due to M&As with Heyuan Solid Waste and Qingyuan Lvyou, Yinglong. The latest M&A of Guangzhou Lvyou was priced only at 8x P/E15, and will result in a 13% earnings enhancement for CTEG in 2015, according to our estimates. After the M&As, CTEG's net-debt to equity jumped to 67% as of Jun14, and to 102% by end 2015. Further fund raising is possible, since ICBC has offered CNY2.0bn bank facilities.
- **Initiate with BUY and TP HKD9.80**. Our TP of HKD9.80 is based on DCF, which implies FY15F P/E of 24x, higher than its HK-listed WWT sector average 17x P/E. In our view, this is justified by its much higher expected 3 year EPS CAGR of 39% mainly from market share gains in the fast growing and niche industrial sewage/sludge sectors and superior ROEs as it owns the most number of higher tariff BOO projects.
- **Risks:** During 2013, approximately 68% of CTEG's revenue was from industrial waste water treatment therefore its earnings are more cyclical than its peers' which engage mainly in municipal WWT.

Forecasts and Valuations	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover (HKDm)	384	485	1,036	1,772	2,158
Reported net profit (HKDm)	177	224	385	579	789
Recurring net profit (HKDm)	180	225	365	579	789
Recurring net profit growth (%)	10.0	25.2	62.1	58.8	36.2
Recurring EPS (HKD)	0.18	0.20	0.26	0.40	0.55
DPS (HKD)	0.00	0.03	0.05	0.07	0.10
Recurring P/E (x)	43.4	37.9	29.6	19.0	14.0
P/B (x)	27.1	9.4	6.1	4.7	3.7
P/CF (x)	32.2	96.7	77.0	26.2	13.4
Dividend Yield (%)	0.0	0.4	0.6	1.0	1.3
EV/EBITDA (x)	20.3	23.5	22.5	13.7	10.1
Return on average equity (%)	58.6	29.6	26.2	28.0	29.6
Net debt to equity (%)	150.3	9.4	74.2	109.5	61.8
Our vs consensus EPS (adjusted) (%)			(4.3)	11.2	21.8

Source: Company data, RHB

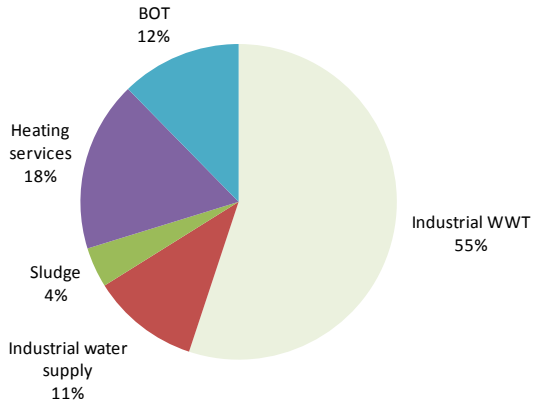
Investment Thesis

Initiate with Buy; TP of HKD9.80

We initiate coverage on CTEG with Buy rating, TP HKD9.80. Our TP of HKD9.80 is based on DCF, which implies FY15F P/E of 24x, higher than its HK-listed WWT sector average 17x P/E. In our view, this is justified by its i) much higher expected 3-year EPS CAGR (39% vs 23%), mainly due to market share gains in the fast growing and niche industrial sewage/sludge sectors and ii) superior ROEs as it owns the highest number of higher tariff BOO projects.

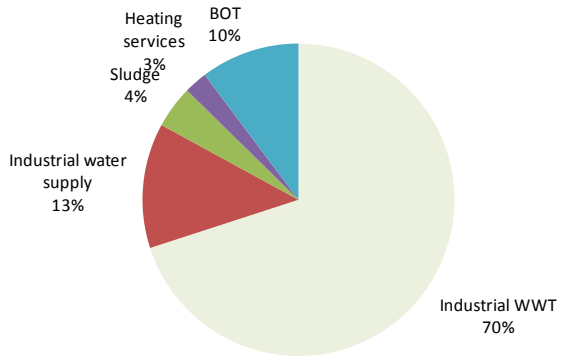
CTEG is one of the leading third-parties treatment operators on industrial WWT and sludge in China. Government policies continue to be favorable to waste treatment sector, amid Chinese government's commitment to fight against pollution. Guangdong has committed the most on municipal WWT and sludge in 12FYP, and CTEG is well-positioned in the market. Sludge/hazardous waste treatment will replace industrial WWT BOO to be CTEG's key earnings growth driver in 2014-16, after Guangzhou Lvyou M&A. Further M&As are possible, backed by HK2bn ICBC's bank facilities. Earnings visibility is high, and our estimates for FY14-FY16 are based on announced greenfield projects/M&A.

Figure 1: Revenue breakdown in 2013



Source: Company, RHB

Figure 2: Gross profit breakdown in 2013



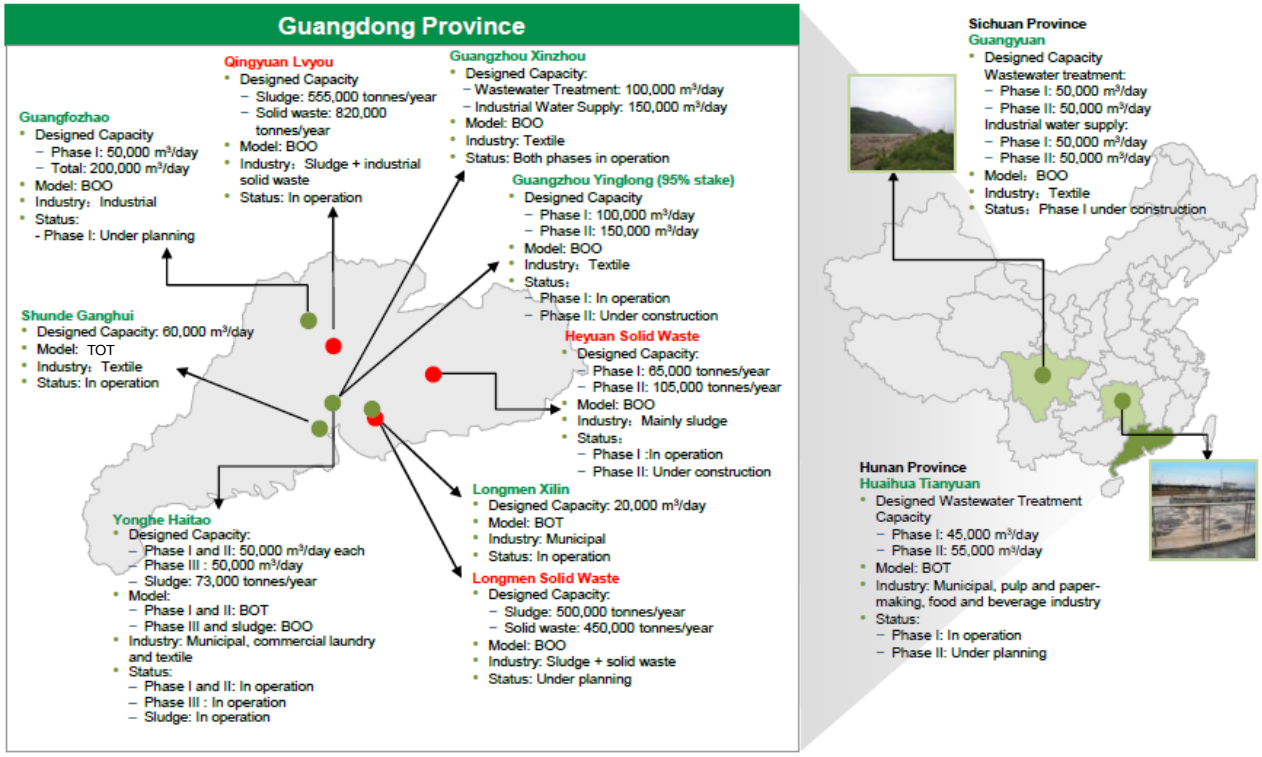
Source: Company, RHB

Figure 3: Treatment and water supply capacity of all CTEG's projects

Businesses	Industrial WWT	Water Supply	All BOT	Sludge	Solid waste
Modes	BOO	BOO	BOT	BOO	BOO
Capacity	daily	daily	daily	annual	annual
Guangzhou Xinzhou	100,000	150,000	-	-	-
Guangzhou Yinglong	250,000	-	100,000	-	-
Yonghe Haitao	100,000	-	-	255,500	-
Guangfozhao	50,000	-	-	-	-
Guangyuan	100,000	100,000	-	-	-
Longmen Xilin	-	-	20,000	-	-
Longmen Solid Waste	-	-	-	500,000	450,000
Huaihua Tianyuan	-	-	100,000	-	-
Shunde, Junan	-	-	60,000	-	-
Zhongshan	-	-	60,000	-	-
Heyuan Solid Waste	-	-	-	170,000	-
Qianyuan Lvyou	-	-	-	555,000	820,000
Guangzhou Lvyou	-	-	-	-	260,000
Total (tonnes)	600,000	250,000	340,000	1,480,500	1,530,000
Total (tonnes)	1,190,000			3,010,500	

Note: all BOT includes municipal waste water, industrial waste water, and water supply
Source: Company, RHB

Figure 4: Project locations



Note1: In Sep14, CTEG also won Zhongshan BOT project (30,000 tonnes daily capacity for industrial WWT and 30,000 tonnes daily capacity for industrial water supply)
Note2: Guangzhou Lvyou which has 260,000 annual hazardous waste treatment capacity and Yonghe Haitao sludge Phase 2 are not shown.
Source: Company, RHB

WWT sector outlook promising

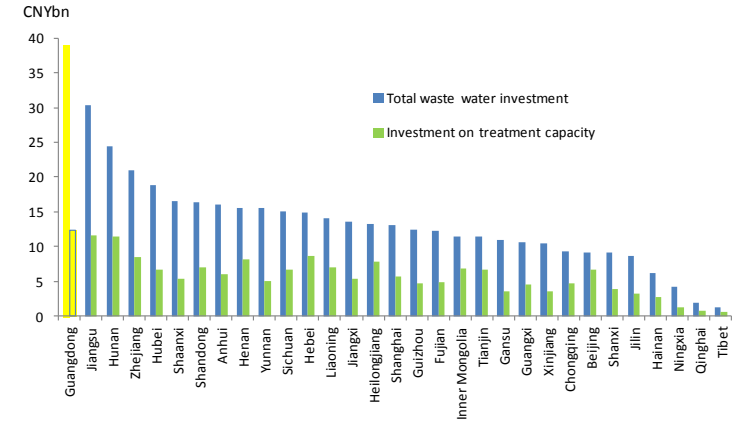
We favor sewage treatment industry, since the Chinese government is determined to tackle pollution and has committed CNY430bn on municipal sewage for 12FYP, 30% above its budget in 11FYP. Greenfields projects bidding will probably increase. Favorable polices such as tax holiday (3 years tax exemption and 3 years half tax rate for new WWT plants), value-added-tax (VAT) exemption, more financing available will continue. The soon-to-be released "Water Pollution Prevention and Treatment Plan" by NDRC will invest CNY2.0tn in 2013-2017 (vs CNY1.4tn in 2011-2015). The government's commitment on fighting against water pollution will extend to at least 2017.

Municipal sewage treatment rate is expected to reach 100% for 36 key cities and 85% for overall cities in 2015. To further improving water quality, in 13FYP, NDRC is likely to switch focus from treatment rate to treatment quality. Approximately 37% of municipal WWT capacity was Standard 2 or below in 2010 according to the Ministry of Housing and Urban-Rural Development (MOHURD), and we expect to see more municipal WWT upgrade to National Standard 1A/1B, or even Beijing Standard 1A/1B, in 13FYP. Hence, TOT projects will be probably be more available. In addition, rural will continue to be the key development focus, as NDRC will continue to escalate the still low treatment rate in 2015 for towns (30s) compared to cities (85%).

Guangdong, the best WWT/sludge market

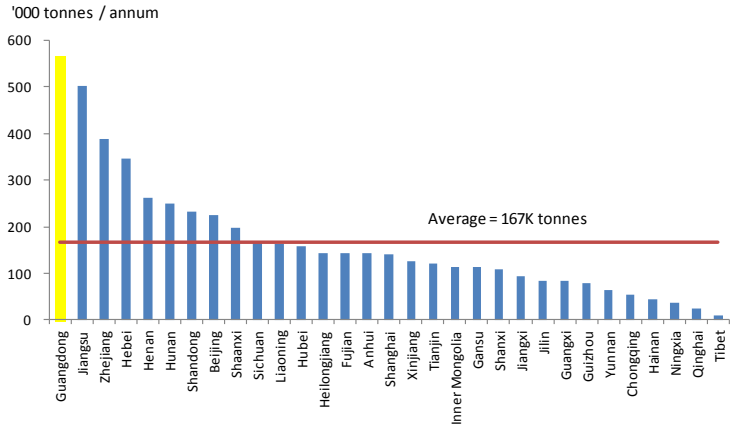
Guangdong is determined to tackle pollution and to build a better environment, and budgeted the most for 12FYP on municipal WWT among all provinces. Guangdong has the capability to achieve (if not surpass) its 12FYP target, backed by its third lowest debt/income ratio in China. Low debt/income ratio can also reduce tariff collection receivable risks. Guangdong also committed to install the most sludge treatment capacity in 12FYP, in order to uplift its sludge treatment rate which was only 20% in 2010 (vs national average 25%). We expect more greenfield sludge treatment capacity projects and municipal sludge treatment bids from the government.

Figure 5: 12FYP municipal sewage investment



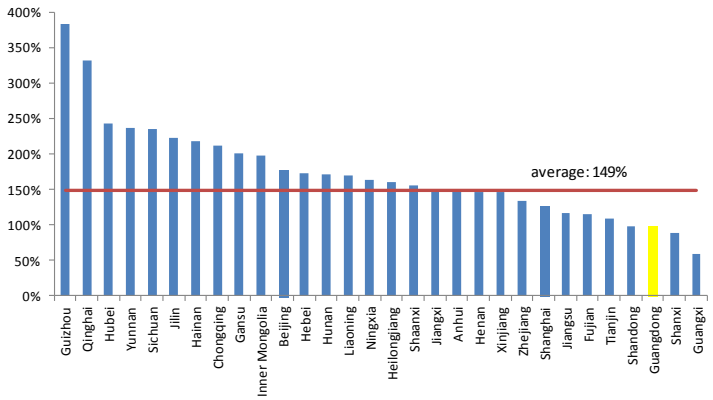
Source: NDRC, RHB

Figure 6: New sludge treatment capacity in 12FYP



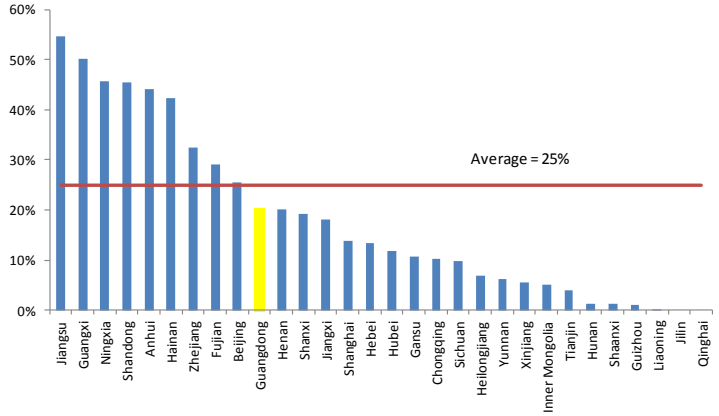
Source: Company, RHB

Figure 7: Local government debt/fiscal income ratio 2013



Source: National Audit Office of the PRC, CEIC, RHB

Figure 8: Sludge treatment rate by provinces, 2010



Source: MOHURD

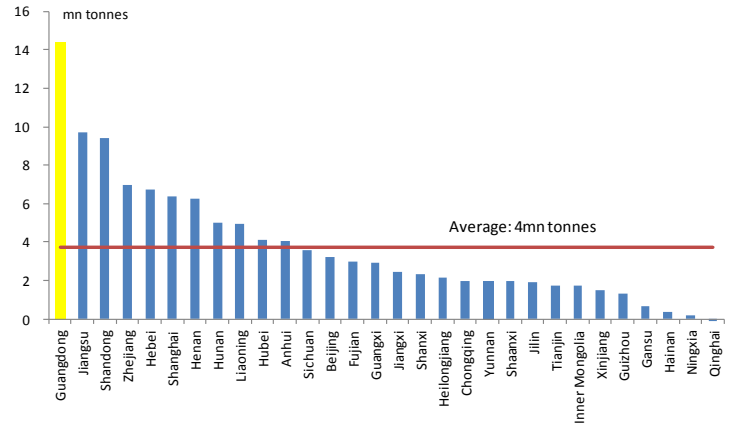
Overcapacity will not be a concern for Guangdong. For municipal WWT, although Guangdong planned to add the most municipal WWT capacity among provinces in 12FYP, its treatment capacity will grow only 16% amid high base. We believe new capacity will be fully utilized by higher treatment rate (from existing 77% to 93%). For sludge, Guangdong treatment rate was only 20% in 2010, and 70% for city in 2015, resulting over 3x increase in sludge treatment volume. The higher sludge treatment demand can fully use the nearly tripled sludge treatment capacity in Guangdong in 12FYP.

Figure 9: Waste treatment capacity in Guangdong

	Municipal WWT capacity, daily			Sludge treatmnet capacity, annual		
	2010	2015	Change	2010	2015	Change
City	14,229	16,554	16.3%	200	702	251.0%
County	578	628	8.7%	8	22	175.0%
Subtotal	14,807	17,182	16.0%	208	724	248.1%
Town	-	700	NA	-	50	NA
Total ('000 tonnes)	14,807	17,882	20.8%	208	774	272.1%

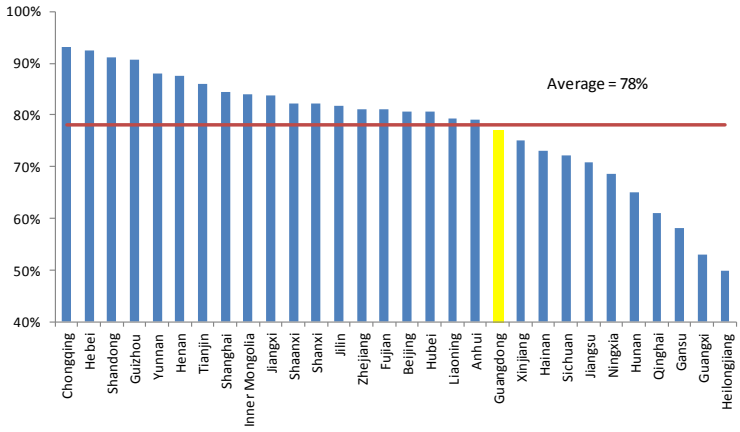
Source: NDRC

Figure 10: Municipal WWT daily capacity in 2010



Source: NDRC

Figure 11: Municipal sewage treatment rate, 2011



Source: National Bureau of Statistics

CTEG focuses in Guangdong, and 97% of its revenue was derived from Guangdong in 2013. CTEG has won the confidence of the local government, and secured a lot of lucrative BOO projects in the province, by invitation and negotiation with the government. CTEG is involved in design and planning of city's municipal and industrial park sewage system. Besides, Guangdong government is more flexible on the methods of project financing, and allows more BOO, which can generate much higher IRR (20%) than BOT's (10-12%).

CTEG has two projects outside Guangdong: Guangyuan phase 1/phase 2 BOO in Sichuan, and Huaihua Tianyuan phase 1/phase 2 in Hunan. Both are not too smooth. For Guangyuan, a key client delayed its move-in plan, and CTEG had to be accommodative. For Huaihua Tianyuan, Phase 1 is in BOT, which charges uniformed tariff and allow uniformed sewage polluting level. But some clients discharged more low quality sewage, and CTEG incurred loss for these clients. The problem still exists despite complaints to the local government. CTEG is requesting BOO for Tianyuan phase 2, or will not start construction.

CTEG will continue to focus Guangdong, which will contribute at least 94% of CTEG's total revenue in 2014-2016, according to our estimates. Sludge and hazardous waste projects, which are earnings growth drivers of CTEG in 2014-2016, are all located in Guangdong.

Figure 12: CTEG's water related projects

Projects	Province	Business	Status	Capacity	
				Daily tonne	Annual mn tonnes
BOO					
Guangzhou Xinzhou	Guangdong	Industrial WWT	Operating	100,000	37
Yonghe Haitao (Ph3)	Guangdong	Industrial WWT	Operating	50,000	18
Yonghe Haitao (Ph4)	Guangdong	Industrial WWT	Planning	50,000	18
Guangzhou Yinglong (Ph1)	Guangdong	Industrial WWT	Operating	100,000	37
Guangzhou Yinglong (Ph2)	Guangdong	Industrial WWT	Constructing	150,000	55
Guangyuan (Ph1)	Sichuan	Industrial WWT	Constructing	50,000	18
Guangfozhao (Ph1)	Guangdong	Industrial WWT	Planning	50,000	18
Guangyuan (Ph2)	Sichuan	Industrial WWT	Planning	50,000	18
Guangzhou Xinzhou	Guangdong	Industrial Water Supply	Operating	150,000	55
Guangyuan (Ph1)	Sichuan	Industrial Water Supply	Constructing	50,000	18
Guangyuan (Ph2)	Sichuan	Industrial Water Supply	Planning	50,000	18
Sub-total				850,000	310
BOT/TOT					
Yonghe Haitao (Ph1)	Guangdong	Municipal WWT	Operating	50,000	18
Yonghe Haitao (Ph2)	Guangdong	Municipal WWT	Operating	50,000	18
Longmen Xilin (Ph1&2)	Guangdong	Municipal WWT	Operating	20,000	7
Huaihua Tianyuan (Ph1)	Hunan	Industrial WWT	Operating	45,000	16
Shunde, Junan	Guangdong	Industrial WWT	Constructing	60,000	22
Zhongshan (Ph1 & 2)	Guangdong	Industrial WWT	Constructing	30,000	11
Zhongshan (Ph1 & 2)	Guangdong	Industrial Water Supply	Constructing	30,000	11
Huaihua Tianyuan (Ph2)	Hunan	Industrial WWT	Planning	55,000	20
Sub-total				340,000	124
Total				1,190,000	434

Source: Company, RHB estimates

Limited competition in industrial WWT/sludge

CTEG is one of the largest industrial WWT services providers in China, but its daily capacity in end 2013 accounted for only 0.9% of total daily treatment capacity in China. Most of industrial WWT is by manufacturers themselves, and third-party WWT operators will enjoy high growth by expanding market share, more than sufficient to offset the negative impact from China economy slowdown. Third-party industrial WWT operators has comparative advantages, like (1) higher economies of scale and cost efficiency, (2) expertise on WWT, and (3) government favoring third-party operators to save management the effort and monitoring costs.

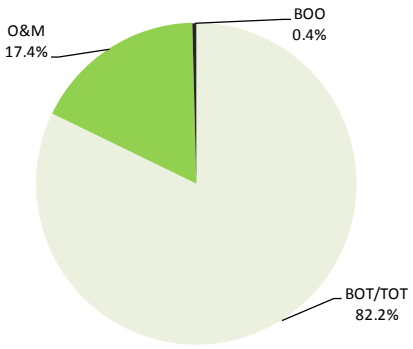
Competitors are expanding to industrial WWT. In our view, the risk is low since peers, especially SOE, use BOT but not BOO for industrial WWT, in order to simplify administration and mitigate industrial cyclical risks. Peers will then charge a single tariff, and IRR can be only similar to municipal WWT, creating little incentive for peers to rapidly expand to industrial WWT.

Sludge treatment is a new market and had been overlooked till May 2012, when NDRC published the 12FYP for municipal WWT and sludge, and NDRC targeted raise sludge treatment rate from <25% in 2010 to 75% in 2015. CTEG got its first Sludge Treatment Permit in Guangdong in 2013. It enjoys an early bird advantage and expands quickly via M&As. It will seize approximately 34% of the sludge market share in Guangdong in 2014, and then 59% in 2015, according to our estimates. The leading position will allow CTEG to enjoy economies of scale and cost advantage.

BOO model delivering higher IRR

BOO model allows CTEG to earn high IRRs of 20% for industrial WWT, way above 10-12% IRR for BOT. Higher return is driven by charging higher tariff: industrial WWT BOO (CNY3.0-5.2/m3 for existing Guangdong operating projects) than for municipal BOT (less than CNY1/m3) and for industrial BOT (CNY1.3/m3). CTEG can charge higher tariff for treating raw sewage from its clients to capture the full value chain. Under BOT, clients have to pre-treat sewage by themselves before discharging it to WWT operators. Majority of them do not have such expertise. CTEG can adjust tariffs for different clients based on sewage polluting levels. Contract term renewal is more flexible, ie one year for BOO vs three years for BOT. CTEG can own the project forever.

Figure 13: WWT capacity by privately-owned companies in China, 2013



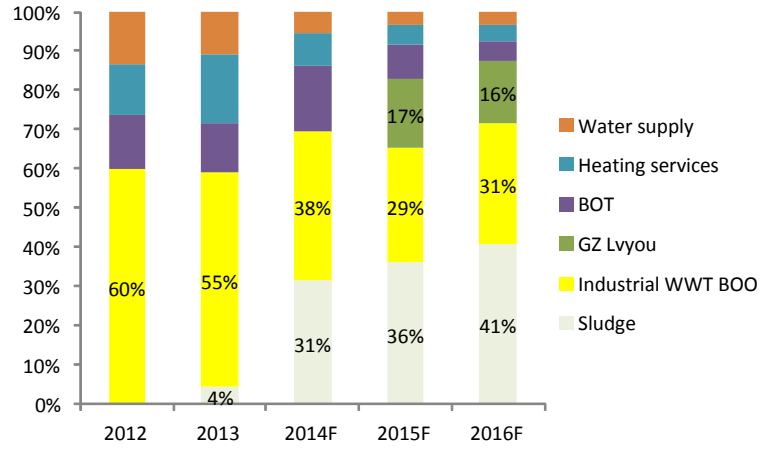
Source: Frost & Sullivan, Kangda

CTEG will continue to use 20% IRR hurdle rate for future BOO projects, applicable to both M&A and greenfield projects. CTEG secures BOO projects not only for industrial WWT, but also for sludge/solid waste. BOO is rare in China, and only 0.4% of WWT capacity held by private company was in BOO model. Therefore, competence of securing BOO shows strong management and M&A ability.

Sludge the new growth driver

Sludge treatment will replace WWT as CTEG's key earnings growth driver for 2014-2016. Municipal sludge treatment is non cyclical, and is stable compared to industrial WWT, providing better earnings visibility. We expect sludge revenue to grow at 87%/38% in 2015/2016. Sludge will account for 36%/37% of total revenue/gross profit in 2015, becoming CTEG's largest business segment. Sludge is in BOO model, delivering IRR 20%, equivalent to industrial WWT BOO's. Sludge gross margin was 60% 1H14, below industrial WWT BOO of 75%, because of lower utilization (70%) since sludge business was first launched in 2H13. The management expected sludge gross margin to reach 70% when utilization hits 100%.

Figure 14: Revenue breakdown by segments



Source: Company, RHB

Escalating utilization for sludge is much faster than for industrial WWT. A new, greenfield WWT plant will have 30% utilization rate (also breakeven utilization) in 1st operating year, and then rise to 80% in 4th year. The increase is gradual, in tandem with factories' move-in schedule to industrial park and expansion plan after operation. In contrast, a new, greenfield sludge treatment plant can achieve full utilization within 1-1.5 years. For example, Yonghe Haitao's sludge phase 1 (73K tonnes annual capacity), which is CTEG's first sludge plant, started operation in 2H13. Its utilization reached 78% in 1H14, much faster than industrial WWT. Its utilization has already full in mid 2014, and CTEG is constructing phase 2. For mega size sludge project like Qingyuan Lvyou (555K tonnes annual capacity), its utilization rate will rise gradually and will reach full utilization in 4 years.

Sludge treatment plant is quickly full because of strong sludge treatment demand. Heyuan Solid Waste Phase 1 has 65K annual capacity and commenced operation in early 2014. In Apr 2014, it won a municipal sludge treatment bid for Shenzhen Municipal Water Affairs Bureau. Contract size is 500 tonnes per day (or 183K tonnes per year) till end 2016. Heyuan plant is full immediately after operation, and excess volume has been sent to Yonghe Haitao Sludge phase 1 and Qingyuan Lvyou. We expect more municipal sludge treatment bids available in future, amid NDRC's target to uplift sludge treatment rate from 25% in 2010 to 80% for key cities like Guangzhou and Shenzhen.

CTEG has of only 3.3% market share in China in 2014 according to our estimates, based on operating capacity and NDRC's target. Nevertheless, in Guangdong, CTEG's market share is 34% in 2014, and will increase to 59% in 2015 after the completion of Yonghe Haitao, Sludge, Heyuan Solid Waste and partial completion of Longmen Solid Waste, which is too big and will be broken down into phases. CTEG is the largest sludge player in Guangdong, and can enjoy economies of scale such as lower operating cost and higher bargaining power to local government for better tariff.

Figure 15: Project list – sludge and solid waste

Projects	Province	Business	Status	Capacity	
				Daily tonnes	Annual tonnes
Sludge					
Yonghe Haitao, Sludge (Ph1)	Guangdong	Sludge	Operating	200	73,000
Heyuan Solid Waste (Ph1)	Guangdong	Sludge	Operating	178	65,000
Qianyuan Lvyou	Guangdong	Sludge	Operating	1,521	555,000
Yonghe Haitao, Sludge (Ph2)	Guangdong	Sludge	Constructing	500	182,500
Heyuan Solid Waste (Ph2)	Guangdong	Sludge	Constructing	288	105,000
Longmen Solid Waste	Guangdong	Sludge	Planning	1,370	500,000
Sub total				4,056	1,480,500
Solid waste/Hazardous					
Qianyuan Lvyou	Guangdong	Solid Waste	Operating	2,247	820,000
Longmen Solid Waste	Guangdong	Solid Waste	Constructing	1,233	450,000
Guangzhou Lvyou	Guangdong	Hazardous	NA	712	260,000
Sub total				4,192	1,530,000
Total				8,248	3,010,500

Source: Company, RHB

Guangzhou Lvyou a decent deal

CTEG announced on Oct 21, 2014, the acquisition of Guangzhou Lvyou from Mr. Gu Yao Kun, the ex-chairman of and the current director of Qingyuan Lvyou, and from other third parties. CTEG will acquire 100% stake of Guangzhou Lvyou, according to the announcement released on Dec 1, 2014.

Consideration will be CNY800mn, including CNY630mn to the existing shareholders and CNY170mn for debt settlement. The valuation is very low at 8x FY15 PE, based on the profit guaranteed by the sellers, much lower than CTEG's valuation of 20x PE15. The valuation was same as for Qingyuan Lvyou acquisition by CTEG on in Apr 2014 at 8x PE14. The deal is pending for Hong Kong Stock Exchange's approval. The management aimed to start consolidating Guangzhou Lvyou on Jan1, 2015, and so Guangzhou Lvyou will have full year earnings contribution for 2015. Guangzhou Lvyou earned CNY78mn in 9M14, and the sellers guaranteed profit of CNY100mn/CNY110mn for 2015/2016. If all consideration funded by bank loans, earnings enhancement to CTEG will be 13% for 2015.

Guangzhou Lvyou holds "Permit for Operation of Dangerous Wastes" to process 260,000 tonnes per annum of different types dangerous wastes, providing waste treatment services to more than 2,000 clients in Guangzhou City and surrounding area. It ranked top 3 in hazardous waste treatment in Guangdong. Mr. Gu is willing to sell Qingyuan Lvyou and later Guangzhou Lvyou to CTEG, since CTEG offers a larger platform for future development, and Mr. Gu is holding 4.2% stake on CTEG. CTEG is now a leading waste treatment service provider in Guangdong, with business exposure on waste water, sludge, solid waste, and hazardous waste.

Figure 16: Guangzhou Lvyou's earnings and guaranteed profit

	2015E Est.	2016E Est.	9M14 Actual
Revenue (CNYmn)			230
Net profit (CNYmn)	100	110	78
Net margin			34.0%
PE (x)	8.0	7.3	

Note: profit forecast is based on the guaranteed profit by Mr. Gu Yao Kun and other sellers
Source: Company, RHB estimates

More M&As are possible

CTEG has been delivering huge earnings growth since IPO, partially due to strong M&A projects, including Heyuan Solid Waste, Qingyuan Lvyou, Yinglong. The prompt M&As were supported by huge cash position (HKD395mn in end 2013) and low net-debt-to-equity (9%) post IPO. After spending on M&As and WWT/sludge plant construction, CTEG's net-debt-to-equity reached 67% in Jun14. CTEG will acquire Guangzhou Lvyou by end 2014, and will pay CNY630mn (or HKD794mn). The deal will be completed in Jan 2015, its net-debt-to-equity will reach approximately 110% by end 2015, according to our estimates. The gearing will drop to 62%, if CTEG has no new greenfield projects or M&As.

Despite the already high gearing, further borrowing is still possible. ICBC has offered CNY2bn bank facilities to CTEG, and CTEG has still not yet used any as of Jun 2014. Besides, CTEG can raise funds via issuing shares, or issues shares as consideration. Therefore, more M&As in future are still possible.

Figure 17: Consideration for CTEG's recent M&As

Consideration	HK$mn
Yinglong, stake up from 46% to 95%	246
Qingyuan Lvyou	158
Guanzhoug Lvyou	794
Total	1,198

*** Shunde M&A has been cancelled and transformed to a BOT project*
Note: consideration shows only the payment for equity, but yet include existing debt of acquired companies.
Source: Company, RHB estimates

Target of doubling WWT capacity in next 2 years largely on track

CTEG plans to double its water projects daily capacity to 1,080k tonnes by end 2015/early 2016, from 515k tonnes in end 2013. It currently has daily capacity of 1,190k tonnes, of which capacity under operation/construction amounted to 935k tonnes, achieving 87% target. The remaining target is 145k tonnes. Although CTEG has 255k tonnes on the pipelines (under planning stage), Guangyuan phase 2 (50k tonnes WWT and 50k tonnes for water supply) and Huaihua Tianyuan phase 2 (55k tonnes) are likely delayed, while Yonghe Haitao phase 4 (50k tonnes) has no timetable. Only Guangfozhao Phase 1 (50K tonnes) can start operation in early 2016.

CTEG can still achieve its target by M&A of operating/under construction project with 100K tonnes capacity, in our view. M&A opportunities are available, because third party WWT treatment is still not common, and the industrial WWT market is fragmented.

Figure 18: Daily treatment capacity of all CTEG's projects

	Total	Operating	Constructing	Planning
Industrial WWT	790,000	295,000	290,000	205,000
Industrial Water Supply	280,000	150,000	80,000	50,000
Municipal WWT	120,000	120,000	-	-
Water projects	1,190,000	565,000	370,000	255,000
Sludge	3,008	1,899	288	822
Solid Waste	3,479	2,247	1,233	-
Total (tonnes)	1,196,488	569,145	371,521	255,822

Note: Guangzhou Lvyou M&A is not yet finalized and is excluded
Source: Company, RHB

Industrial WWT BOO growth slowdown in 2015

CTEG enjoyed full utilization on industrial WWT BOO in 2013, as Xinzhou was its only one plant before end 2013 and is very matured. New plants were added in 2014. In general, new WWT plants has low utilization: a new, greenfield water plant will have 30% utilization in 1st operating year, and then rise to 80% in 4th year. The increase is gradual, in tandem with factories' move in schedule to industrial park and expansion plan after operation.

Industrial WWT BOO enjoyed over 94% utilization in 1H14, and utilization will remain high in 2014 despite adding two new plants. CTEG started to consolidate Guangzhou Yinglong phase 1 (started operation in 2012) by uplifting stake from 46% to 95% in May 2014. As the plant is not new, its utilization rate reached 86% in 1H14. Yonghe Haitao phase 3 is new, but is located in an matured industrial park where all factories are operating and treating their own sewage. CTEG simply invited them to use centralized treatment services. Sewage volume is already there, and its utilization rate reached 88% in 1H14 despite short operating history of 6 months.

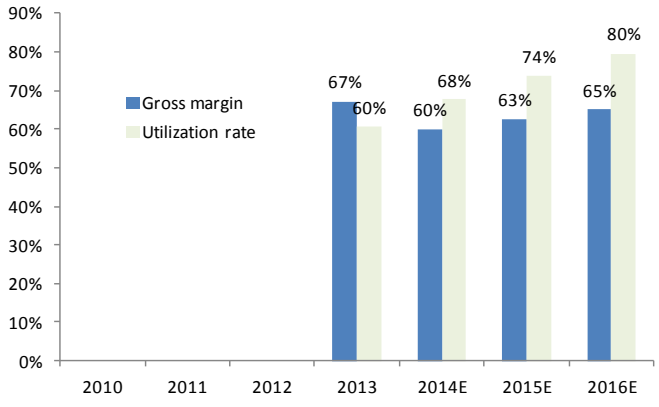
High utilization rate may not be sustainable in 2015. Two new WWT plants will be added. Guangyuan Phase 1 is located in new, greenfield industrial park, and so 1st year utilization rate will be 30-40%, not 80%. Guangzhou Yinglong phase 2 is slightly better than Guangyuan Phase 1 given Guangzhou Yinglong phase 1 very full. Therefore, revenue from industrial WWT BOO will slow down from 49% in 2014, to 26% in 2015.

Gross margin recovery in 2015/2016

CTEG's gross margin was 62% in 1H14, below 64% in 2H13. We expect gross margin will continue to drop in 2H14, due to more contribution from sludge which has lower gross margin compared to industrial WWT BOO's. New sludge plants (i.e. Qingyuan Lvyou and Heyuan Solid Waste phase 1 added in 1H14 will have full six month contribution in 2H14. Sludge and industrial WWT BOO will each contribute 1/3 of revenue. We expect 56% gross margin for full year 2014, down from 63% in 2013.

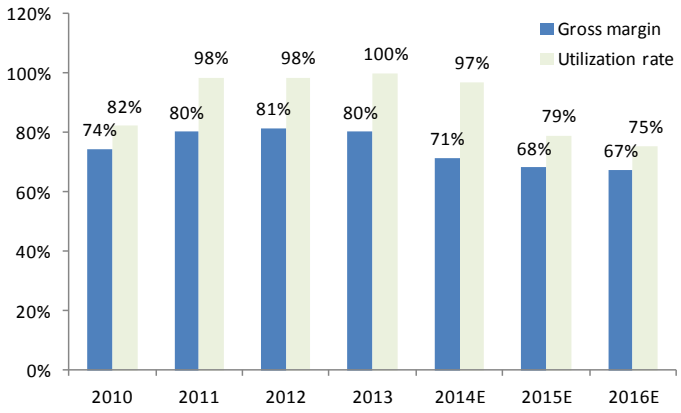
Gross margin will probably edge up in 2015. Utilization rate of existing sludge treatment plants, including the mega-size Qingyuan Lvyou, will increase, boosting up gross margin and offsetting the decline in industrial WWT BOO gross margin. On the contrary, industrial WWT BOO gross margin will likely decline. Gross margin level is correlated to utilization rate, and we expect utilization rate to trend down in 2014-2016F due to new WWT plants dragging down utilization. CTEG consolidated the earnings of Guangzhou Yinglong phase 1 on May1, 2014 . However, its gross margin is only 50%, below other industrial WWT BOO's of 70-80%, due to less sophistical infrastructure design. CTEG will improve the operation efficiency of Yinglong Phase 1 after the completion of construction of Yinglong Phase 2, and expect to raise Yinglong Phase 1 gross margin to 60%. Yinglong Phase 2 will start operation in 2Q15, and then Yinglong Phase 1 can be shut down for improving works.

Figure 19: GPM & utilization rate, sludge



Source: Company, RHB estimates

Figure 20: GPM & utilization rate, industrial WWT BOO



Note: excluding Guangzhou Yinglong before 2014, since it was an associate
Source: Company, RHB estimates

Key Risks

China economy/export slowdown. Industrial waste water treatment (WWT) volume is more volatile than municipal WWT, and is highly cyclical. If China economy/export slows down sharply, industrial sewage volume will be reduced. And, if economic slowdown will reduce the sewage polluting level, resulting lower tariff. CTEG's 69% revenue was from industrial in 2013 and so its earnings is cyclical than peers which engage only in municipal WWT. During the economic crisis in 2009/2010, utilization rate of its Guangzhou Xinzhou plant dropped from 100% to 82%.

NDRC missing 12FYP target. NDRC set aggressive targets for waste treatment capacity investment and utilization in 12FYP. Our market size forecasts are largely based on the government's target. If NDRC misses its target, fewer greenfield projects for industry players will be the result, increasing competition and hence dragging down returns. The risk is fairly low because of increasing concern among the public on pollution, and fighting against pollution is the Government's top priority.

Factories relocation to inland China. Some manufacturers migrate their factories into inland like Sichuan and Hunan, to save labor/land cost. They are usually low-value added and more polluting, and cannot afford WWT expenses. Over 95% of CTEG's revenue was derived from Guangdong in 2013. If CTEG's existing clients migrate to inland, CTEG will be significantly affected.

No more low-cost financing. WWT projects require heavy capex, and low-cost financing is the critical success factor. If fundraising becomes difficult, project execution will be slowed or halted. Similarly, higher interest rate will cut project return, resulting slower expansion. For CTEG, ICBC has given CNY2bn bank facilities to CTEG for M&A, and HK banks also offer loans to CTEG with even lower rate. The risk is manageable to CTEG.

New entrants to industrial WWT. Competitors are expanding to industrial WWT. In our view, the risk is low since competitors (especially SOE) use BOT model for industrial WWT, generating IRR only similar to municipal WWT, creating low incentive for them to expand to industrial rapidly. Besides, third-party WWT is still uncommon (accounting for 0.1% of total industrial WWT capacity) and most of industrial sewage is treated by manufacturers themselves. Promotion of centralized WWT can relieve competition.

Project delay risks. CTEG targeted to have 1,080K tonnes total water-related capacity by end 2015/early 2016. Guangyuan phase 1 operation commencement has been delayed to mid 2015, and hence its phase 2 WWT plant will be postponed. Huaihua Tianyuan phase 2 will put on hold as CTEG is requesting for BOO model. Guangfozhao is unlikely to start operation in 2015, and CTEG now expects it to commence operation in 1H16. Projects delay will reduce tariff collection and affect earnings.

Valuations

Our TP of HKD9.80 is based on DCF. We use 7.8% WACC, based on risk free rate of 3.0% and equity risk premium of 5.0%, with 0% terminal growth for its future growth is capped by the capacity of CTEG's waste treatment / water supply plants.

The fair value derived from DCF implies FY15 P/E of 24x, higher than its Hong Kong listed its sector average 17x P/E. In our view, this is justified by its much higher expected 3 year EPS CAGR, mainly due to market share gains in the fast growing and niche industrial sewage/sludge sectors and superior ROEs as it owns the most number of higher tariff BOO projects.

Figure 21: DCF assumptions

Present value of FCF	13,036
Present value of terminal value	4,039
EV (HKDm)	17,075
Beta	1.11
Risk free	3.0%
Equity risk premium	5.0%
Cost of equity	8.6%
Cost of debt (after tax)	6.0%
WACC	7.8%
Terminal growth	0.0%
Debt/Capital	30.0%

Source: Bloomberg, RHB

Figure 22: DCF assumptions

	HKDm	HKD/share	GNAV %	Valuation Methodology
Industrial WWT, BOO	5,626	3.90	32.9	DCF (7.8% WACC, 0% Terminal Growth)
Industrial water supply, BOO	514	0.36	3.0	DCF (7.8% WACC, 0% Terminal Growth)
Sludge	7,684	5.33	45.0	DCF (7.8% WACC, 0% Terminal Growth)
Guangzhou Lvyou	2,855	1.98	16.7	DCF (7.8% WACC, 0% Terminal Growth)
Heating services	69	0.05	0.4	DCF (7.8% WACC, 0% Terminal Growth)
BOT	328	0.23	1.9	DCF (7.8% WACC, 0% Terminal Growth)
GNAV at year end	**17,075**	**11.84**	**100.0**	
Debt, MI & others	(2,895)	(2.01)		
NAV at year end	**14,180**	**9.83**		

Source: RHB

Figure 23: CTEG's forward P/E band since listing

Source: Bloomberg, RHB estimates

Figure 24: Valuation table I

Company	Ticker	Price	Mkt cap (USDm)	3-mth avg t/o (USDm)	P/E Hist (x)	P/E FY1 (x)	P/E FY2 (x)	EPS FY1 YoY%	EPS FY2 YoY%	3-Yr EPS Cagr (%)	PEG (x)	Div yld Hist (%)	Div yld FY1 (%)	P/B FY1 (x)
HSI		**24003**			**10.4**	**11.1**	**10.5**	**(6.9)**	**6.6**	**3.0**	**3.7**	**3.8**	**3.6**	**1.2**
CSI300		**3125**			**13.5**	**12.7**	**11.0**	**6.9**	**15.0**	**12.1**	**1.0**	**1.9**	**2.3**	**1.8**
HK-listed WWT services														
Sound Global	967 HK	7.73	1,463	4.3	18.3	15.3	12.2	20.1	24.6	25.9	0.6	NA	0.0	2.1
CTEG	1363 HK	7.64	1,421	4.8	37.9	29.6	19.0	28.1	55.5	39.4	0.7	0.4	0.6	6.1
BEW	371 HK	5.00	5,617	9.2	31.9	25.7	22.2	24.2	15.8	19.4	1.3	1.1	1.4	3.0
Kangda	6136 HK	3.20	854	5.6	NA	17.9	13.2	NA	35.2	N/A	NA	NA	0.5	2.0
Tianjin Capital	1065 HK	5.20	1,856	3.3	20.6	19.7	19.2	5.0	2.4	5.2	3.8	1.9	1.6	1.4
Average					**27.2**	**21.6**	**17.2**	**19.4**	**26.7**	**22.5**	**1.6**	**1.1**	**0.8**	**2.9**
Singapore-listed WWT services														
HanKore	HANKORE SI	1.02	397	1.5	NA	27.8	23.6	NA	17.6	N/A	NA	NA	NA	1.5
SIIC	SIIC SP	0.15	1,058	4.7	22.6	22.6	22.6	0.0	0.0	N/A	NA	NA	NA	2.0
Average					**22.6**	**25.2**	**23.1**	**0.0**	**8.8**	**NA**	**NA**	**NA**	**NA**	**1.7**
WTE with WWT services														
CEI	257 HK	11.36	6,571	11.6	34.8	30.4	22.2	14.6	36.7	27.6	1.1	0.8	0.9	3.5
China-listed WWT services														
Chongqing Water	601158 CH	7.78	6,071	25.2	19.9	19.5	18.7	2.1	4.5	5.4	3.6	3.5	3.5	2.7
Shanghai Chent	600649 CH	7.23	3,512	18.5	15.7	13.9	11.9	13.0	17.3	14.5	1.0	2.1	NA	NA
Beijing Origin	300070 CH	33.18	5,774	50.9	41.9	28.9	20.7	45.0	39.7	37.6	0.8	0.2	0.2	5.8
Beijing Capital	600008 CH	9.28	3,319	36.9	34.0	34.1	27.9	(0.5)	22.4	14.0	2.4	1.6	1.6	2.4
Chengdu Xingro	000598 CH	6.25	3,034	91.7	24.0	21.6	18.5	11.5	16.2	11.5	1.9	0.4	0.6	2.5
Zhongshan Public	000685 CH	22.40	2,836	43.8	28.7	33.9	29.5	(15.4)	15.2	15.1	2.2	0.7	NA	2.4
Tianjin Cap	600874 CH	9.21	1,856	26.5	46.1	49.3	44.5	(6.5)	10.7	7.0	7.0	0.9	0.8	3.2
Beijing Water	300055 CH	43.33	1,726	16.7	71.0	56.5	41.9	25.7	34.8	29.6	1.9	0.3	0.5	5.2
Average					**35.2**	**32.2**	**26.7**	**9.4**	**20.1**	**16.8**	**2.6**	**1.2**	**1.2**	**3.5**
Int'l-listed WWT operators														
American Water	AWK US	52.14	9,349	34.2	25.1	21.6	20.0	15.9	8.1	10.1	2.1	2.3	2.3	2.0
Veolia	VIE FP	14.71	10,168	24.1	NA	33.1	20.3	NA	63.1	N/A	NA	4.8	4.8	1.0
Suez	SEV FP	14.88	9,882	15.5	21.6	20.7	18.5	4.3	11.5	9.6	2.2	4.4	4.4	1.5
Average					**23.3**	**25.1**	**19.6**	**10.1**	**27.6**	**9.8**	**2.1**	**3.8**	**3.8**	**1.5**
China WTE operators														
Sound Environ	000826 CH	25.05	3,436	52.1	35.8	26.2	19.9	36.4	31.6	33.0	0.8	0.3	0.4	4.0
Hangzhou Boil	002534 CH	24.08	1,568	6.4	141.6	NA	NA	NA	NA	N/A	NA	0.6	NA	NA
Zhejiang Fuchu	002479 CH	9.75	1,165	14.3	51.3	40.6	32.5	26.3	25.0	13.8	2.9	NA	NA	2.5
Focused Photon	300203 CH	19.46	1,408	25.4	54.1	40.5	31.6	33.6	28.1	28.5	1.4	0.2	0.5	4.2
Wuxi Huaguang	600475 CH	15.54	647	15.7	51.8	34.5	27.8	50.0	24.4	39.8	0.9	0.6	NA	NA
Dongjian Environ	002672 CH	32.61	1,704	13.4	53.2	41.8	26.7	27.2	56.5	39.9	1.0	0.6	0.6	4.5
Average					**64.6**	**36.7**	**27.7**	**34.7**	**33.1**	**31.0**	**1.4**	**0.5**	**0.5**	**3.8**

Source: Bloomberg, RHB

Figure 25: Valuation table II

Company	Ticker	Price Chg 1 mth	Price Chg 3 mth	Beta	Rev Hist (USDm)	Rev FY1 (USDm)	NP Hist (USDm)	NP FY1 (USDm)	Gross margin Hist (%)	Net margin Hist (%)	Net margin FY1 (%)	ROE Hist (%)	ROE FY1 (%)	ROE FY2 (%)
HSI														
CSI300														
HK-listed WWT services														
Sound Global	967 HK	(12.2)	(11.3)	0.9	510	629	69	92	30.5	13.8	14.9	14.8	15.5	14.4
CTEG	1363 HK	(0.7)	13.9	N/A	63	134	29	47	63.1	46.4	35.2	29.6	26.2	28.0
BEW	371 HK	(8.4)	(8.8)	0.7	827	1,190	140	194	39.1	19.0	18.2	10.0	11.5	12.6
Kangda	6136 HK	(12.3)	(7.2)	N/A	218	278	38	47	38.3	17.3	17.0	18.9	14.3	13.3
Tianjin Capital	1065 HK	(5.5)	(12.9)	1.2	260	268	46	49	38.1	17.6	18.1	7.9	8.0	7.0
Average		**(7.8)**	**(5.3)**	**0.9**	**375**	**500**	**64**	**86**	**41.8**	**22.8**	**20.7**	**16.2**	**15.1**	**15.1**
Singapore-listed WWT services														
HanKore	HANKORE SI	18.0	16.7	1.2	85	289	(19)	65	40.1	(23.8)	24.1	(8.4)	9.4	6.1
SIIC	SIIC SP	(12.0)	(12.6)	0.9	197	188	24	45	29.8	12.3	23.8	7.4	9.1	10.5
Average		**3.0**	**2.0**	**1.1**	**141**	**238**	**3**	**55**	**34.9**	**(5.7)**	**24.0**	**(0.5)**	**9.3**	**8.3**
WTE with WWT services														
CEI	257 HK	6.8	4.6	0.8	686	887	171	216	44.7	24.9	24.4	12.2	12.0	14.8
China-listed WWT services														
Chongqing Water	601158 CH	27.3	37.2	1.2	645	720	305	307	49.9	47.3	42.6	13.5	13.6	13.9
Shanghai Chent	600649 CH	0.0	3.6	1.2	547	780	224	255	37.0	40.9	32.7	11.3	10.0	N/A
Beijing Origin	300070 CH	13.1	3.8	1.0	496	741	137	196	35.5	27.5	26.5	19.1	20.6	22.3
Beijing Capital	600008 CH	22.3	28.7	1.1	667	742	98	99	37.8	14.7	13.4	10.5	7.7	8.3
Chengdu Xingro	000598 CH	7.8	9.5	1.1	388	430	121	141	47.4	31.2	32.9	11.3	11.4	12.0
Zhongshan Public	000685 CH	59.5	74.3	1.1	138	184	99	108	32.3	71.5	58.7	10.6	9.7	7.6
Tianjin Cap	600874 CH	6.5	7.3	1.1	260	271	46	43	38.1	17.6	16.0	7.9	N/A	6.7
Beijing Water	300055 CH	14.1	28.6	0.9	124	178	23	30	25.7	18.5	16.8	6.8	9.1	11.6
Average		**18.8**	**24.1**	**1.1**	**408**	**506**	**132**	**147**	**38.0**	**33.7**	**29.9**	**11.4**	**11.7**	**11.8**
Int'l-listed WWT operators														
American Water	AWK US	0.3	3.2	0.5	2,902	3,081	369	431	N/A	12.7	14.0	8.2	8.8	9.7
Veolia	VIE FP	4.7	2.0	1.1	18,167	18,737	(110)	213	15.0	(0.6)	1.1	0.1	3.0	5.1
Suez	SEV FP	8.0	2.8	1.0	11,922	11,741	287	319	N/A	2.4	2.7	10.4	7.0	8.3
Average		**4.3**	**2.7**	**0.9**	**10,997**	**11,186**	**182**	**321**	**15.0**	**4.8**	**6.0**	**6.2**	**6.3**	**7.7**
China WTE operators														
Sound Environ	000826 CH	2.7	(1.1)	1.1	432	625	95	128	34.5	22.0	20.4	16.1	15.4	17.3
Hangzhou Boil	002534 CH	26.7	73.2	1.3	961	N/A	11	N/A	15.2	1.2	N/A	0.5	N/A	N/A
Zhejiang Fuchu	002479 CH	(4.4)	10.7	1.0	514	574	23	30	11.4	4.5	5.2	7.3	5.2	7.4
Focused Photon	300203 CH	(13.2)	13.4	0.7	151	194	26	33	48.6	17.1	17.3	8.7	10.0	11.8
Wuxi Huaguang	600475 CH	4.8	16.8	1.1	538	N/A	12	N/A	17.9	2.3	N/A	6.2	N/A	N/A
Dongjian Environ	002672 CH	0.9	(2.7)	1.2	256	338	34	45	29.8	13.2	13.2	10.0	10.6	14.6
Average		**2.9**	**18.4**	**1.1**	**475**	**433**	**34**	**59**	**26.2**	**10.1**	**14.0**	**8.1**	**10.3**	**12.8**

Source: Bloomberg, RHB

Our forecast is above consensus for 2014-2016

Our revenue estimates are 10%/33%/31% above consensus for FY14-16F. We have factored in the M&A of Guangzhou Lvyou which was announced on Oct 21, 2014. We assume the M&A will be completed on Jan1, 2015, and the deal will have full year contribution in 2015.

Our recurring EPS forecasts were below with consensus (-4%) for 2014, because of lower overall gross margin to factor in more contribution from sludge. Our estimates are higher than consensus by 11%/22% for FY15-16, because we have factored in the M&A of Guangzhou Lvyou and higher utilization rate for sludge, resulting in higher revenues and hence earnings.

Figure 26: 2H14 earnings forecasts (HKDm)

	1H13 Actual	2H13 Actual	1H14 Actual	2H14 RHB	2H14 YoY%
Industrial WWT	122	145	177	222	52.9
Industrial water supply	24	29	25	27	-8.0
Sludge	-	20	96	230	1,049.8
Heating services	40	45	40	44	-0.7
BOO	187	239	338	523	119.1
BOT WWT	26	18	27	28	58.8
BOT finance income	8	8	8	12	58.8
BOT construction contracts	-	-	-	100	NA
Revenue	**221**	**264**	**373**	**663**	151.2
Cost of services	(84)	(95)	(138)	(316)	234.0
Gross profit	**137**	**169**	**235**	**346**	104.8
GPM	62.0%	64.1%	62.9%	52.2%	
SG&A	(18)	(4)	(38)	(66)	1,668.7
SG&A % of revenue	8.3%	1.4%	10.1%	10.0%	
Other revenue	0	19	23	-	-100.0
Other operating expenses	(0)	(20)	(1)	1	-105.2
Operating profit	**119**	**165**	**219**	**281**	70.9
Operating margin	53.8%	62.4%	58.8%	42.4%	
Interest income	0	0	0	0	-17.3
Finance cost	(16)	(17)	(21)	(47)	184.5
Share of an associate's profits	9	14	4	-	-100.0
PBT	**112**	**162**	**202**	**234**	44.7
Income tax	(22)	(27)	(22)	(26)	-4.3
Effective tax rate					
MI	(0)	(0)	(1)	(2)	559.6
Net profit - reported	**90**	**134**	**179**	**207**	53.7
NPM - reported	40.7%	51.0%	48.0%	31.2%	
Net profit - recurring	**90**	**135**	**159**	**206**	52.3
NPM - recurring	40.7%	51.2%	42.6%	31.0%	

Source: Company data, RHB estimates

Figure 27: Detailed P&L statement (HKDmn)

	FY11	FY12	FY13	FY14F	FY15F	FY16F
Industrial WWT	243	230	267	398	496	650
Industrial water supply	51	52	53	51	58	68
Sludge	-	-	20	326	610	841
Heating services	25	49	85	85	85	85
BOO	319	330	425	860	1,620	2,051
BOT WWT	46	37	44	55	75	80
BOT finance income	12	16	16	21	27	27
BOT construction contracts	86	1	-	100	50	-
Revenue	**462**	**384**	**485**	**1,036**	**1,772**	**2,158**
Cost of services	(195)	(131)	(179)	(455)	(748)	(845)
Gross profit	**267**	**252**	**306**	**581**	**1,024**	**1,313**
GPM	57.7%	65.8%	63.1%	56.1%	57.8%	60.8%
SG&A	(40)	(22)	(22)	(104)	(177)	(216)
SG&A % of revenue	8.7%	5.8%	4.5%	10.0%	10.0%	10.0%
Other revenue	2	0	20	23	-	-
Other operating expenses	(1)	(3)	(20)	-	-	-
Operating profit	**228**	**227**	**283**	**500**	**847**	**1,097**
Operating margin	49.3%	59.2%	58.4%	48.3%	47.8%	50.8%
Interest income	2	0	0	0	0	1
Finance cost	(26)	(37)	(32)	(68)	(185)	(185)
Share of an associate's profits	-	23	23	4	-	-
PBT	**204**	**213**	**274**	**436**	**663**	**913**
Income tax	(38)	(36)	(49)	(48)	(80)	(119)
Effective tax rate	18.9%	16.9%	17.9%	11.0%	12.0%	13.0%
MI	(1)	(0)	(0)	(3)	(4)	(6)
Net profit - reported	**165**	**177**	**224**	**385**	**579**	**789**
NPM - reported	35.6%	46.2%	46.3%	37.2%	32.7%	36.5%
Net profit - recurring	**163**	**180**	**225**	**365**	**579**	**789**
NPM - recurring	35.3%	46.8%	46.4%	35.2%	32.7%	36.5%

Source: RHB estimates

Management Background

Mr. TSUI Cham To, 41, chairman and executive director. He is one of the founders of CTEG, and was appointed as an executive Director in Nov 2010. He is a brother of Mr. Xu Zi Tao and is a cousin of Mr. Xu Ju Wen. Mr. Tsui is responsible for business development, marketing and strategic formulation. Mr. Tsui has about 10 years of experience in WWT and industrial water supply. Mr. Tsui was appointed the chair professor at Faculty of Management of Shenzhen University. He was a member of the Standing Committee of the 6th, 7th and 8th sessions of Zengcheng City Chinese People's Political Consultative Conference. He was also a member of the Standing Committee of the 9th session of the Huizhou City Chinese People's Political Consultative Conference. Mr. Tsui completed his secondary education at Zengcheng Xintang Secondary School in 1981.

Mr. LU Yili, 38, executive Director and managing director. He joined CTEG in Jun 2010 and was appointed as an executive Director in Jan 2011. Mr. Lu oversees CTEG's external financing issues, deals with potential investors and develops business and asset restructuring program. He has experience in corporate investment and business finance, and involved in the listing of Chinese companies in overseas stock exchange. From 1997 to 2009, Mr. Lu served as a member of the management of various Singapore private companies, responsible for venture capital investments and consultancy on initial public offerings in China. Mr. Lu received a bachelor's degree in science majoring in chemistry at the National University of Singapore in 1997.

Mr. XU Ju Wen, 38, executive director and vice president. He joined CTEG in Sep 2003 and has served as an executive Director since Jan 2011. Mr. Xu is a cousin of Mr. Tsui and Mr. Xu Zi Tao. Mr. Xu is responsible for business development, marketing, strategic formulation and inter-departmental coordination. From 2001 to 2005, Mr. Xu was the assistant general manager in Guangzhou Xinzhou and oversaw general operation. Mr. Xu joined Guangzhou Zhugang Pier, a private company in the PRC, in 2005-2011. Mr. Xu obtained a bachelor's degree in accountancy from Open University of China.

Mr. XU Shu Biao, 47, executive director and chief operating officer. He was appointed as an executive Director in Jan 2011. Mr. Xu is mainly responsible for the construction and implementation of the projects. He is also responsible for the start-up and development of operation team as well as staff recruitment. He has experience in engineering, trade and processing industries. He has led the development, operation and management of Guangzhou Xintao and Guangzhou Kaizhou since 2003. Mr. Xu completed his secondary education at Zengcheng Xintang Secondary School in 1981.

Mr. XU Zi Tao, 43, executive director. He joined CTEG in Sep 2003 and was appointed as an executive Director in Jan 2011. He is the brother of Mr. Tsui. Mr. Xu is responsible for safety compliance and public services works, including liaising with local neighborhoods regarding infrastructure development. Since 2003, he has been an assistant general manager at both Guangzhou Xintao and Guangzhou Kaizhou, where he managed the operation and development of these companies. Mr. Xu completed his secondary education at Zengcheng Xintang Secondary School in 1985.

Auditors

KPMG has been CTEG's auditor since the IPO (Sep 2013).

Financial Exhibits

Profit & Loss (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover	384	485	1,036	1,772	2,158
Cost of sales	(131)	(179)	(455)	(748)	(845)
Gross profit	**252**	**306**	**581**	**1,024**	**1,313**
Gen & admin expenses	(22)	(22)	(104)	(177)	(216)
Operating profit	**230**	**284**	**477**	**847**	**1,097**
Operating EBITDA	247	306	552	1,009	1,303
Depreciation of fixed assets	(16)	(21)	(75)	(162)	(206)
Amortisation of intangible assets	(0)	(1)	(1)	(1)	(1)
Operating EBIT	**230**	**284**	**477**	**847**	**1,097**
Net income from investments	23	23	4	-	-
Interest income	0	0	0	0	1
Interest expense	(37)	(32)	(68)	(185)	(185)
Exceptional income - net	(3)	(1)	23	-	-
Pre-tax profit	**213**	**274**	**436**	**663**	**913**
Taxation	(36)	(49)	(48)	(80)	(119)
Minority interests	(0)	(0)	(3)	(4)	(6)
Profit after tax & minorities	**177**	**224**	**385**	**579**	**789**
Reported net profit	**177**	**224**	**385**	**579**	**789**
Recurring net profit	**180**	**225**	**365**	**579**	**789**

Source: Company data, RHB

Cash flow (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Operating profit	**230**	**284**	**477**	**847**	**1,097**
Depreciation & amortisation	**17**	**22**	**75**	**162**	**206**
Change in working capital	**63**	**(130)**	**(320)**	**(325)**	**(176)**
Other operating cash flow	(3)	(16)	23	-	-
Operating cash flow	**307**	**160**	**256**	**684**	**1,127**
Interest received	0	0	0	0	1
Interest paid	(37)	(34)	(68)	(185)	(185)
Tax paid	(29)	(38)	(48)	(80)	(119)
Cash flow from operations	**242**	**88**	**140**	**420**	**824**
Capex	(249)	(131)	(416)	(565)	(10)
Other investing cash flow	(142)	1	(352)	(1,000)	-
Cash flow from investing activities	**(392)**	**(131)**	**(768)**	**(1,565)**	**(10)**
Dividends paid	-	-	(41)	(71)	(107)
Proceeds from issue of shares	-	536	345	-	-
Increase in debt	128	(86)	402	1,000	-
Other financing cash flow	(20)	(28)	-	-	-
Cash flow from financing activities	**108**	**422**	**706**	**929**	**(107)**
Cash at beginning of period	52	10	395	472	256
Total cash generated	**(41)**	**379**	**78**	**(216)**	**707**
Forex effects	(0)	5	-	-	-
Implied cash at end of period	**10**	**395**	**472**	**256**	**964**

Source: Company data, RHB

Financial Exhibits

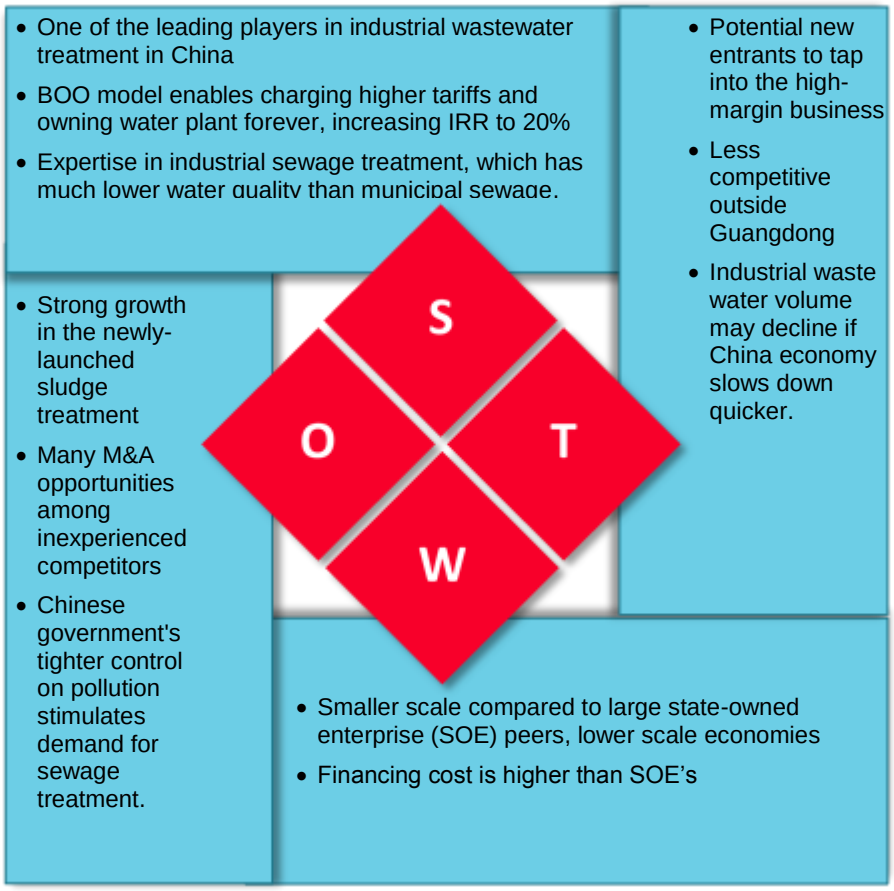
Balance Sheet (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total cash and equivalents	10	446	472	256	964
Inventories	1	1	3	6	6
Accounts receivable	264	281	600	1,026	1,249
Other current assets	21	22	22	22	22
Total current assets	**296**	**750**	**1,097**	**1,310**	**2,241**
Total investments	159	187	-	-	-
Tangible fixed assets	265	512	2,382	3,785	3,589
Intangible assets	9	62	62	61	61
Total other assets	412	381	593	715	742
Total non-current assets	845	1,142	3,036	4,562	4,392
Total assets	**1,141**	**1,892**	**4,134**	**5,871**	**6,633**
Short-term debt	82	52	52	52	52
Accounts payable	101	138	350	576	651
Other current liabilities	13	18	18	18	18
Total current liabilities	**196**	**208**	**420**	**646**	**721**
Total long-term debt	517	501	1,800	2,800	2,800
Other liabilities	36	55	55	55	55
Total non-current liabilities	**554**	**556**	**1,855**	**2,855**	**2,855**
Total liabilities	**750**	**763**	**2,275**	**3,501**	**3,576**
Share capital	0	138	144	144	144
Retained earnings reserve	390	987	1,670	2,178	2,860
Shareholders' equity	**390**	**1,126**	**1,814**	**2,322**	**3,004**
Minority interests	2	3	44	48	53
Other equity	0	(0)	-	(0)	(0)
Total equity	**392**	**1,128**	**1,858**	**2,370**	**3,057**
Total liabilities & equity	**1,141**	**1,892**	**4,134**	**5,871**	**6,633**

Source: Company data, RHB

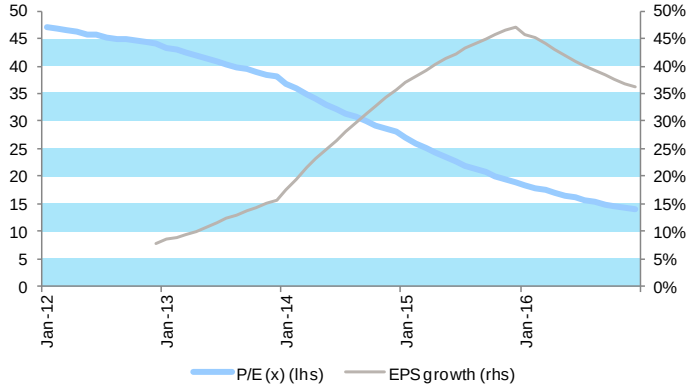
Key Ratios (HKD)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Revenue growth (%)	(17.0)	26.3	113.6	71.2	21.7
Operating profit growth (%)	1.6	23.4	68.0	77.6	29.5
Net profit growth (%)	7.7	26.6	71.7	50.3	36.2
EPS growth (%)	7.7	15.7	35.7	47.1	36.2
Bv per share growth (%)	81.9	188.3	54.5	28.0	29.3
Operating margin (%)	60.0	58.6	46.1	47.8	50.8
Net profit margin (%)	46.2	46.3	37.2	32.7	36.5
Return on average assets (%)	17.5	14.8	12.8	11.6	12.6
Return on average equity (%)	58.6	29.6	26.2	28.0	29.6
Net debt to equity (%)	150.3	9.4	74.2	109.5	61.8
DPS	0.00	0.03	0.05	0.07	0.10
Recurrent cash flow per share	0.24	0.08	0.10	0.29	0.57

Source: Company data, RHB

SWOT Analysis

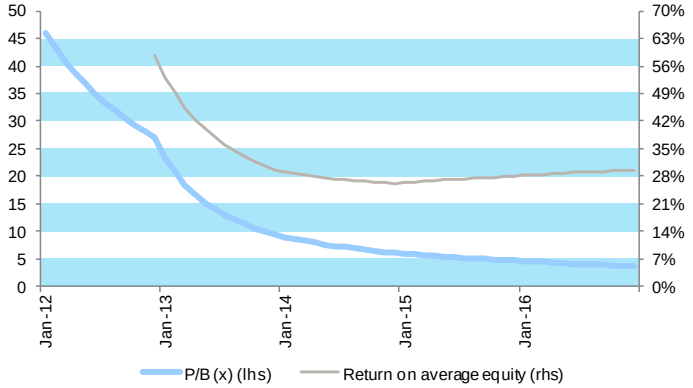


P/E (x) vs EPS growth



Source: Company data, RHB

P/BV (x) vs ROAE

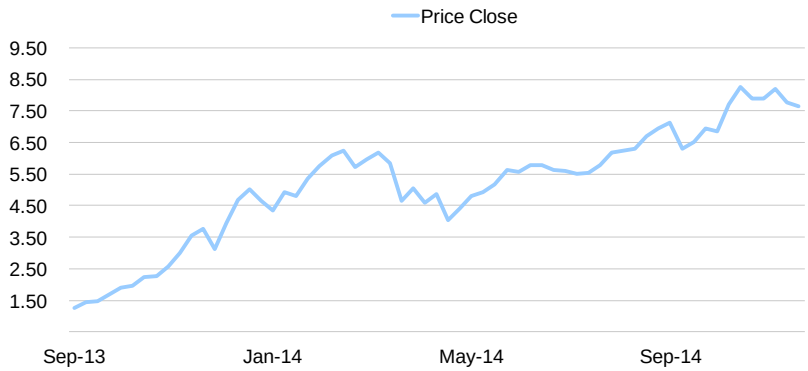


Source: Company data, RHB

Company Profile

CT Environmental Group (CTEG) is a provider of wastewater treatment and water supply services in China, focusing on industrial segment. Founded in 1999, CTEG established its first industrial waste water treatment plant in Guangzhou in 2003. CTEG uses mainly BOO model for industrial waste water and BOT for its municipal wastewater treatment. Its first sludge treatment plant started operation in 2013, and soon becomes the largest sludge treatment operator in Guangdong.

Recommendation Chart



Source: RHB, Bloomberg

Date	Recommenda	Target Price	Price
2014-04-18	Not Rated	na	5.04

Source : RHB, Bloomberg

Beijing Enterprises Water (371 HK)

Neutral

Industrial - Environment Control

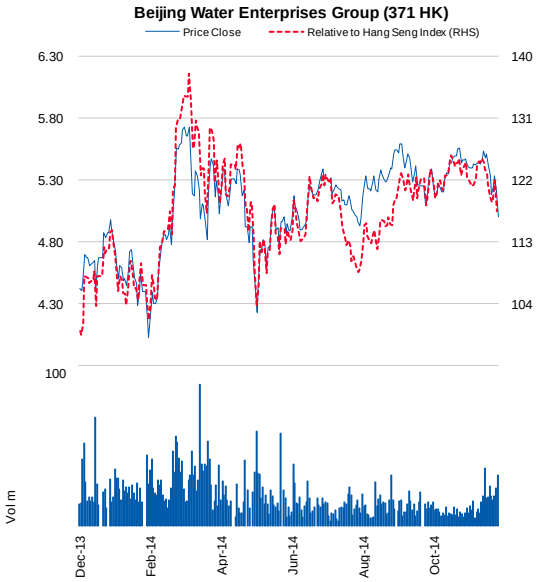
Target Price: HKD5.40

Market Cap: USD5,617m

Price: HKD5.00

Positives Priced In For a Leading Player

Macro ◆◆◆
Risks ◆◆
Growth ◆◆
Value ◆



Source: Bloomberg

Avg Turnover (HKD/USD)	67.8m/8.75m
Cons. Upside (%)	24.4
Upside (%)	8.0
52-wk Price low/high (HKD)	4.03 - 5.73
Free float (%)	50
Share outstanding (m)	8,707
Shareholders (%)	
Beijing Enterprises Holdings	43.5
Wang Taoguang	6.5

Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	2.7	(8.4)	(9.3)	1.0	14.7
Relative	0.4	(9.0)	(3.7)	(2.1)	14.2

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We initiate coverage on Beijing Enterprises Water (BEW) with a NEUTRAL call and a DCF-derived HKD5.40 TP (8% upside.) Our TP implies a FY15F P/E of 24x, above the HK-listed waste water treatment sector average of 17x P/E. We think BEW deserves to trade at a premium as it is the second-largest player in the waste water treatment sector and has a strong parent. We do not see much share price upside though as earnings growth may slow sharply from FY15.

- **High base for build-operate-transfer (BOT) capacity in 2015.** BEW made a number of sizeable acquisitions in 2013, with total addition of water project capacity of 6.2m tonnes, much higher than the 890k tonnes in 2012. Given its mega acquisitions in 2013 BEW's total capacity increased by 59% YoY in 2013. For 2014, management raised the target in Aug 2014 to 3.5m tonnes from 2.0m tonnes. It expects total capacity growth to decelerate to 21% in 2014.
- **Downside risk to build-transfer (BT) projects.** BEW targeted to spend CNY4.0bn capex on BT renovation projects, implying CNY5.0bn (+71% YoY) in BT revenue for 2014, according to our estimate. However, BT revenue slid 69% YoY to CNY418m in 1H14. Management explained that the Beijing government has requested to switch two BT projects to BOT mode. However, even if we add back the amount, BT revenue would still decline by 13%. We expect more such switches in future.
- **Financing caps BOT construction.** BEW claimed to have 16.7m tonnes of water project daily capacity by end-2013, but 43% of this capacity (7.2m tonnes) was non-operating. Despite a huge backlog, it requires cash to execute the construction. Management targeted HKD8.0bn capex for 2014. We expect only HKD6.0bn, and HKD7.0bn/HKD8.0bn for 2015/2016F. BEW's net D/E could surge to 132%/145% at end-2015/2016F, largely in line with management's guidance for a gearing limit of 130-150%.
- **Initiate coverage with a NEUTRAL rating and HKD5.40 TP**. Our TP of HKD5.40 is based on DCF, implying a FY15F P/E of 24x, above Hong Kong-listed waste water treatment sector average P/E of 17x. We believe BEW deserves to trade at a premium to the sector given that it is the second-largest player in the waste water treatment industry and has a strong parent. However, we do not see much share price upside as its earnings growth is likely to slow sharply in FY15-16F.
- **Risks.** Worsening of local governments' balance sheets; NDRC missing its 12FYP target.

Forecasts and Valuations	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover (HKDm)	3,727	6,406	9,223	11,137	12,952
Reported net profit (HKDm)	750	1,084	1,585	1,894	2,273
Recurring net profit (HKDm)	823	1,215	1,681	1,958	2,316
Recurring net profit growth (%)	57.8	47.6	38.4	16.4	18.3
Recurring EPS (HKD)	0.12	0.16	0.19	0.23	0.27
DPS (HKD)	0.04	0.05	0.07	0.09	0.10
Recurring P/E (x)	42.0	31.9	25.7	22.2	18.8
P/B (x)	4.08	3.17	3.02	2.79	2.55
P/CF (x)	na	na	na	na	na
Dividend Yield (%)	0.8	1.0	1.4	1.7	2.1
EV/EBITDA (x)	34.9	24.6	20.8	18.8	16.7
Return on average equity (%)	9.1	10.0	11.5	12.6	13.9
Net debt to equity (%)	83.1	86.2	108.6	131.7	145.2
Our vs consensus EPS (adjusted) (%)			2.4	(7.7)	(12.3)

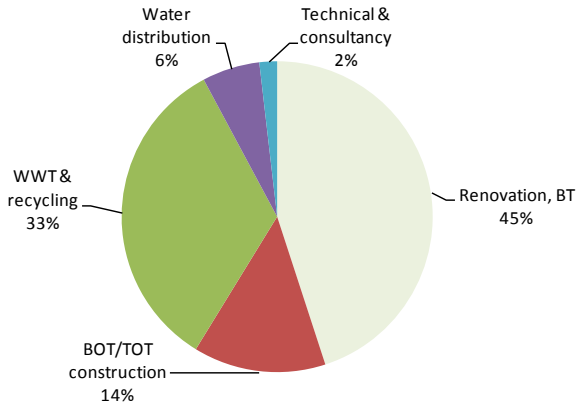
Source: Company data, RHB

Investment Thesis

Initiate coverage with NEUTRAL and HKD5.40 TP

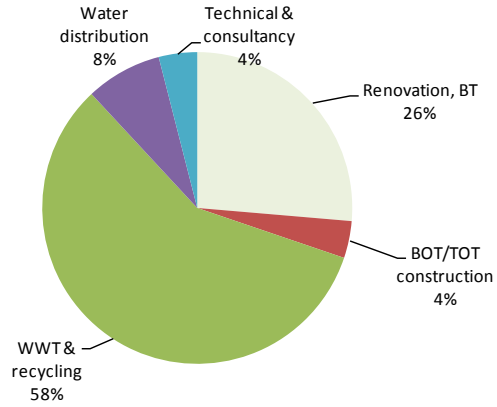
We initiate coverage on BEW with a NEUTRAL rating and a DCF-based TP of HKD5.40. Our TP implies a 24x FY15F P/E, higher that HK-listed waste water treatment sector average P/E of 17x. We believe BEW deserves to trade at a premium to the sector given that it is the second-largest player in the waste water treatment industry and has a strong parent. However, we do not see much share price upside as its earnings growth is likely to slow sharply in FY15-16. We expect BEW to deliver a 16% recurring EPSG in FY15, below the sector's 27%. Current valuation has already priced in all the positives for 2H14. Besides, we expect its high growth to decelerate in FY15-16, as its mega-sized mergers and acquisitions (M&As) made in 2013 have been fully reflected in 2014 and will create a high base. Furthermore, BT renovation will likely have a high downside risk, while BOT construction will be capped by the already high gearing. We estimate that recurring earnings growth may decelerate to 16%/18% in 2015/2016, from 38% in 2014. Our recurring earnings growth forecasts for 2015/2016 are 8%/12% below consensus, because of lower gross margins assumptions.

Figure 1: Revenue breakdown in 2013



Source: Company, RHB

Figure 2: Gross profit breakdown in 2013



Source: Company, RHB

Figure 3: BEW's waste water treatment plant coverage

Source: Company

Waste water treatment sector outlook promising

We favour the sewage treatment industry as the Chinese Government is determined to tackle pollution and has committed to a budget of CNY430bn on municipal sewage in the 12th Five-Year Plan (12FYP), 30%/14% above its budget/actual spending in 11FYP. Greenfields BOT/transfer-operate-transfer (TOT) projects bidding will likely increase. Favourable polices like tax holiday (3-year tax exemption and 3-year half-tax rate for new waste water treatment plants), value-added tax (VAT) exemption and available financing will continue. The soon-to- be-release "Water Pollution Prevention and Treatment Plan" by the National Development and Reform Commission (NDRC) will allocate CNY2.0trn in 2013-2017 (vs CNY1.4trn in 2011-2015) for water supply and sewage treatment. The Government's commitment to fighting against water pollution will extend to at least 2017.

The Government expects municipal sewage treatment rate to reach 100% for 36 key cities and 85% for overall cities in 2015. To further improve water quality, the NDRC is likely to switch focus from treatment rate to treatment quality in 13FYP. Only 15% of municipal waste water treatment capacity was National Standard 1A in 2010, according to the Ministry of Housing and Urban-Rural Development (MOHURD). We expect more municipal waste water treatment to be upgraded to National Standard 1A, or even Beijing Standard 1A/1B, in 13FYP. Hence, TOT projects will be more available. In addition, rural areas will continue to be the key development focus, as the NDRC will continue to ramp up the still-low treatment rates in 2015 for towns (30%) relative to cities (85%).

Fragmented municipal waste water treatment market

While the top five waste water treatment companies in China have been increasing their market share to 21% in 2013 from 18% in 2010, the municipal waste water treatment market is still fragmented, with many projects still in the hands of local governments and smaller operators. Therefore, top players could achieve growth via: i) M&A of smaller players, and ii) bidding for greenfield projects. BEW is the second-largest municipal waste water treatment player in China, with a market share of 6% based on waste water treatment capacity (including non-operating). BJ Capital (600008 CH, NR) is the market leader with a 9% market share. The company added 1m tonnes capacity each in 2011-2013, and added 600,000 tonnes in 1H of 2014. If BJ Capital continues to add 1m tonnes each in 2014-2015, BEW will surpass BJ Capital in 2015 to become the market leader in terms of operating and non-operating projects.

High base for BOT capacity in 2015

BEW made a number of sizeable acquisitions in 2013, with total addition of water project capacity of 6.2m tonnes – including capacity under construction and planning stages – much higher than 890k tonnes in 2012. The mega acquisitions in 2013 included 1.3m tonnes capacity water projects from Beijing Enterprises Holdings (392 HK, NR). BEW's total capacity increased 59% YoY by end-2013. For 2014, management raised the new capacity target in Aug 2014 to 3.5m tonnes from 2m tonnes. Total capacity growth in 2014 will likely decelerate to 21% from 59% in 2013 due to: i) new capacity target for 2014 is still below the addition in 2013, and ii) a high base.

Figure 4: Daily capacity

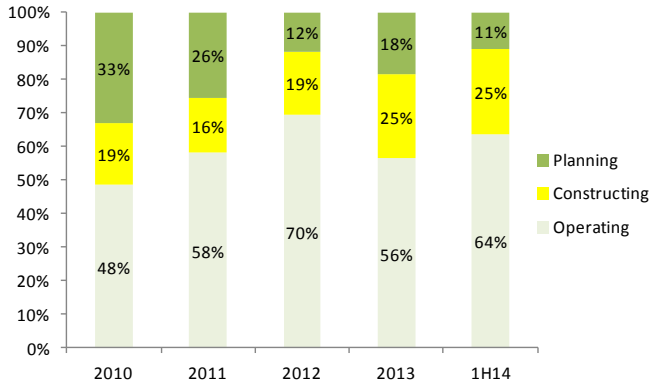
	2011	2012	2013	2014F	2015F	2016F
Daily capacity						
WWT	5,778	6,591	10,182	12,582	15,482	18,882
Reclaimed water	387	500	601	701	801	901
Water distribution	2,514	3,354	5,875	6,875	7,875	8,875
Seawater desalination	50	50	50	50	50	50
Total ('000 tonnes)	8,729	10,494	16,708	20,208	24,208	28,708
YoY %						
WWT	32.1%	14.1%	54.5%	23.6%	23.0%	22.0%
Reclaimed water	82.5%	29.1%	20.2%	16.7%	14.3%	12.5%
Water distribution	97.2%	33.4%	75.2%	17.0%	14.5%	12.7%
Seawater desalination	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Overall	47.7%	20.2%	59.2%	20.9%	19.8%	18.6%
% breakdown						
WWT	66.2%	62.8%	60.9%	62.3%	64.0%	65.8%
Reclaimed water	4.4%	4.8%	3.6%	3.5%	3.3%	3.1%
Water distribution	28.8%	32.0%	35.2%	34.0%	32.5%	30.9%
Seawater desalination	0.6%	0.5%	0.3%	0.2%	0.2%	0.2%
Overall	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Change						
WWT	1,405	813	3,592	2,400	2,900	3,400
Reclaimed water	175	113	101	100	100	100
Water distribution	1,239	840	2,521	1,000	1,000	1,000
Seawater desalination	-	-	-	-	-	-
Total ('000 tonnes)	2,819	1,766	6,214	3,500	4,000	4,500

Note: Daily capacity includes capacity under construction or planning stages
Source: Company, RHB

Financing caps BOT construction

BEW had 16.1m tonnes water project daily capacity (including waste water treatment, water supply, recycling) at end-1H14, but 36% of this capacity (6.5mn tonnes) was non-operating, of which 25% was under construction while 11% under planning. Therefore, despite its strong project pipeline and huge BOT/TOT backlog, BEW still requires cash to execute the construction. BOT construction revenue and operation and maintenance (O&M) revenue growth depends on the availability of financing. BEW has HDK19bn total debt and HDK14bn net debt, with a net debt-to-equity of 86% by end-2013.

Figure 5: BEW's total water capacity



Source: Company

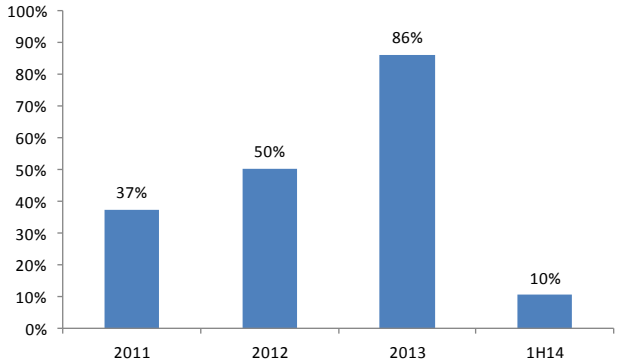
Since financing is the bottleneck, more BOT contract wins will not necessarily bring immediate earnings. For BOT construction revenue, BEW guided for HKD1bn in 2H14, or HKD2.4bn in 2014, implying the completion of 1.1m tonnes daily capacity in 2014, according to our estimates.

Management has targeted HKD8bn capex for 2014, including HKD4bn each for BT and BOT/TOT. However, we expect BEW to spend only HKD6bn (missing mainly on BT project), and then HKD7bn/HKD8bn for 2015/2016. Based our capex forecast, its net debt-to-equity will likely surge to 132%/145% in 2015/2016, from 109% in 2014. Our net debt-to-equity forecast is in line with management's guidance for a gearing limit of 130-150%. All in, management expects no urgency to issue shares.

We assume future M&As will be settled in cash. However, we believe BEW could achieve higher growth by issuing shares, which would reduce gearing and expand capacity at the same time. Based on historical data, BEW used shares to settle M&As only for mega deals, or preferred to issue shares to raise funds first and then settled M&As in cash.

In the past, BEW had been heavily reliant on M&As to achieve high capacity growth. Half of its total new projects secured in 2012 were via M&As, and the ratio increased to 86% in 2013. Although M&As enable BEW to expand quickly, it requires immediate consideration payments. Cash consideration will escalate its gearing ratio, while issuing shares may dilute earnings. Given its already high gearing, BEW will rely more on bidding for new greenfield projects, which would enable BEW to achieve its new capacity guidance in order to achieve its target of municipal waste water treatment market share (including projects under planning) to 10-12% in 2018 from 6% in 2013. At the same time, winning a bid will not incur capex as long as BEW does not execute it. In 1H14, M&As only accounted for 10% of new projects secured, down from 50%/86% in 2012/2013. Looking ahead, we expect M&As to continue to account for less than half of total new projects secured in 2014-2016.

Figure 6: Percentage of BEW's new water project secured via M&As



Source: Company

Downside risk to BT

BEW targeted to spend CNY4bn capex on BT renovation projects, implying CNY5bn (+71% YoY) in BT revenue for 2014, according to our estimate. However, BT revenue declined by 69% YoY to only CNY418m in 1H14. Management explained that its two BT projects in Beijing with CNY740m revenue had been switched to BOT, as requested by the Beijing government. Nevertheless, even if we add back the amount, BT revenue still dropped by 13% YoY in 1H14.

Management guided for 35-40% growth in total construction revenue (BT + BOT) for 2014 (vs +3% YoY in 1H14), implying HKD5.1bn-5.3bn revenue for 2014. BEW guided for BOT revenue to reach HKD2.4bn for 2014, implying BT revenue of HKD2.7bn-2.9bn (or down 6% YoY to flat). The guidance looks aggressive, given the 69% YoY decline in 1H14. We expect BT revenue to drop 15% in 2014.

We expect the switch from BT to BOT to increase in the future. BEW explained that the Beijing government suggested the switch in order to try different investment modes. However, we believe the higher gearing of local governments is one of the underlying reasons. In fact, the Beijing government's debt level is not low – its debt/income ratio reached 179% in 2013, above the national average of 149%. Despite their high gearing ratios, the NDRC allocated aggressive new waste water treatment capacity targets for local governments. As a result, local governments have the incentive to replace BT with BOT, as BT requires direct payments from local governments which could shore up liability. In contrast, BOT investment will be repaid by future tariffs collected from users, with no new debt incurred by local governments.

BEW reiterated that it will allow such a switch only in Beijing. However, we expect BEW to accept the switch outside Beijing to avoid any project delays. The switch from BT to BOT will become a trend in China going forward, amid higher water pollution prevention budget but high gearing among local governments.

For BEW, the switch can bring short-term gain. BOT construction generates higher gross margin (23.9% in 2014) than BT (19.0% in 2014). Coincidently, management revised up the accounting gross margin for BOT construction revenue in 2014 to 23.9% from only 11%, making BEW better off for the switch rather than worse off. In the longer term, the switch could create higher financial burden. BOT repayment lasts 25-30 years, while BT repayment is 3-4 years after completion. Therefore, BEW will have to raise more debt, thus incurring higher financial expenses.

Gross margin stable after changing accounting assumption

BEW's gross margin should be largely stable in 2015, due to: i) an upward revision in accounting assumptions on gross margin for BOT construction revenue, ii) more revenue contribution from O&M which delivers high margin, and iii) a gradual improvement in water supply gross margin given less contribution from lower-margin overseas projects.

BT renovation gross margin is at risk, falling to 19% in 1H14 from 23% in 2013. Management explained that the higher margin achieved earlier was attributable to the Huiyang project, which booked a large amount of "basic services income" (eg design fee) into cost of goods sold (COGS). The Huiyang project has been completed, and other projects did not have such a large amount of basic service income. Management guided that the normal gross margin for renovation BT is 15%, and hence the 19% gross margin in 1H14 was relatively high. We expect BEW's BT gross margin to drop to 15% in 2015.

BEW doubled its accounting gross margin for BOT construction revenue in 2014. Accounting standard "HK(IFRIC) 12" requires booking of BOT construction revenue and profit. BOT investors will apply a mark-up on its construction costs to calculate the revenue, and the mark-up should benchmark project margin for construction projects. Management believes its previous BOT construction gross margin of 11% was too low (note that Sound Global's (967 HK, BUY, TP: HKD12.00) used 28.2% for 2013) and decided to adopt its HK-listed peers' average of 23.9% for projects with construction starting from 2014, while projects with construction started before 2014 will continue to use the 11.0% gross margin. The gross margin was 20.0% in 1H14. To offset this accounting adjustment, BOT O&M gross margin will be cut by 0.1-0.2ppt during the concession years of 25-30 years. Thus, this negative impact will be likely negligible.

Higher BOT construction gross margin will have no cash impact, as the tariff to be collected in the next 25-30 years will be the same. In contrast, lower BT gross margin could hurt BEW's profitability and reduce cash to be collected from local governments after completion. BT gross margin level depends on the results of bargaining with local governments.

Key Risks

NDRC missing 12FYP target. The NDRC had set aggressive targets for waste treatment capacity investment and utilisation in 12FYP. Our market size forecasts are largely based on the Government's target. If the NDRC misses its target, fewer greenfield projects will result in increasing competition among industry players, dragging down returns. However, we believe the risk is fairly low due to increasing public concern on pollutions, while fighting against pollution has become one of the Government's top priorities.

Failure to get low-cost funding. Waste water treatment plant projects require heavy capex investment, and financing is the critical success factor in the waste water treatment industry. If fund-raising becomes difficult, project execution will be slowed or halted. Similarly, if the interest rate is trending up, project return will be reduced, resulting in slower capacity expansion. The recent rate cut (Nov 2014) by the People's Bank of China will help reduce this risk. Moreover, we believe BEW's state-owned enterprise (SOE) background should enable the company to have access to lower-cost funding.

Growing competition in municipal waste water treatment. We see growing competition in bidding for both greenfield municipal waste water treatment BOT projects and M&As. Leading players in the waste water treatment industry set aggressive targets and are ready to seize market share as they capitalise on the Chinese Government's push for waste water treatment plants construction to improve water quality in the country. Leading players which are SOEs (eg BEW) usually enjoy larger scale and better access to low-cost debt, and hence have competitive advantages over small players.

Project delays. Greenfield BOT/TOT projects require preparation and government approvals. If the process takes longer than expected, construction could be delayed, resulting in lower construction revenue and O&M revenue.

Valuation

Our TP of HKD5.40 is based on DCF. We use a 5.1% WACC, based on a risk-free rate of 3.0% and an equity-risk premium of 5.0%, with a 1% terminal growth which is for BEW's renovation BT business and constancy.

The fair value derived from DCF implies a FY15F P/E of 24x, above HK-listed waste water treatment sector average P/E of 17x with earnings per share growth (EPSG) of 27% in FY15. We estimate that BEW will deliver 16% EPSG for FY15. We believe its current valuation premium to its peers has already factored in its leading market position among HK-listed players and its strong earnings growth for 2H14. Further upside is limited, in our view.

Figure 7: DCF assumptions

Present value of FCF	48,993
Present value of terminal value	24,019
EV (HKDm)	73,012
Beta	0.85
Risk free	3.0%
Equity risk premium	5.0%
Cost of equity	7.2%
Cost of debt (after tax)	3.9%
WACC	5.1%
Terminal growth	1.0%
Debt/Capital	63.0%

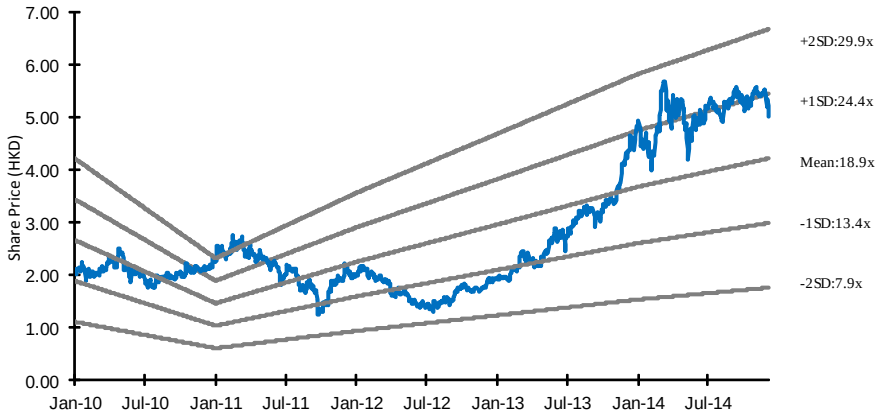
Source: Bloomberg, RHB

Figure 8: DCF valuation

	HKDm	HKD/share	GNAV %	Valuation Methodology
Renovation, BT	4,117	0.47	5.6	DCF (5.1% WACC, 1% Terminal Growth)
BOT/TOT	55,423	6.38	75.9	DCF (5.1% WACC, 1% Terminal Growth)
Technical & consultancy	13,472	1.55	18.5	DCF (5.1% WACC, 1% Terminal Growth)
GNAV at year end	**73,012**	**8.40**	**100.0**	
Debt, MI & others	(26,296)	(3.03)		
NAV at year end	**46,716**	**5.38**		

Source: RHB

Figure 9: BEW's forward P/E band



Source: Bloomberg, RHB

Figure 10: Valuation table I

Company	Ticker	Price	Mkt cap (USDm)	3-mth avg t/o (USDm)	P/E Hist (x)	P/E FY1 (x)	P/E FY2 (x)	EPS FY1 YoY%	EPS FY2 YoY%	3-Yr EPS Cagr (%)	PEG (x)	Div yld Hist (%)	Div yld FY1 (%)	P/B FY1 (x)
HSI		**24003**			**10.4**	**11.1**	**10.5**	**(6.9)**	**6.6**	**3.0**	**3.7**	**3.8**	**3.6**	**1.2**
CSI300		**3125**			**13.5**	**12.7**	**11.0**	**6.9**	**15.0**	**12.1**	**1.0**	**1.9**	**2.3**	**1.8**
HK-listed WWT services														
Sound Global	967 HK	7.73	1,463	4.3	18.3	15.3	12.2	20.1	24.6	25.9	0.6	NA	0.0	2.1
CTEG	1363 HK	7.64	1,421	4.8	37.9	29.6	19.0	28.1	55.5	39.4	0.7	0.4	0.6	6.1
BEW	371 HK	5.00	5,617	9.2	31.9	25.7	22.2	24.2	15.8	19.4	1.3	1.1	1.4	3.0
Kangda	6136 HK	3.20	854	5.6	NA	17.9	13.2	NA	35.2	N/A	NA	NA	0.5	2.0
Tianjin Capital	1065 HK	5.20	1,856	3.3	20.6	19.7	19.2	5.0	2.4	5.2	3.8	1.9	1.6	1.4
Average					**27.2**	**21.6**	**17.2**	**19.4**	**26.7**	**22.5**	**1.6**	**1.1**	**0.8**	**2.9**
Singapore-listed WWT services														
HanKore	HANKORE SI	1.02	397	1.5	NA	27.8	23.6	NA	17.6	N/A	NA	NA	NA	1.5
SIIC	SIIC SP	0.15	1,058	4.7	22.6	22.6	22.6	0.0	0.0	N/A	NA	NA	NA	2.0
Average					**22.6**	**25.2**	**23.1**	**0.0**	**8.8**	**NA**	**NA**	**NA**	**NA**	**1.7**
WTE with WWT services														
CEI	257 HK	11.36	6,571	11.6	34.8	30.4	22.2	14.6	36.7	27.6	1.1	0.8	0.9	3.5
China-listed WWT services														
Chongqing Water	601158 CH	7.78	6,071	25.2	19.9	19.5	18.7	2.1	4.5	5.4	3.6	3.5	3.5	2.7
Shanghai Chent	600649 CH	7.23	3,512	18.5	15.7	13.9	11.9	13.0	17.3	14.5	1.0	2.1	NA	NA
Beijing Origin	300070 CH	33.18	5,774	50.9	41.9	28.9	20.7	45.0	39.7	37.6	0.8	0.2	0.2	5.8
Beijing Capital	600008 CH	9.28	3,319	36.9	34.0	34.1	27.9	(0.5)	22.4	14.0	2.4	1.6	1.6	2.4
Chengdu Xingro	000598 CH	6.25	3,034	91.7	24.0	21.6	18.5	11.5	16.2	11.5	1.9	0.4	0.6	2.5
Zhongshan Public	000685 CH	22.40	2,836	43.8	28.7	33.9	29.5	(15.4)	15.2	15.1	2.2	0.7	NA	2.4
Tianjin Cap	600874 CH	9.21	1,856	26.5	46.1	49.3	44.5	(6.5)	10.7	7.0	7.0	0.9	0.8	3.2
Beijing Water	300055 CH	43.33	1,726	16.7	71.0	56.5	41.9	25.7	34.8	29.6	1.9	0.3	0.5	5.2
Average					**35.2**	**32.2**	**26.7**	**9.4**	**20.1**	**16.8**	**2.6**	**1.2**	**1.2**	**3.5**
Int'l-listed WWT operators														
American Water	AWK US	52.14	9,349	34.2	25.1	21.6	20.0	15.9	8.1	10.1	2.1	2.3	2.3	2.0
Veolia	VIE FP	14.71	10,168	24.1	NA	33.1	20.3	NA	63.1	N/A	NA	4.8	4.8	1.0
Suez	SEV FP	14.88	9,882	15.5	21.6	20.7	18.5	4.3	11.5	9.6	2.2	4.4	4.4	1.5
Average					**23.3**	**25.1**	**19.6**	**10.1**	**27.6**	**9.8**	**2.1**	**3.8**	**3.8**	**1.5**
China WTE operators														
Sound Environ	000826 CH	25.05	3,436	52.1	35.8	26.2	19.9	36.4	31.6	33.0	0.8	0.3	0.4	4.0
Hangzhou Boil	002534 CH	24.08	1,568	6.4	141.6	NA	NA	NA	NA	N/A	NA	0.6	NA	NA
Zhejiang Fuchu	002479 CH	9.75	1,165	14.3	51.3	40.6	32.5	26.3	25.0	13.8	2.9	NA	NA	2.5
Focused Photon	300203 CH	19.46	1,408	25.4	54.1	40.5	31.6	33.6	28.1	28.5	1.4	0.2	0.5	4.2
Wuxi Huaguang	600475 CH	15.54	647	15.7	51.8	34.5	27.8	50.0	24.4	39.8	0.9	0.6	NA	NA
Dongjian Environ	002672 CH	32.61	1,704	13.4	53.2	41.8	26.7	27.2	56.5	39.9	1.0	0.6	0.6	4.5
Average					**64.6**	**36.7**	**27.7**	**34.7**	**33.1**	**31.0**	**1.4**	**0.5**	**0.5**	**3.8**

Source: Bloomberg, RHB

Figure 11: Valuation table II

Company	Ticker	Price Chg 1 mth	Price Chg 3 mth	Beta	Rev Hist (USDm)	Rev FY1 (USDm)	NP Hist (USDm)	NP FY1 (USDm)	Gross margin Hist (%)	Net margin Hist (%)	Net margin FY1 (%)	ROE Hist (%)	ROE FY1 (%)	ROE FY2 (%)
HSI														
CSI300														
HK-listed WWT services														
Sound Global	967 HK	(12.2)	(11.3)	0.9	510	629	69	92	30.5	13.8	14.9	14.8	15.5	14.4
CTEG	1363 HK	(0.7)	13.9	N/A	63	134	29	47	63.1	46.4	35.2	29.6	26.2	28.0
BEW	371 HK	(8.4)	(8.8)	0.7	827	1,190	140	194	39.1	19.0	18.2	10.0	11.5	12.6
Kangda	6136 HK	(12.3)	(7.2)	N/A	218	278	38	47	38.3	17.3	17.0	18.9	14.3	13.3
Tianjin Capital	1065 HK	(5.5)	(12.9)	1.2	260	268	46	49	38.1	17.6	18.1	7.9	8.0	7.0
Average		**(7.8)**	**(5.3)**	**0.9**	**375**	**500**	**64**	**86**	**41.8**	**22.8**	**20.7**	**16.2**	**15.1**	**15.1**
Singapore-listed WWT services														
HanKore	HANKORE SI	18.0	16.7	1.2	85	289	(19)	65	40.1	(23.8)	24.1	(8.4)	9.4	6.1
SIIC	SIIC SP	(12.0)	(12.6)	0.9	197	188	24	45	29.8	12.3	23.8	7.4	9.1	10.5
Average		**3.0**	**2.0**	**1.1**	**141**	**238**	**3**	**55**	**34.9**	**(5.7)**	**24.0**	**(0.5)**	**9.3**	**8.3**
WTE with WWT services														
CEI	257 HK	6.8	4.6	0.8	686	887	171	216	44.7	24.9	24.4	12.2	12.0	14.8
China-listed WWT services														
Chongqing Water	601158 CH	27.3	37.2	1.2	645	720	305	307	49.9	47.3	42.6	13.5	13.6	13.9
Shanghai Chent	600649 CH	0.0	3.6	1.2	547	780	224	255	37.0	40.9	32.7	11.3	10.0	N/A
Beijing Origin	300070 CH	13.1	3.8	1.0	496	741	137	196	35.5	27.5	26.5	19.1	20.6	22.3
Beijing Capital	600008 CH	22.3	28.7	1.1	667	742	98	99	37.8	14.7	13.4	10.5	7.7	8.3
Chengdu Xingro	000598 CH	7.8	9.5	1.1	388	430	121	141	47.4	31.2	32.9	11.3	11.4	12.0
Zhongshan Public	000685 CH	59.5	74.3	1.1	138	184	99	108	32.3	71.5	58.7	10.6	9.7	7.6
Tianjin Cap	600874 CH	6.5	7.3	1.1	260	271	46	43	38.1	17.6	16.0	7.9	N/A	6.7
Beijing Water	300055 CH	14.1	28.6	0.9	124	178	23	30	25.7	18.5	16.8	6.8	9.1	11.6
Average		**18.8**	**24.1**	**1.1**	**408**	**506**	**132**	**147**	**38.0**	**33.7**	**29.9**	**11.4**	**11.7**	**11.8**
Int'l-listed WWT operators														
American Water	AWK US	0.3	3.2	0.5	2,902	3,081	369	431	N/A	12.7	14.0	8.2	8.8	9.7
Veolia	VIE FP	4.7	2.0	1.1	18,167	18,737	(110)	213	15.0	(0.6)	1.1	0.1	3.0	5.1
Suez	SEV FP	8.0	2.8	1.0	11,922	11,741	287	319	N/A	2.4	2.7	10.4	7.0	8.3
Average		**4.3**	**2.7**	**0.9**	**10,997**	**11,186**	**182**	**321**	**15.0**	**4.8**	**6.0**	**6.2**	**6.3**	**7.7**
China WTE operators														
Sound Environ	000826 CH	2.7	(1.1)	1.1	432	625	95	128	34.5	22.0	20.4	16.1	15.4	17.3
Hangzhou Boil	002534 CH	26.7	73.2	1.3	961	N/A	11	N/A	15.2	1.2	N/A	0.5	N/A	N/A
Zhejiang Fuchu	002479 CH	(4.4)	10.7	1.0	514	574	23	30	11.4	4.5	5.2	7.3	5.2	7.4
Focused Photon	300203 CH	(13.2)	13.4	0.7	151	194	26	33	48.6	17.1	17.3	8.7	10.0	11.8
Wuxi Huaguang	600475 CH	4.8	16.8	1.1	538	N/A	12	N/A	17.9	2.3	N/A	6.2	N/A	N/A
Dongjian Environ	002672 CH	0.9	(2.7)	1.2	256	338	34	45	29.8	13.2	13.2	10.0	10.6	14.6
Average		**2.9**	**18.4**	**1.1**	**475**	**433**	**34**	**59**	**26.2**	**10.1**	**14.0**	**8.1**	**10.3**	**12.8**

Source: Bloomberg, RHB

Our forecasts vs consensus for 2014-2016

Our revenue estimates are 2%/0% above consensus for FY14/FY15, and 2% below consensus for FY16. Thus, our revenue forecasts are largely in line with street estimates. Our recurring EPS forecasts are above consensus by 2% for FY14, but 8%/12% below consensus for FY15/FY16. For FY14, we factor in slightly higher revenue on BT revenue. For FY15-16, we factor in a minimal gross margin increase while consensus factored in nearly 5ppts gross margin expansion from 2014 to 2016. We believe the back-to-normal BT gross margin should keep overall gross margin expansion minimal.

Figure 12: 2H14 earnings forecasts (HKDm)

	1H13 Actual	2H13 Actual	1H14 Actual	2H14 RHB	2H14 YoY%
Renovation, BT	1,337	1,545	418	2,032	31.6
Construction of water plants, BOT/TOT	401	481	1,365	985	104.7
WWT & recycling	850	1,291	1,571	1,845	42.9
Water distribution	118	266	360	485	82.6
Technical & consultancy	57	60	102	61	0.6
Revenue	**2,764**	**3,643**	**3,816**	**5,408**	48.4
Cost of services	(1,659)	(2,242)	(2,220)	(3,465)	54.6
Gross profit	**1,104**	**1,401**	**1,596**	**1,942**	38.6
GPM	40.0%	38.5%	41.8%	35.9%	
SG&A	(244)	(425)	(422)	(593)	39.5
SG&A % of revenue	8.8%	11.7%	11.1%	11.0%	
Other revenue	77	123	138	82	-33.2
Other operating expenses	(49)	(138)	(8)	8	-105.6
Equity-settled share option expense	(26)	(80)	(58)	(62)	-21.9
Operating profit	**863**	**881**	**1,247**	**1,377**	56.3
Operating margin	31.2%	24.2%	32.7%	25.5%	
Interest income	172	262	176	268	2.3
Finance cost	(342)	(446)	(519)	(547)	22.8
Share of JVs' profits	(3)	87	63	87	0.0
Share of associates' profits	(2)	25	21	29	14.6
PBT	**687**	**810**	**988**	**1,214**	49.9
Income tax	(157)	(195)	(191)	(250)	28.1
Effective tax rate	22.8%	24.1%	19.3%	20.6%	
MI	(16)	(45)	(83)	(93)	106.8
Net profit - reported	**514**	**570**	**714**	**871**	52.9
NPM - reported	18.6%	15.6%	18.7%	16.1%	
Net profit - recurring	**572**	**643**	**767**	**915**	42.3
NPM - recurring	20.7%	17.6%	20.1%	16.9%	

Source: Company data, RHB

Figure 13: Detailed P&L statement (HKDm)

	FY11	FY12	FY13	FY14F	FY15F	FY16F
Renovation, BT	752	1,007	2,882	2,450	2,572	2,701
Construction of water plants, BOT/TOT	613	968	882	2,350	3,149	3,618
WWT & recycling	995	1,425	2,141	3,416	4,255	5,319
Water distribution	83	106	384	845	982	1,117
Technical & consultancy	212	222	118	162	179	196
Revenue	**2,654**	**3,727**	**6,406**	**9,223**	**11,137**	**12,952**
YoY change	-58.2%	-58.2%	-58.2%	-58.2%	-58.2%	-58.2%
Cost of services	(1,746)	(2,290)	(3,901)	(5,685)	(6,800)	(7,718)
Gross profit	**908**	**1,437**	**2,506**	**3,538**	**4,337**	**5,234**
YoY change	-19.0%	58.2%	74.4%	41.2%	22.6%	20.7%
GPM	34.2%	38.6%	39.1%	38.4%	38.9%	40.4%
SG&A	(301)	(440)	(669)	(1,015)	(1,225)	(1,425)
SG&A % of revenue	11.3%	11.8%	10.4%	11.0%	11.0%	11.0%
Other revenue	144	194	200	220	281	349
Other operating expenses	16	(127)	(188)	-	-	-
Equity-settled share option expense	-	-	(106)	(120)	(80)	(54)
Operating profit	**768**	**1,064**	**1,743**	**2,624**	**3,313**	**4,104**
YoY change	-15.3%	38.6%	63.8%	50.5%	26.3%	23.9%
Operating margin	28.9%	28.5%	27.2%	28.4%	29.7%	31.7%
Interest income	386	468	434	444	447	450
Finance cost	(313)	(494)	(788)	(1,066)	(1,330)	(1,597)
Share of JVs' profits	21	56	85	150	150	150
Share of associates' profits	-	(1)	23	50	50	50
PBT	**861**	**1,092**	**1,497**	**2,202**	**2,630**	**3,157**
Income tax	(170)	(225)	(352)	(440)	(526)	(631)
Effective tax rate	19.7%	20.6%	23.5%	20.0%	20.0%	20.0%
MI	(90)	(117)	(61)	(176)	(210)	(253)
Net profit - reported	**601**	**750**	**1,084**	**1,585**	**1,894**	**2,273**
YoY change	17.2%	24.9%	44.5%	46.2%	19.4%	20.0%
NPM - reported	22.6%	20.1%	16.9%	17.2%	17.0%	17.5%
Net profit - recurring	**521**	**823**	**1,215**	**1,681**	**1,958**	**2,316**
YoY change	-6.2%	57.8%	47.6%	38.4%	16.4%	18.3%
NPM - recurring	19.6%	22.1%	19.0%	18.2%	17.6%	17.9%

Source: RHB estimates

Management Background

Mr Zhang Hong Hai, 61, chairman and executive director. Zhang has been the chairman and executive director since 2008, and is the chairman of the nomination committee. He has accumulated extensive experience in corporate management. He also serves as vice chairman and executive director of Beijing Development Limited, and chairman and executive director of BEP International. He worked for the Beijing municipal government for many years. Zhang graduated from Peking University.

Mr E Meng, 55, vice-chairman and executive director. He serves as vice general manager and CFO of Beijing Enterprises Holdings and the chairman and executive director of JLF Investment. He graduated from China Science and Technology University with a Master's Degree in engineering and subsequently obtained in EMBA Degree from The Hong Kong University of Science and Technology. He is a PRC senior accountant with the qualifications of PRC-certified accountant, asset appraiser, certified real estate appraiser and tax appraiser. He has extensive experience in economics, finance and enterprise management.

Mr Jiang Xin Hao, 49, executive director. He was appointed as an executive director since 2008. He also serves as vice general manager of Beijing Enterprises Holdings Limited and executive director of Beijing Properties (Holdings) Limited. Jiang graduated from Fudan University with a Bachelor's Degree and a Master's Degree in Law. He has many years of experience in economics, finance and corporate management.

Mr Hu Xiao Yong, 49, CEO and executive director. He was appointed as the executive director and chief executive officer in 2008. Hu graduated with an EMBA from Tsinghua University. He was the vice chairman of China Environmental Service Industry Association. Hu is currently the chairman of BEWG Environmental Group Co Ltd.

Mr Zhou Min, 50, executive director. He has been an executive director since 2008. Zhou graduated with an EMBA from Tsinghua University and is the vice-chairman of Mianyang Zhejiang Chamber of Commerce. He previously worked at the People's Bank of China – Yongkang branch of Zhejiang province, and the Industrial and Commercial Bank of China – Yongkang branch of Zhejiang province. He was the chairman of Beijing Jingsheng Investment Company Limited.

Mr Li Hai Feng, 43, vice-president and executive director. He was appointed as the executive director and vice-president of the company in 2008. Li graduated with a Bachelor's Degree in Laws from Peking University. He was an assistant to president of Founder Group and the executive vice-president of Founder Xinti and i Software Technology Co Ltd. He is now the chairman of the Supervisory Committee of BEWG Environmental Group Co Ltd, responsible for exploring business opportunities in water market in China.

Mr Zhang Tie Fu, 51, vice-president and executive director. He was appointed as the executive director and vice-president in 2009. He graduated from Jilin Industrial Institute with a Bachelor's Degree in Engineering. He further studied business administration in the University of International Business and Economics. He has been awarded the titles of senior engineer and senior international finance manager.

Auditors

KPMG has been BEW's auditor since the backdoor listing in 2008.

Financial Exhibits

Profit & Loss (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover	3,727	6,406	9,223	11,137	12,952
Cost of sales	(2,290)	(3,901)	(5,685)	(6,800)	(7,718)
Gross profit	**1,437**	**2,506**	**3,538**	**4,337**	**5,234**
Gen & admin expenses	(440)	(669)	(1,015)	(1,225)	(1,425)
Other operating costs	158	77	220	281	349
Operating profit	**1,155**	**1,914**	**2,744**	**3,393**	**4,158**
Operating EBITDA	1,225	2,036	2,894	3,543	4,309
Depreciation of fixed assets	(25)	(34)	(34)	(35)	(35)
Amortisation of intangible assets	(45)	(88)	(115)	(115)	(115)
Operating EBIT	**1,155**	**1,914**	**2,744**	**3,393**	**4,158**
Net income from investments	55	108	200	200	200
Interest income	468	434	444	447	450
Interest expense	(494)	(788)	(1,066)	(1,330)	(1,597)
Exceptional income - net	(91)	(171)	(120)	(80)	(54)
Pre-tax profit	**1,092**	**1,497**	**2,202**	**2,630**	**3,157**
Taxation	(225)	(352)	(440)	(526)	(631)
Minority interests	(117)	(61)	(176)	(210)	(253)
Profit after tax & minorities	**750**	**1,084**	**1,585**	**1,894**	**2,273**
Reported net profit	**750**	**1,084**	**1,585**	**1,894**	**2,273**
Recurring net profit	**823**	**1,215**	**1,681**	**1,958**	**2,316**

Source: Company data, RHB

Cash flow (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Operating profit	**1,155**	**1,914**	**2,744**	**3,393**	**4,158**
Depreciation & amortisation	**70**	**122**	**150**	**150**	**151**
Change in working capital	**(1,887)**	**(2,653)**	**(3,876)**	**(4,631)**	**(3,730)**
Other operating cash flow	(40)	(142)	272	312	338
Operating cash flow	**(702)**	**(759)**	**(710)**	**(775)**	**917**
Interest received	35	42	52	54	58
Interest paid	(503)	(789)	(1,066)	(1,330)	(1,597)
Tax paid	(71)	(177)	(440)	(526)	(631)
Cash flow from operations	**(1,241)**	**(1,682)**	**(2,164)**	**(2,576)**	**(1,254)**
Capex	(38)	(42)	(40)	(40)	(40)
Other investing cash flow	(556)	(2,858)	(2,210)	(2,550)	(2,890)
Cash flow from investing activities	**(595)**	**(2,900)**	**(2,250)**	**(2,590)**	**(2,930)**
Dividends paid	-	(346)	(515)	(677)	(811)
Proceeds from issue of shares	-	2,297	-	-	-
Increase in debt	4,089	3,686	5,291	6,000	5,500
Other financing cash flow	(618)	577	-	-	-
Cash flow from financing activities	**3,472**	**6,214**	**4,776**	**5,323**	**4,689**
Cash at beginning of period	1,923	3,640	5,366	5,728	5,884
Total cash generated	**1,636**	**1,632**	**362**	**156**	**505**
Forex effects	81	94	-	-	-
Implied cash at end of period	**3,640**	**5,366**	**5,728**	**5,884**	**6,389**

Source: Company data, RHB

Financial Exhibits

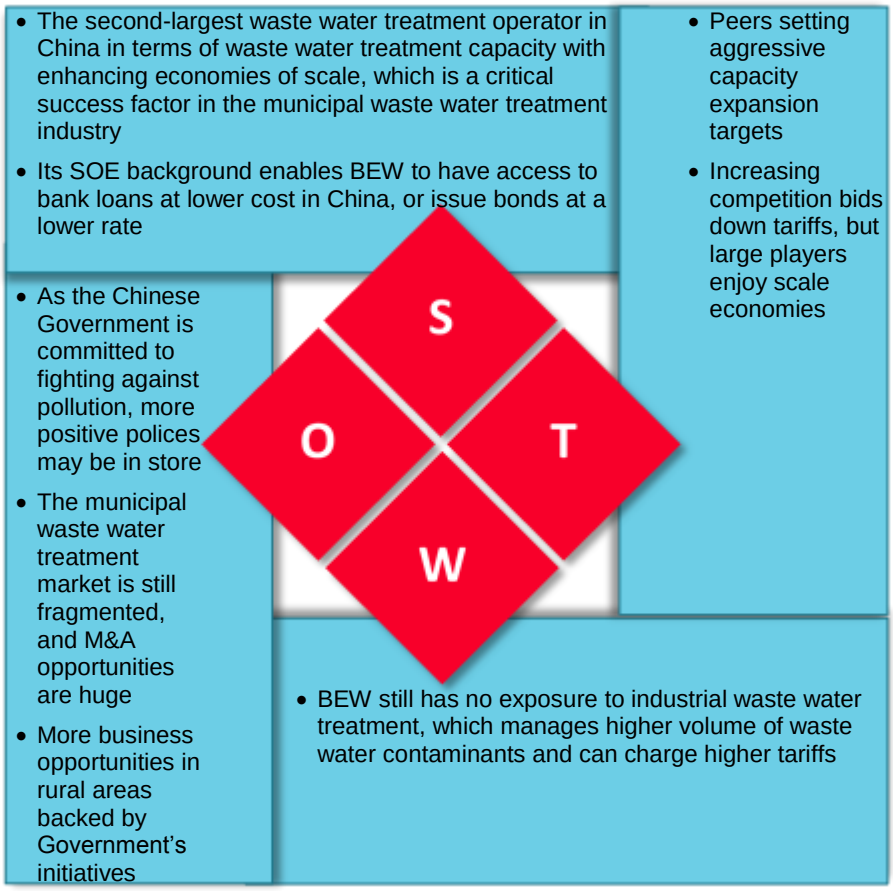
Balance Sheet (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total cash and equivalents	4,376	5,570	5,932	6,089	6,593
Inventories	30	55	69	70	67
Accounts receivable	2,386	2,038	2,494	2,560	2,530
Other current assets	6,887	7,549	7,549	7,549	7,549
Total current assets	**13,679**	**15,212**	**16,044**	**16,267**	**16,740**
Total investments	2,426	3,080	3,280	3,480	3,680
Tangible fixed assets	528	379	384	389	394
Intangible assets	1,779	2,539	2,537	2,536	2,535
Total other assets	12,878	22,977	30,228	37,379	43,592
Total non-current assets	17,611	28,974	36,429	43,784	50,201
Total assets	**31,290**	**44,187**	**52,473**	**60,051**	**66,940**
Short-term debt	2,817	3,987	3,987	3,987	3,987
Accounts payable	1,919	2,755	3,413	3,470	3,348
Other current liabilities	4,522	4,908	5,998	6,093	5,890
Total current liabilities	**9,258**	**11,651**	**13,399**	**13,550**	**13,225**
Total long-term debt	10,477	15,309	20,600	26,600	32,100
Other liabilities	823	1,303	1,303	1,303	1,303
Total non-current liabilities	**11,300**	**16,611**	**21,903**	**27,903**	**33,403**
Total liabilities	**20,558**	**28,262**	**35,301**	**41,453**	**46,628**
Share capital	691	844	844	844	844
Retained earnings reserve	7,776	12,454	13,525	14,741	16,203
Shareholders' equity	**8,467**	**13,298**	**14,368**	**15,585**	**17,047**
Minority interests	2,264	2,627	2,803	3,013	3,266
Total equity	**10,731**	**15,924**	**17,171**	**18,598**	**20,312**
Total liabilities & equity	**31,290**	**44,187**	**52,473**	**60,051**	**66,940**

Source: Company data, RHB

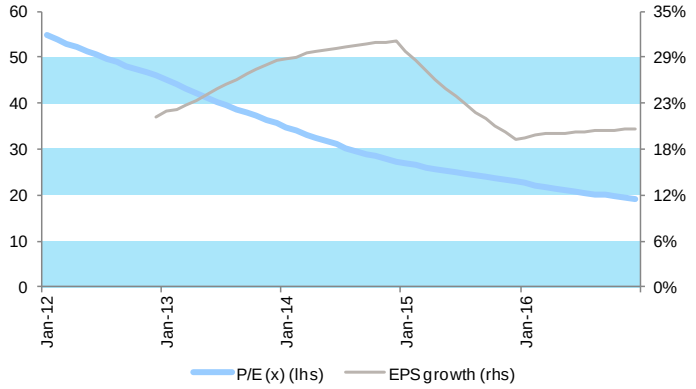
Key Ratios (HKD)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Revenue growth (%)	40.4	71.9	44.0	20.8	16.3
Operating profit growth (%)	72.7	65.7	43.3	23.7	22.6
Net profit growth (%)	24.9	44.5	46.2	19.4	20.0
EPS growth (%)	21.5	28.7	31.3	18.8	20.0
Bv per share growth (%)	4.8	28.6	4.9	8.5	9.4
Operating margin (%)	31.0	29.9	29.7	30.5	32.1
Net profit margin (%)	20.1	16.9	17.2	17.0	17.5
Return on average assets (%)	2.7	2.9	3.3	3.4	3.6
Return on average equity (%)	9.1	10.0	11.5	12.6	13.9
Net debt to equity (%)	83.1	86.2	108.6	131.7	145.2
DPS	0.04	0.05	0.07	0.09	0.10
Recurrent cash flow per share	(0.18)	(0.22)	(0.25)	(0.30)	(0.14)

Source: Company data, RHB

SWOT Analysis

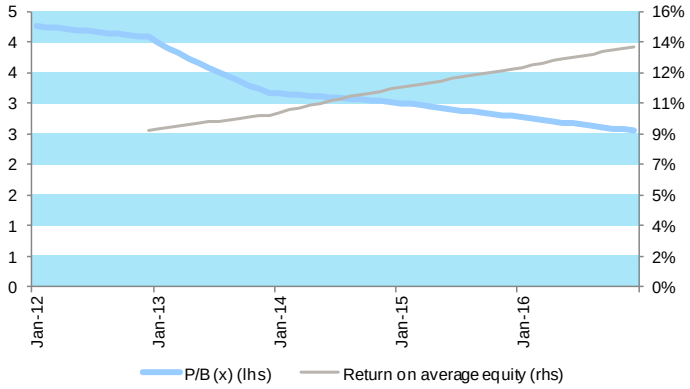


P/E (x) vs EPS growth



Source: Company data, RHB

P/BV (x) vs ROAE



Source: Company data, RHB

Company Profile

Beijing Enterprises Water (BEW) engages in waste water treatment in China, and is top 3 in the industry. It provides WWT construction services in BOT and renovation in BT. The principal business of the group includes operations in water treatment business, construction and technical services for the water environmental renovation. It owns and operates over hundreds of water supply plants and sewage treatment plants in China, with daily design water treatment capacity over tens of millions tons per day by end-2013, including non-operating capacity.

Recommendation Chart

Source: RHB, Bloomberg

China Everbright International (257 HK)

Neutral (Maintained)

Industrial - Waste & Environment Services

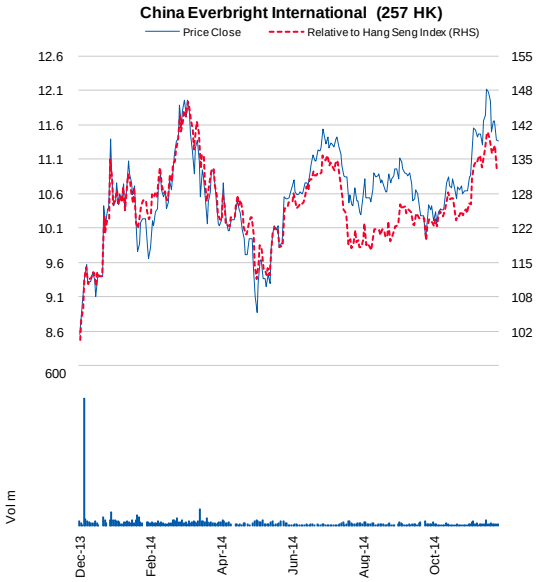
Target Price: HKD10.5

Market Cap: USD6,571m

Price: HKD11.4

Macro ◆◆◆
Risks ◆◆
Growth ◆◆◆
Value ◆

Risk Of More Project Delays



Source: Bloomberg

Avg Turnover (HKD/USD)	85.9m/11.1m
Cons. Upside (%)	1.7
Upside (%)	-7.9
52-wk Price low/high (HKD)	8.55 - 12.1
Free float (%)	51
Share outstanding (m)	4,484
Shareholders (%)	
China Everbright Holdings	41.4
RRJ Capital	7.9

Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	9.4	7.2	4.6	8.0	29.1
Relative	7.1	6.6	10.2	4.9	28.6

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Despite a strong order backlog CEI has recently delayed the completion of a few waste-to-energy projects and further delays are possible. Hence, we trim our FY14-16F recurring earnings by 1-6%, partially offset by new biomass projects secured YTD. Moreover, its development on waste water treatment has been slower than expected following the HanKore M&A, with no greenfield projects secured YTD. We maintain our NEUTRAL rating and DCF-based HKD10.50 TP (8% downside).

- **Waste-to-energy projects completion delayed.** According to China Everbright International's (CEI), six waste-to-energy projects (all at preparatory stage) with 6,000 tonnes total daily treatment capacity had their expected operation commencement delayed by 6-12 months, due to longer-than-expected preparation processes. CEI targeted to have 4,500 out of the 6,000 tonnes to be completed in 2015. The target is unrealistic though, given that construction takes approximately 18 months and the construction for the six projects has yet to start.
- **Longer delay for Wujiang/Ninghai**. For Wujiang, the preparation takes a longer time as an existing waste-to-energy plant had to be demolished before construction. The environmental impact evaluation has been completed in Sep 2014, and the construction will start end-2014/early 2015, according to management. For Ninghai, the waste-to-energy Phase 2 project may be delayed since the location has been changed and all the required government approvals have to be reapplied.
- **Waste water treatment development below our expectation**. CEI has not secured any greenfield waste water treatment project YTD. CEI also delayed operation commencement for two preparatory projects (total 80,000 tonnes) to 2015. We now expect environmental water revenue to drop 21% in 2014 (old forecast: +5%), on lower water plant construction and operation and maintenance (O&M) revenues.
- **Maintain NEUTRAL and TP HKD10.50.** Our TP is based on DCF with a WACC of 6.0%. It implies a FY15F P/E of 20x, above HK-listed waste-to-energy & waste water treatment sector average P/E of 18x, amid its higher recurring 3-year EPS CAGR of 27.6% (vs sector's 23.5%).
- **Risks:** More waste-to-energy projects to be delayed; increasing competition in the waste-to-energy industry; the National Development and Reform Commission (NDRC) missing the 12th Five-Year Plan (12FYP) target.

Forecasts and Valuations	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover (HKDm)	3,410	5,320	6,874	9,753	13,129
Reported net profit (HKDm)	1,123	1,325	1,675	2,289	3,039
Recurring net profit (HKDm)	881	1,325	1,675	2,289	3,039
Recurring net profit growth (%)	19.6	50.3	26.5	36.7	32.7
Recurring EPS (HKD)	0.23	0.33	0.37	0.51	0.68
DPS (HKD)	0.06	0.08	0.10	0.14	0.19
Recurring P/E (x)	48.8	34.8	30.4	22.2	16.8
P/B (x)	5.49	3.81	3.49	3.12	2.73
P/CF (x)	na	na	na	na	na
Dividend Yield (%)	0.5	0.7	0.9	1.2	1.6
EV/EBITDA (x)	32.4	22.7	21.0	16.3	13.3
Return on average equity (%)	15.5	12.2	12.0	14.8	17.4
Net debt to equity (%)	37.0	8.0	26.2	43.9	62.6
Our vs consensus EPS (adjusted) (%)			(5.2)	(1.6)	11.5

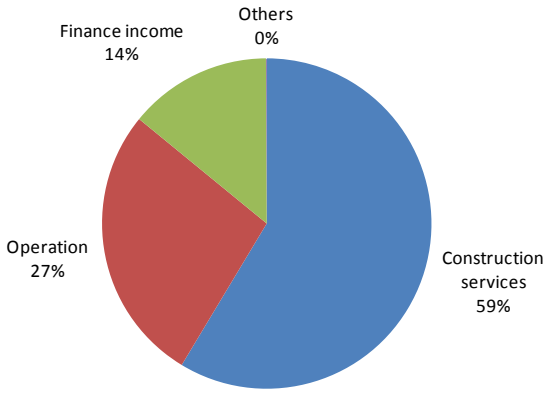
Source: Company data, RHB

Investment Thesis

Maintain NEUTRAL and TP of HKD10.50

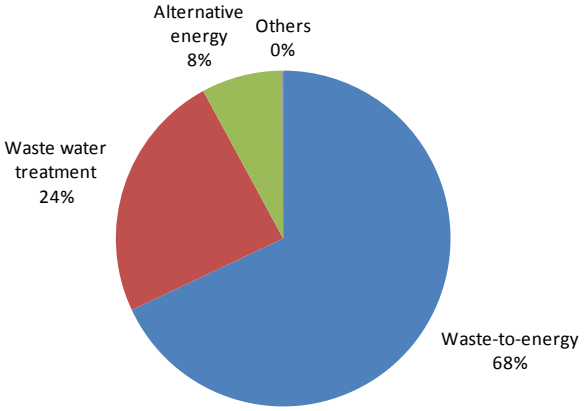
We maintain our NEUTRAL rating and TP of HKD10.50, based on DCF valuation. Our TP implies a FY15F P/E of 20x, which is above its Hong Kong-listed waste treatment sector's average multiple of 18x. Despite its strong waste-to-energy backlog, CEI's project execution is slower than expected, amid longer government approval process. We trim our recurring earnings estimates by 6%/5%/1% for 2014-16 to factor in lower waste-to-energy revenue and nil new waste water treatment greenfield projects secured YTD, largely offset by recently-secured biomass projects. We believe further waste-to-energy project execution delays are possible.

Figure 1: Revenue breakdown by business in 2013



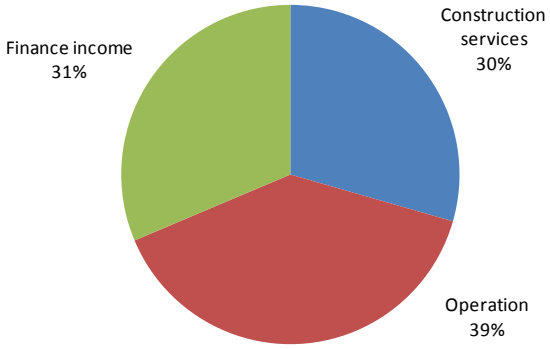
Source: Company data, RHB

Figure 2: Revenue breakdown by segment in 2013



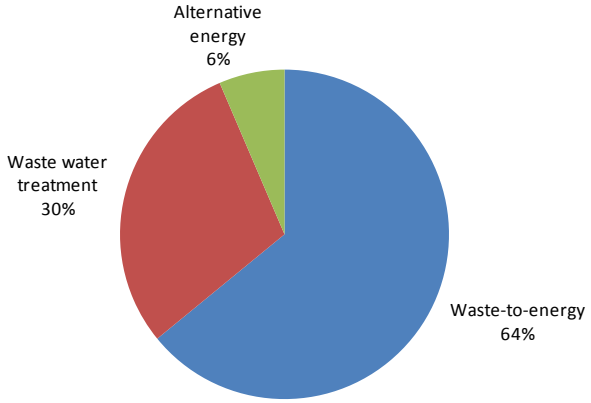
Source: Company data, RHB

Figure 3: Gross profit breakdown by business in 2013



Source: Company data, RHB

Figure 4: Gross profit breakdown by segment in 2013



Source: Company data, RHB

Waste-to-energy sector flourishing

The NDRC targets to uplift living solid waste treatment rate for city/county to 90%/70% in 2015 from 78%/27% in 2010. To achieve the 90%/70% treatment ratio target, the NDRC plans to uplift the current treatment capacity to 871,000 tonnes by 2015 from 457,000 tonnes in 2010, implying a net addition of 415,000 tonnes. The NDRC allocated a budget of CNY264bn for 12FYP, which was 3x its budget for the 11FYP. The upsurge was mainly due to the increase in investment on living waste by 142%.

The Chinese Government prefers incineration to landfill. Landfill is currently the most common method for living waste treatment, accounting for 77%/78% of the total living waste treatment capacity/total living waste treatment volume in 2010. Incineration accounted for only 20%, while the remaining 3% was by compost and other methods like recycling. The NDRC targets to uplift incineration contribution to 35%, and increase incineration capacity by 243% in 12FYP. Over half of the 415,000 new living waste treatment capacity will be for incineration.

Incineration, or waste-to-energy, is much better than landfill, in terms of its impact on the environment. If advanced technology and professional management are used, unpleasant odour can be minimised and treated leachate's quality would be equivalent to municipal sewage. Besides, waste-to-energy can generate power for both waste treatment plant usage and external sales. Power generation consists about 70% of the total revenue of a waste-to-energy project, and this income is completely missed in landfill. Furthermore, under >850°C, hazardous organic material like bacteria/virus can be completely destroyed. Also, incineration is the most effective way to reduce the volume of living waste at up to 90% reduction rate. However, the unit investment cost for waste-to-energy is about CNY400,000-600,000 per tonne of daily treatment, about twice the cost of landfill.

Less fragmented relative to waste water treatment

The waste-to-energy market is less fragmented compared with the municipal/industrial waste water treatment sector. Based on its company website, Hangzhou Jingjiang had 40,000 tonnes of waste-to-energy daily operating capacity, ranked first among its peers. Hangzhou Jingjiang had a 21% market share. Together with Sanfeng and China Energy Conservation and Environmental Protection Group, the top three players have already accounted for almost half of the market, while the top 12 players had 84%. However, if we include waste-to-energy capacity under construction and preparation, CEI's capacity will increase significantly to 32,250 tonnes from 13,250 tonnes (operating), and CEI will rank second in the industry. Waste-to-energy competition is keener than municipal/industrial waste water treatment, but still not overly fierce in 2014/2015. The NDRC planned to increase incineration capacity by 243%, or 28% CAGR in 12FYP. Installation was slow in 2011 although it started picking up in 2012. Therefore, we expect pressure on greenfield tariff to be minimal in the short term.

Waste-to-energy projects completion delayed

According to the company, CEI delayed its expected commencing operation time frame by 6-12 months for six waste-to-energy projects, with total daily treatment capacity of 6,000 tonnes. Among the six projects, four have preparation duration of over 10 months, longer than the usual 6-9 months. The project delay was largely attributable to longer-than-expected preparation processes, including site selection, land acquisition, public hearing, environmental impact assessment, water resources inspection, basic design and engineering. A waste-to-energy project requires over 100 government approvals from different entities, and project delays are unavoidable, according to CEI.

In particular, for Wujiang's waste-to-energy, preparation takes longer than usual because CEI was required to demolish an existing waste-to-energy plant and thoroughly clear the land before construction. The environmental impact evaluation has been completed in Sep 2014, and management expects construction to start in end-2014/early 2015. For Ninghai waste-to-energy Phase 2, since the location has been changed, all the required government approvals have to be reapplied, doubling the usual preparation time.

Figure 5: Delayed waste-to-energy projects

Projects	Provinces	Daily Waste Processing Capacity	Commencement of operation	
			Original Guidance	New Guidance
Ningbo Ninghai Ph1	Zhejiang	700	1H15	end 15
Heze Ph1	Shandong	600	2H15	end 15
Maanshan Ph1	Anhui	800	2H15	end 15
Nanjing Ph2	Jiangsu	2,000	2H15	end 15
Dangshan Ph1	Anhui	400	2H15	end 15
Wujiang	Jiangsu	1,500	1H15	1H16
Total (tonnes)		6,000		

Source: Company data

We expect all seven waste-to-energy projects under construction (4,800 tonnes daily capacity) to be completed according to CEI's schedule. For the 16 projects under preparatory stage, management still expects seven projects (total 5,400 tonnes) to be completed in 2015. The target is unrealistic, given that construction takes 18 months and the construction for the seven projects has yet to start. Thus, we expect all seven projects (5,400 tonnes) to be delayed to 2016.

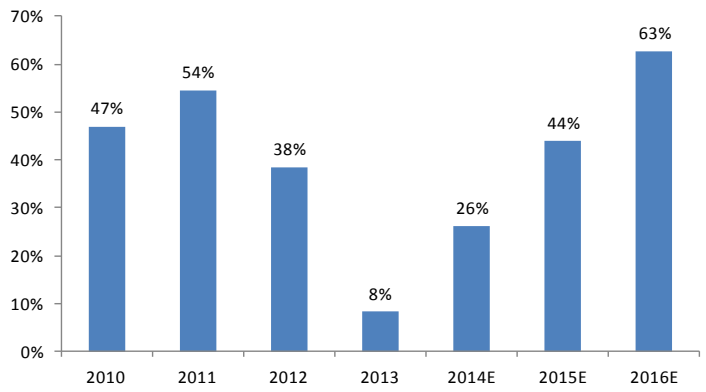
CEI has scheduled to add 14,200 tonnes of waste-to-energy daily capacity in 2015-2016. The total investment cost is HKD10bn. If CEI spends the capex in 2015/2016, its net debt to equity ratio will then surge to 72% in 2016, way above its guidance of not over 60%. Therefore, we expect CEI to add only 2,700 tonnes in 2015, below CEI's 8,100 tonnes. We expect CEI to add 6,200 tonnes in 2016. Some projects set for 2016 initially will be delayed to 2017 or later. The resulting net debt to equity ratio will be at 62% in 2016, largely in line with guidance. In other words, the bottlenecks of CEI's growth are project executions and financing, not new projects/backlog.

Figure 6: Waste-to-energy new daily capacity completion schedule

	Official schedule	Our estimates	Differences
2014E	4,900	4,900	-
2015E	8,100	2,700	(5,400)
2016E	6,100	6,200	100
Sub-total	19,100	13,800	(5,300)
Lingbi Phase 1	500		
Yuhang Ph1	3,000		
Planning projects	5,650		
Total (tonnes)	28,250		

Note: completion guidance of Lingbi Phase 1 unavailable
Source: Company data, RHB

Figure 7: Net debt to equity of CEI



Source: Company data, RHB

Figure 8: CEI's waste-to-energy project at construction/preparatory stage

		Capacity tonnes	Commencement of operation	
			Official	Our estimates
Operating		13,250	NA	NA
Constructing				
Sanya Ph1		700	2H14	2H14
Shouguang Ph1		600	2H14	2H14
Boluo Ph1		700	1H15	1H15
Weifang Ph1		1,000	2015	2015
Rizhao Ph1		600	2H15	2H15
Zhenjiang Ph2		400	2H15	2H15
Changzhou Xinbei Ph1		800	1H16	1H16
Sub-total		4,800		
Preparatory				
Huidong	Guangdong	600	end 15	Jul,16
Yixing Ph2	Shangdong	300	end 15	Jul,16
Ninghai Ph1	Zhejiang	700	end 15	Dec,16
Heze Ph1	Shandong	600	end 15	Jul,16
Maanshan Ph1	Anhui	800	end 15	Jul,16
Nanjing Ph2	Jiangsu	2,000	end 15	Jul,16
Dangshan Ph1	Anhui	400	end 15	Jul,16
Yiyang	Hunan	800	1H16	2017
Wujiang	Jiangsu	1,500	1H16	2017
Nanjing Gaochun	Jiangsu	500	2016	2017
Tengzhou Ph1	Shangdong	600	2016	2017
Pei County Ph1	Jiangsu	400	2H16	2017
Ningbo Beilun Ph2	Zhejiang	500	1H16	2017
Xinzheng Ph1	Henan	1,000	2H16	2017
Lingbi Ph1	Anhui	500	NA	2017
Yuhang Ph1	Zhejiang	3,000	NA	2018
Sub-total		14,200		
Planning		5,650	NA	NA
Total (tonnes)		37,900		

Note: Preparatory-stage projects are the expansion of phase 2/phase 3
Source: Company data, RHB

Figure 9: CEI's waste-to-energy projects at planning stage

Projects		Capacity tonnes	Phase 1 status	Phase 1 Operation	Expected Phase 2/3	Capacity
Pizhou Ph2	Jiangsu	400	Operating	Jul,14	Jul,17	
Sanya Ph2	Hainan	350	Constructing	2H14	2H17	
Boluo Ph2	Guangdong	350	Constructing	1H15	1H17	
Shouguang Ph2	Shandong	400	Constructing	2H14	2H17	1,500
Weifang Ph2	Shandong	500	Constructing	2015	2018	
Ninghai Ph2	Zhejiang	350	Preparatory	end 15	end 18	
Rizhao Ph2	Shandong	300	Constructing	2H15	2H18	
Heze Ph2	Shandong	300	Preparatory	end 15	end 18	
Maanshan Ph2	Anhui	400	Preparatory	end 15	end 18	
Dangshan Ph2	Anhui	300	Preparatory	end 15	end 18	2,150
Changzhou Xinbei Ph2	Jiangsu	700	Constructing	1H16	1H19	
Tengzhou Ph2	Shandong	400	Preparatory	2016	2019	
Pei County Ph2	Shandong	400	Preparatory	2H16	2H19	
Xinzheng Ph2	Shandong	500	Preparatory	2H16	2H19	2,000
Total (tonnes)		5,650				5,650

Note1: Preparatory-stage projects are the expansion of phase 2/phase 3
Note2: Expected phase2/3 projects are our estimates
Source: Company data, RHB

Capex guidance maintained for 2014

Management has maintained its full-year 2014 capex guidance of HKD4bn, which was revised up by 6% in Aug 2014. Capex in 1H14 was HKD1.4bn, implying a capex of HKD2.6bn in 2H14 according to our estimates. Given the delay of the waste-to-energy project execution, CEI may be unable to achieve the target, and we expect CEI to spend HKD3.4bn in capex in 2014. Lower capex implies lower construction revenue in 2014, and subsequently lower O&M in 2015/2016. For 2015, we expect capex to jump 93% to HKD6.5bn, mainly spending on waste-to-energy construction and waste water treatment merger and acquisition (M&A).

No greenfield waste water treatment project YTD

CEI has also delayed the completion of two water projects: Dezhou waste water treatment and Zibo recycling. The delay is a surprise, as CEI has no projects under construction and only three projects (160,000 tonnes in total) at preparatory stage. Construction revenue will be less than expected. But the earnings impact is minimal, given only 24% profit contribution from waste water treatment and small scale of the delayed projects.

Figure 10: Delayed water projects

Projects	Provinces	Daily Waste Processing Capacity	Commencement of operation	
			Original Guidance	New Guidance
Dezhou Nanyunhe Ph2	Shandong	75	2014	2015
Zibo Reusable Ph2	Shandong	15	2014	2015
Total (tonnes)		90		

Source: Company data

CEI has nil greenfield waste water treatment project so far in 2014. The only waste water treatment project was to uplift its stake on the operation of the Qingdao waste water treatment plant in Jul 2014, effectively adding 80,000 tonnes of capacity. We believe CEI's management will concentrate on the completion of the acquisition of HanKore, which has 1.57m tonnes of daily waste water treatment capacity. In future, CEI aims to add at least 1m tonnes of daily capacity. We believe CEI will rely more on M&As, and will acquire companies with sizable waste water treatment scale. An M&A is quicker compared to greenfield. Besides, CEI can issue shares for M&As but not for greenfield, saving CEI's cash and finance cost for waste-to-energy development. The key shortcoming of M&As is no construction revenue which is a huge component, although this is partially offset by immediate O&M revenue contribution with higher gross margin.

HanKore's remote backlog

CEI has 1.94m tonnes of daily water capacity, including the non-operating projects by end-2013, while HanKore has 1.57m tonnes of capacity in 2013. Therefore, the M&A will increase CEI's daily water capacity by 81%. Nonetheless, some of HanKore's projects are very remote. HanKore has 10 projects at preparatory/planning stage with total capacity of 716,000 tonnes. eight out of the 10 projects are "extension" projects, requiring its previous phase to have been quite full in order to get government's approval for developing the next phase. In general, a newly-completed municipal waste water treatment plant requires 3-4 years to reach a 70-80% utilisation rate. We find five projects (total 505,000 tonnes) are remote, because their previous phases are still under construction/planning or just nearly completed. Thus, only 1.07m of HanKore's daily water capacity is relevant to CEI's earnings in 2015-2016, and the remaining capacity will sit long in the planning stage. Hence, CEI's operating water capacity will increase 55% in short/medium term.

CEI aims to be top three in the waste water treatment industry in China in terms of waste water treatment capacity. According to management, to achieve the target, CEI is required to add 1m tonnes per day. Therefore, the new operating capacity is likely going to be flat at 1m tonnes for each day from 2014-2016.

Figure 11: HanKore's waste water treatment, recycling & water supply projects

Projects	Provinces	Business	Daily Waste Processing Capacity	Operation start date for previous phase
Operating				
Daxing Ph1	Beijing	Waste water treatment	40,000	
Yangzhou Ph1	Jiangsu	Waste water treatment	12,500	
Da Pu	Jiangsu	Waste water treatment	100,000	
Xugou Ph1	Jiangsu	Waste water treatment	40,000	
Kunshan Port Ph1	Jiangsu	Waste water treatment	25,000	
Kunshan Port Ph2	Jiangsu	Waste water treatment	25,000	
Suzhou Wuzhong Ph1	Jiangsu	Waste water treatment	75,000	
Nanjing Pukou Ph1	Jiangsu	Waste water treatment	40,000	
Nanjing Liuhe Ph1	Jiangsu	Waste water treatment	20,000	
Binzhou	Shandong	Waste water treatment	40,000	
Xianyang Ph1	Shaanxi	Waste water treatment	100,000	
Sanmenxia Ph1	Henan	Waste water treatment	30,000	
Binzhou	Shandong	Recycling	30,000	
Total (tonnes)			577,500	
Constructing				
Yangzhou Ph2	Jiangsu	Waste water treatment	12,500	
Suzhou Wuzhong Ph2	Jiangsu	Waste water treatment	75,000	
Nanjing Pukou Ph2	Jiangsu	Waste water treatment	40,000	
Nanjing Liuhe Ph2	Jiangsu	Waste water treatment	20,000	
Xianyang Ph2	Shaanxi	Waste water treatment	100,000	
Xianyang Ph1	Shaanxi	Recycling	30,000	
Total (tonnes)			277,500	
Preparatory/Planning				
Xianyang Ph2	Shaanxi	Recycling	140,000	constructing
Yangzhou Ph3	Jiangsu	Waste water treatment	25,000	constructing
Sanmenxia Ph2	Henan	Waste water treatment	120,000	Sep,13
Sanmenxia Ph2	Henan	Recycling	70,000	planning
Sanmenxia Ph2	Henan	Water Supply	150,000	planning
Remote (tonnes)			505,000	
Daxing Ph2	Beijing	Waste water treatment	40,000	Aug,10
Xugou Ph2	Jiangsu	Waste water treatment	40,000	Dec,09
Kunshan Port Ph3	Jiangsu	Waste water treatment	50,000	Sep,08
Sanmenxia Ph1	Henan	Recycling	30,000	NA
Sanmenxia Ph1	Henan	Water Supply	50,000	NA
Total (tonnes)			715,000	
Total (tonnes)			1,570,000	

Source: HanKore, RHB

Key Risks

Increasing competition on waste-to-energy. Competition in waste-to-energy is increasing. Based on operating daily capacity, Hangzhou Jingjiang is the industry leader with a 21% market share, ranked first among its peers, while CEI takes the fifth spot with a 5% market share. Even if all non-operating projects are counted, CEI is still behind Hangzhou Jingjiang at the second place. Thus, pressure from the top player is keener. Besides, Dynagreen (1330 HK, NR) has newly listed, and will likely compete for more projects with its IPO proceeds. The risk is relative low to CEI in the short term, as its strong backlog can cover its development till at least 2016.

NDRC missing 12FYP target. The Chinese Government has set up aggressive targets for the living waste treatment industry in 12FYP. Our market size forecasts are largely based on the Government's target. If the Chinese Government misses its target, it may increase competition within the industry and hence affect future project availability for CEI. However, we believe the chance is minimal, because of higher public concern on pollutions.

No access to low-cost financing. Waste treatment plant projects require heavy capex investment, and financing is a critical success factor for the waste treatment industry. If fundraising becomes difficult, project execution will be delayed or halted. Similarly, if interest rates are trending up, it will erode project returns, resulting in slower capacity expansion. We believe its state-owned enterprises (SOE) background will likely enable CEI to have access to lower cost funding.

Local residents' objection to waste-to-energy. Living waste treatment project may not be welcomed by local residents, not just because of the unpleasant odour, but also due to the emission of toxic air and highly-polluting leachate. However, CEI has imported an incineration grate furnace technology from Germany's MARTIN GmbH. As a result, smoke emission from all of CEI's operating/construction waste-to-energy plants fully complies with EUR2000 standards, which are higher than the national standards. As such, the risk of local residents' objection should be lower.

Project delay risks. Greenfield build-operate-transfer (BOT)/transfer-operate-transfer (TOT) projects require preparation and government approvals. If preparation takes longer than expected, construction will be delayed, resulting in lower construction revenue, followed by O&M revenue.

Valuation

Our TP of HKD10.50 is based on DCF. We use a 6.0% WACC, based on a risk-free rate of 3.0% and equity risk premium of 5.0%, with 0% terminal growth for its future growth after the end of concession rights of BOT/TOT/public private partnership (PPP).

The TP derived from DCF implies a FY15 P/E of 20x, above its Hong Kong-listed waste-to-energy and waste water treatment sector average P/E of 18x, amid higher recurring 3-year EPS CAGR of 28%, compared with sector average's 24%. We believe that CEI may have some downside as there is a risk that more waste-to-energy projects will be delayed.

Figure 12: DCF assumptions

Present value of FCF	55,565
Present value of terminal value	-
EV (HKDm)	55,565
Beta	0.86
Risk free	3.0%
Equity risk premium	5.0%
Cost of equity	7.3%
Cost of debt (after tax)	3.7%
WACC	5.7%
Terminal growth	0.0%
Debt/Capital	44.0%

Source: Bloomberg, RHB

Figure 13: DCF valuation

	HKDm	HKD/share	GNAV %	Valuation Methodology
Waste-to-energy	30,536	6.81	55.0	DCF (6.0% WACC, 0% Terminal Growth)
Water	16,393	3.66	29.5	DCF (6.0% WACC, 0% Terminal Growth)
Alternative energy	8,636	1.93	15.5	DCF (6.0% WACC, 0% Terminal Growth)
GNAV at year end	**55,565**	**12.39**	**100.0**	
Debt & MI	(8,466)	(1.89)		
NAV at year end	**47,099**	**10.50**		

Source: RHB

Figure 14: Valuation table I

Company	Ticker	Price	Mkt cap (USDm)	3-mth avg t/o (USDm)	P/E Hist (x)	P/E FY1 (x)	P/E FY2 (x)	EPS FY1 YoY%	EPS FY2 YoY%	3-Yr EPS Cagr (%)	PEG (x)	Div yld Hist (%)	Div yld FY1 (%)	P/B FY1 (x)
HSI		**24003**			**10.4**	**11.1**	**10.5**	**(6.9)**	**6.6**	**3.0**	**3.7**	**3.8**	**3.6**	**1.2**
CSI300		**3125**			**13.5**	**12.7**	**11.0**	**6.9**	**15.0**	**12.1**	**1.0**	**1.9**	**2.3**	**1.8**
HK-listed WTE operator														
Dynagreen	1330 HK	4.27	576	3.8	NA	22.1	14.3	NA	54.9	N/A	NA	NA	0.5	1.5
CEI	257 HK	11.36	6,571	11.6	34.8	30.4	22.2	14.6	36.7	27.6	1.1	0.8	0.9	3.5
Average					**34.8**	**26.3**	**18.3**	**14.6**	**45.8**	**27.6**	**1.1**	**0.8**	**0.7**	**2.5**
HK-listed WWT operators														
Sound Global	967 HK	7.73	1,463	4.3	18.3	15.3	12.2	20.1	24.6	25.9	0.6	NA	0.0	2.1
CTEG	1363 HK	7.64	1,421	4.8	37.9	29.6	19.0	28.1	55.5	39.4	0.7	0.4	0.6	6.1
BEW	371 HK	5.00	5,617	9.2	31.9	25.7	22.2	24.2	15.8	19.4	1.3	1.1	1.4	3.0
Kangda	6136 HK	3.20	854	5.6	NA	17.9	13.2	NA	35.2	N/A	NA	NA	0.5	2.0
Tianjin Capital	1065 HK	5.20	1,856	3.3	20.6	19.7	19.2	5.0	2.4	5.2	3.8	1.9	1.6	1.4
Average					**27.2**	**21.6**	**17.2**	**19.4**	**26.7**	**22.5**	**1.6**	**1.1**	**0.8**	**2.9**
HK-listed WTE/WWT average					**28.7**	**22.9**	**17.5**	**18.4**	**32.1**	**23.5**	**1.5**	**1.1**	**0.8**	**2.8**
China WTE operators														
Sound Environ	000826 CH	25.05	3,436	52.1	35.8	26.2	19.9	36.4	31.6	33.0	0.8	0.3	0.4	4.0
Hangzhou Boil	002534 CH	24.08	1,568	6.4	141.6	NA	NA	NA	NA	N/A	NA	0.6	NA	NA
Zhejiang Fuchu	002479 CH	9.75	1,165	14.3	51.3	40.6	32.5	26.3	25.0	13.8	2.9	NA	NA	2.5
Focused Photon	300203 CH	19.46	1,408	25.4	54.1	40.5	31.6	33.6	28.1	28.5	1.4	0.2	0.5	4.2
Wuxi Huaguang	600475 CH	15.54	647	15.7	51.8	34.5	27.8	50.0	24.4	39.8	0.9	0.6	NA	NA
Dongjian Environ	002672 CH	32.61	1,704	13.4	53.2	41.8	26.7	27.2	56.5	39.9	1.0	0.6	0.6	4.5
Average					**64.6**	**36.7**	**27.7**	**34.7**	**33.1**	**31.0**	**1.4**	**0.5**	**0.5**	**3.8**
China-listed WWT operators														
Chongqing Water	601158 CH	7.78	6,071	25.2	19.9	19.5	18.7	2.1	4.5	5.4	3.6	3.5	3.5	2.7
Shanghai Chent	600649 CH	7.23	3,512	18.5	15.7	13.9	11.9	13.0	17.3	14.5	1.0	2.1	NA	NA
Beijing Origin	300070 CH	33.18	5,774	50.9	41.9	28.9	20.7	45.0	39.7	37.6	0.8	0.2	0.2	5.8
Beijing Capital	600008 CH	9.28	3,319	36.9	34.0	34.1	27.9	(0.5)	22.4	14.0	2.4	1.6	1.6	2.4
Chengdu Xingro	000598 CH	6.25	3,034	91.7	24.0	21.6	18.5	11.5	16.2	11.5	1.9	0.4	0.6	2.5
Zhongshan Public	000685 CH	22.40	2,836	43.8	28.7	33.9	29.5	(15.4)	15.2	15.1	2.2	0.7	NA	2.4
Tianjin Cap	600874 CH	9.21	1,856	26.5	46.1	49.3	44.5	(6.5)	10.7	7.0	7.0	0.9	0.8	3.2
Beijing Water	300055 CH	43.33	1,726	16.7	71.0	56.5	41.9	25.7	34.8	29.6	1.9	0.3	0.5	5.2
Average					**35.2**	**32.2**	**26.7**	**9.4**	**20.1**	**16.8**	**2.6**	**1.2**	**1.2**	**3.5**
Int'l-listed WWT operators														
American Water	AWK US	52.14	9,349	34.2	25.1	21.6	20.0	15.9	8.1	10.1	2.1	2.3	2.3	2.0
Veolia	VIE FP	14.71	10,168	24.1	NA	33.1	20.3	NA	63.1	N/A	NA	4.8	4.8	1.0
Suez	SEV FP	14.88	9,882	15.5	21.6	20.7	18.5	4.3	11.5	9.6	2.2	4.4	4.4	1.5
Average					**23.3**	**25.1**	**19.6**	**10.1**	**27.6**	**9.8**	**2.1**	**3.8**	**3.8**	**1.5**

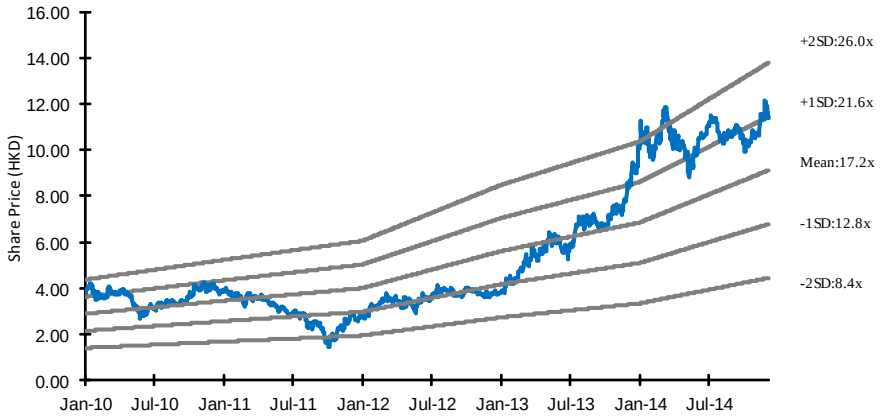
Source: Bloomberg, RHB

Figure 15: Valuation table II

Company	Ticker	Price Chg 1 mth	Price Chg 3 mth	Beta	Rev Hist (USDm)	Rev FY1 (USDm)	NP Hist (USDm)	NP FY1 (USDm)	Gross margin Hist (%)	Net margin Hist (%)	Net margin FY1 (%)	ROE Hist (%)	ROE FY1 (%)	ROE FY2 (%)
HSI														
CSI300														
HK-listed WTE operator														
Dynagreen	1330 HK	(18.7)	(7.0)	N/A	159	161	25	22	N/A	15.5	13.8	12.5	8.2	10.0
CEI	257 HK	6.8	4.6	0.8	686	887	171	216	44.7	24.9	24.4	13.0	12.4	13.8
Average		**(5.9)**	**(1.2)**	**0.8**	**422**	**524**	**98**	**119**	**44.7**	**20.2**	**19.1**	**12.8**	**10.3**	**11.9**
HK-listed WWT operators														
Sound Global	967 HK	(12.2)	(11.3)	0.9	510	629	69	92	30.5	13.8	14.9	14.6	15.8	15.4
CTEG	1363 HK	(0.7)	13.9	N/A	63	134	29	47	63.1	46.4	35.2	36.0	26.3	24.7
BEW	371 HK	(8.4)	(8.8)	0.7	827	1,190	140	194	39.1	19.0	18.2	10.2	11.3	13.2
Kangda	6136 HK	(12.3)	(7.2)	N/A	218	278	38	47	38.3	17.3	17.0	18.9	14.3	13.3
Tianjin Capital	1065 HK	(5.5)	(12.9)	1.2	260	268	46	49	38.1	17.6	18.1	7.9	8.0	7.0
Average		**(7.8)**	**(5.3)**	**0.9**	**375**	**500**	**64**	**86**	**41.8**	**22.8**	**20.7**	**17.5**	**15.2**	**14.7**
HK-listed WTE/WWT average		**(7.3)**	**(4.1)**	**0.9**	**389**	**507**	**74**	**95**	**42.3**	**22.1**	**20.2**	**16.2**	**13.8**	**13.9**
China WTE operators														
Sound Environ	000826 CH	2.7	(1.1)	1.1	432	625	95	128	34.5	22.0	20.4	16.1	15.4	17.3
Hangzhou Boil	002534 CH	26.7	73.2	1.3	961	N/A	11	N/A	15.2	1.2	N/A	0.5	N/A	N/A
Zhejiang Fuchu	002479 CH	(4.4)	10.7	1.0	514	574	23	30	11.4	4.5	5.2	7.3	5.2	7.4
Focused Photon	300203 CH	(13.2)	13.4	0.7	151	194	26	33	48.6	17.1	17.3	8.7	10.0	11.8
Wuxi Huaguang	600475 CH	4.8	16.8	1.1	538	N/A	12	N/A	17.9	2.3	N/A	6.2	N/A	N/A
Dongjian Environ	002672 CH	0.9	(2.7)	1.2	256	338	34	45	29.8	13.2	13.2	10.0	10.6	14.6
Average		**2.9**	**18.4**	**1.1**	**475**	**433**	**34**	**59**	**26.2**	**10.1**	**14.0**	**8.1**	**10.3**	**12.8**
China-listed WWT operators														
Chongqing Water	601158 CH	27.3	37.2	1.2	645	720	305	307	49.9	47.3	42.6	13.5	13.6	13.9
Shanghai Chent	600649 CH	0.0	3.6	1.2	547	780	224	255	37.0	40.9	32.7	11.3	10.0	N/A
Beijing Origin	300070 CH	13.1	3.8	1.0	496	741	137	196	35.5	27.5	26.5	19.1	20.6	22.3
Beijing Capital	600008 CH	22.3	28.7	1.1	667	742	98	99	37.8	14.7	13.4	10.5	7.7	8.3
Chengdu Xingro	000598 CH	7.8	9.5	1.1	388	430	121	141	47.4	31.2	32.9	11.3	11.4	12.0
Zhongshan Public	000685 CH	59.5	74.3	1.1	138	184	99	108	32.3	71.5	58.7	10.6	9.7	7.6
Tianjin Cap	600874 CH	6.5	7.3	1.1	260	271	46	43	38.1	17.6	16.0	7.9	N/A	6.7
Beijing Water	300055 CH	14.1	28.6	0.9	124	178	23	30	25.7	18.5	16.8	6.8	9.1	11.6
Average		**18.8**	**24.1**	**1.1**	**408**	**506**	**132**	**147**	**38.0**	**33.7**	**29.9**	**11.4**	**11.7**	**11.8**
Int'l-listed WWT operators														
American Water	AWK US	0.3	3.2	0.5	2,902	3,081	369	431	N/A	12.7	14.0	8.2	8.8	9.7
Veolia	VIE FP	4.7	2.0	1.1	18,167	18,737	(110)	213	15.0	(0.6)	1.1	0.1	3.0	5.1
Suez	SEV FP	8.0	2.8	1.0	11,922	11,741	287	319	N/A	2.4	2.7	10.4	7.0	8.3
Average		**4.3**	**2.7**	**0.9**	**10,997**	**11,186**	**182**	**321**	**15.0**	**4.8**	**6.0**	**6.2**	**6.3**	**7.7**

Source: Bloomberg, RHB

Figure 16: 5-year forward P/E band



Source: Bloomberg, RHB

Cutting earnings forecasts by 6%/5%/1% for FY14/FY15/FY16

We trim our revenue forecasts by 12% for FY14, to factor in execution delay on waste-to-energy and alternative energy, together with nil greenfield waste water treatment secured in 2014 so far. We also cut FY15 revenue by 4% to factor in waste-to-energy delay, partially offset by new biomass projects secured (a total of seven new projects secured YTD in 2014, with 1bn kWh capacity). However, we lift FY16 revenue by 1% amid the increase in new biomass projects, which offset the reduction in waste-to-energy and lower waste water treatment revenue due to higher M&A portion for the new waste water treatment projects, resulting in lower construction revenue. We cut our earnings forecasts by 6%/5%/1% for FY14-16 to reflect the lower revenue.

Figure 17: Changes to our forecasts (HKDm)

	FY14 New	FY14 Old	Chg	FY15 New	FY15 Old	Chg	FY16 New	FY16 Old	Chg
Environmental energy	5,309	5,743	(7.6)	6,887	7,353	(6.3)	8,089	9,118	(11.3)
Environmental water	1,015	1,349	(24.7)	1,766	1,871	(5.7)	1,975	2,523	(21.7)
Alternative energy	545	758	(28.1)	1,096	949	15.6	3,060	1,045	192.9
Others	4	4	-	4	4	-	4	4	-
Revenue	**6,874**	**7,855**	**(12.5)**	**9,753**	**10,178**	**(4.2)**	**13,129**	**12,690**	**3.5**
COGS	(3,856)	(4,607)	(16.3)	(5,527)	(5,774)	(4.3)	(7,443)	(6,974)	6.7
Gross profit	**3,018**	**3,247**	**(7.0)**	**4,226**	**4,404**	**(4.0)**	**5,686**	**5,716**	**(0.5)**
GPM	43.9%	41.3%		43.3%	43.3%		43.3%	45.0%	
Interest income	45	35	30.0	45	37	21.2	45	45	(0.3)
Other revenue	160	180	(10.9)	218	226	(3.8)	285	276	3.2
Other gains & loss	-	-	NA	-	-	NA	-	-	NA
SG&A	(507)	(579)	(12.5)	(719)	(750)	(4.2)	(968)	(936)	3.5
Operating expenses	**(507)**	**(579)**	(12.5)	**(719)**	**(750)**	(4.2)	**(968)**	**(936)**	3.5
Opex as % of revenue	7.4%	7.4%		7.4%	7.4%		7.4%	7.4%	
Operating profit	**2,717**	**2,882**	(5.7)	**3,769**	**3,917**	(3.8)	**5,048**	**5,102**	(1.1)
Operating margin	39.5%	36.7%		38.6%	38.5%		38.5%	40.2%	
Finance cost	(411)	(350)	17.5	(535)	(484)	10.5	(755)	(729)	3.6
EBT	**2,305**	**2,532**	(9.0)	**3,234**	**3,432**	(5.8)	**4,293**	**4,374**	(1.8)
EBT margin	33.5%	32.2%		33.2%	33.7%		32.7%	34.5%	
Income tax	(569)	(633)	(10.1)	(799)	(858)	(6.9)	(1,060)	(1,093)	(3.0)
Effective tax rate	24.7%	25.0%		24.7%	25.0%		24.7%	25.0%	
MI	(61)	(114)	(46.7)	(146)	(154)	(5.4)	(194)	(197)	(1.4)
Net profit - reported	**1,675**	**1,785**	(6.2)	**2,289**	**2,420**	(5.4)	**3,039**	**3,083**	(1.4)
NPM (reported)	24.4%	22.7%		23.5%	23.8%		23.1%	24.3%	
Net profit - recurring	**1,675**	**1,785**	(6.2)	**2,289**	**2,420**	(5.4)	**3,039**	**3,083**	(1.4)
NPM (recurring)	24.4%	22.7%		23.5%	23.8%		23.1%	24.3%	

Source: RHB

Figure 18: 2H14 earnings forecasts (HKDm)

	1H13 Actual	2H13 Actual	1H14 Actual	2H14 RHB	2H14 YoY
Environmental energy	1,764	1,852	2,147	3,162	70.7
Environmental water	571	712	506	510	(28.4)
Alternative energy	131	285	288	257	(9.8)
Others	0	4	3	1	(63.2)
Revenue	**2,467**	**2,853**	**2,944**	**3,930**	37.7
COGS	(1,321)	(1,623)	(1,592)	(2,263)	39.4
Gross profit	**1,146**	**1,230**	**1,352**	**1,667**	35.5
GPM	46.4%	43.1%	45.9%	42.4%	
Opex & others	(112)	(136)	(101)	(201)	47.1
Opex as % of revenue	4.5%	4.8%	3.4%	5.1%	
Operating profit	**1,034**	**1,093**	**1,250**	**1,466**	34.1
Operating margin	41.9%	38.3%	42.5%	37.3%	
Finance expense & others	(150)	(166)	(171)	(241)	45.1
PBT	**884**	**927**	**1,080**	**1,225**	32.1
Income tax	(219)	(229)	(243)	(327)	42.7
Effective tax rate	24.7%	24.7%	22.5%	26.7%	
MI	(16)	(24)	(35)	(25)	6.1
Net profit	**650**	**674**	**802**	**873**	29.5
NPM - reported	26.4%	23.6%	27.2%	22.2%	
Net profit - recurring	**650**	**674**	**802**	**873**	29.5
NPM - recurring	26.4%	23.6%	27.2%	22.2%	

Source: Company data, RHB

Figure 19: Detailed P&L (HKDm)

	FY12	FY13	FY14F	FY15F	FY16F
Environmental energy	1,742	3,616	5,309	6,887	8,089
Environmental water	1,267	1,284	1,015	1,766	1,975
Alternative energy	400	416	545	1,096	3,060
Others	0	4	4	4	4
Revenue	**3,410**	**5,320**	**6,874**	**9,753**	**13,129**
COGS	(1,726)	(2,944)	(3,856)	(5,527)	(7,443)
Gross profit	**1,684**	**2,375**	**3,018**	**4,226**	**5,686**
GPM	49.4%	44.7%	43.9%	43.3%	43.3%
Interest income	24	27	45	45	45
Other revenue	83	117	160	218	285
Other gains & loss	(10)	(0)	-	-	-
SG&A	(297)	(392)	(507)	(719)	(968)
Operating expenses	**(307)**	**(392)**	**(507)**	**(719)**	**(968)**
Opex as % of revenue	9.0%	7.4%	7.4%	7.4%	7.4%
Operating profit	**1,483**	**2,127**	**2,717**	**3,769**	**5,048**
Operating margin	43.5%	40.0%	39.5%	38.6%	38.5%
Finance cost	(313)	(316)	(411)	(535)	(755)
EBT	**1,171**	**1,812**	**2,305**	**3,234**	**4,293**
EBT margin	34.3%	34.1%	33.5%	33.2%	32.7%
Income tax	(267)	(447)	(569)	(799)	(1,060)
Effective tax rate	22.8%	24.7%	24.7%	24.7%	24.7%
MI	(23)	(40)	(61)	(146)	(194)
Net profit - reported	**881**	**1,325**	**1,675**	**2,289**	**3,039**
NPM (reported)	25.8%	24.9%	24.4%	23.5%	23.1%
Net profit - recurring	**881**	**1,325**	**1,675**	**2,289**	**3,039**
NPM (recurring)	25.8%	24.9%	24.4%	23.5%	23.1%

Source: Company data, RHB

Management's Background

Mr Tang Shuang Ning, 59, chairman and executive director. Mr Tang joined the Board in Jul 2007. He has extensive knowledge and experience in banking and finance management, and serves as the vice chairman of China Society for Finance and Banking. Mr Tang is the chairman of China Everbright Group, China Everbright Holdings and China Everbright Bank. He is also the director of Everbright Securities, Sun Life Everbright Life Insurance and the chairman of China Everbright Limited. He is the representative of the 12th National People's Congress and the vice-chairman of the Agriculture and Rural Affairs Committee of the 12th National People's Congress. He holds a Master's degree in Economics from China Northeast University of Finance & Economics.

Mr Zang Qiu Tao, 61, vice-chairman and executive director. He is a member of the National Committee of the 12th Chinese People's Political Consultative Conference. He is also the vice-chairman of China Everbright Holdings, and is the deputy chairman of China Everbright Limited. He is formerly the division chief of the State Economic Commission and deputy division director of the State Planning Commission. Mr Zang graduated from the Graduate School of the Chinese Academy of Social Sciences.

Mr Chen Xiao Ping, 60, CEO and executive director. He is also the vice-chairman of China Everbright Holdings and a standing director of China Environmental Culture Promotion Association. Before joining CEI, Mr Chen had been a department head in the Bureau of Investigation & Supervision of The People's Bank of China, the assistant governor of China Everbright Bank and the president of the bank's Guangzhou branch. He holds a Master's degree with a major in Money & Banking from the Department of Finance and Trade of the China Research Institute of Social Science. He holds the title of senior economist and certified public accountant (CPA) in the People's Republic of China (PRC).

Mr Wang Tian Yi, 51, general manager and executive director. He is formerly the president of Shandong Academy of Science and the deputy mayor of Jinan, Shandong. He had also been the vice president, dean and professor of the Economic Management faculty of Yantai University. He is currently also a part-time professor and doctoral tutor of Shandong University. He is also a member of the HKTDC Mainland Business Advisory Committee. He holds a Doctorate's degree in Economics, a Master's degree in Management and a Bachelor's degree in Electronics from Tsinghua University.

Mr Wong Kam Chung, Raymond, 50, CFO and executive director. He is a member of the Hong Kong Institute of Certified Public Accountants, a member of the Institute of Chartered Accountants of England and Wales, a fellow member of the Association of Chartered Certified Accountants (ACCA) and a Certified General Accountant in Canada. He holds a Master of Business Administration degree, a Master of Management degree in Information Technology Management from Macquarie University, Australia, and a Bachelor of Arts with honours degree in Accountancy from the City University of Hong Kong.

Mr Cai Shu Guang, 58, deputy general manager and executive director. He is also the general manager of Everbright Environmental Protection. Prior to joining the group, he was the deputy general manager of Shenzhen Kingway Brewery. Mr Cai graduated from the Department of Computer Science from Shanghai Fudan University and holds a Master of Business Administration degree from the University of Ballarat in Australia. He holds the title of senior engineer.

Auditors

KPMG has been CEI's auditor for over 10 years.

Financial Exhibits

Profit & Loss (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total turnover	3,410	5,320	6,874	9,753	13,129
Cost of sales	(1,726)	(2,944)	(3,856)	(5,527)	(7,443)
Gross profit	**1,684**	**2,375**	**3,018**	**4,226**	**5,686**
Gen & admin expenses	(297)	(392)	(507)	(719)	(968)
Operating profit	**1,386**	**1,983**	**2,512**	**3,507**	**4,718**
Operating EBITDA	1,469	2,074	2,614	3,617	4,835
Depreciation of fixed assets	(53)	(70)	(70)	(78)	(86)
Amortisation of intangible assets	(30)	(21)	(33)	(32)	(31)
Operating EBIT	**1,386**	**1,983**	**2,512**	**3,507**	**4,718**
Other recurring income	73	117	160	218	285
Interest income	24	27	45	45	45
Interest expense	(313)	(316)	(411)	(535)	(755)
Other non-recurring income	242	-	-	-	-
Pre-tax profit	**1,413**	**1,812**	**2,305**	**3,234**	**4,293**
Taxation	(267)	(447)	(569)	(799)	(1,060)
Minority interests	(23)	(40)	(61)	(146)	(194)
Profit after tax & minorities	**1,123**	**1,325**	**1,675**	**2,289**	**3,039**
Reported net profit	**1,123**	**1,325**	**1,675**	**2,289**	**3,039**
Recurring net profit	**881**	**1,325**	**1,675**	**2,289**	**3,039**

Source: Company data, RHB

Cash flow (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Operating profit	**1,386**	**1,983**	**2,512**	**3,507**	**4,718**
Depreciation & amortisation	**82**	**91**	**103**	**110**	**117**
Change in working capital	**(1,766)**	**(2,500)**	**(3,984)**	**(5,253)**	**(7,104)**
Other operating cash flow	126	117	160	218	285
Operating cash flow	**(172)**	**(310)**	**(1,209)**	**(1,419)**	**(1,984)**
Interest received	24	27	45	45	45
Tax paid	(143)	(447)	(569)	(799)	(1,060)
Cash flow from operations	**(290)**	**(730)**	**(1,733)**	**(2,172)**	**(2,999)**
Capex	(732)	(142)	(250)	(250)	(250)
Other new investments	-	(399)	1,345	-	-
Other investing cash flow	(331)	-	-	-	-
Cash flow from investing activities	**(1,063)**	**(541)**	**1,095**	**(250)**	**(250)**
Dividends paid	(246)	(366)	(448)	(545)	(733)
Proceeds from issue of shares	1,237	3,617	-	-	-
Increase in debt	734	917	1,079	4,000	5,000
Other financing cash flow	(267)	(316)	(411)	(535)	(755)
Cash flow from financing activities	**1,458**	**3,852**	**219**	**2,920**	**3,512**
Cash at beginning of period	1,684	1,807	4,426	4,007	4,504
Total cash generated	**105**	**2,581**	**(419)**	**497**	**263**
Forex effects	17	38	-	-	-
Implied cash at end of period	**1,807**	**4,426**	**4,007**	**4,504**	**4,767**

Source: Company data, RHB

Financial Exhibits

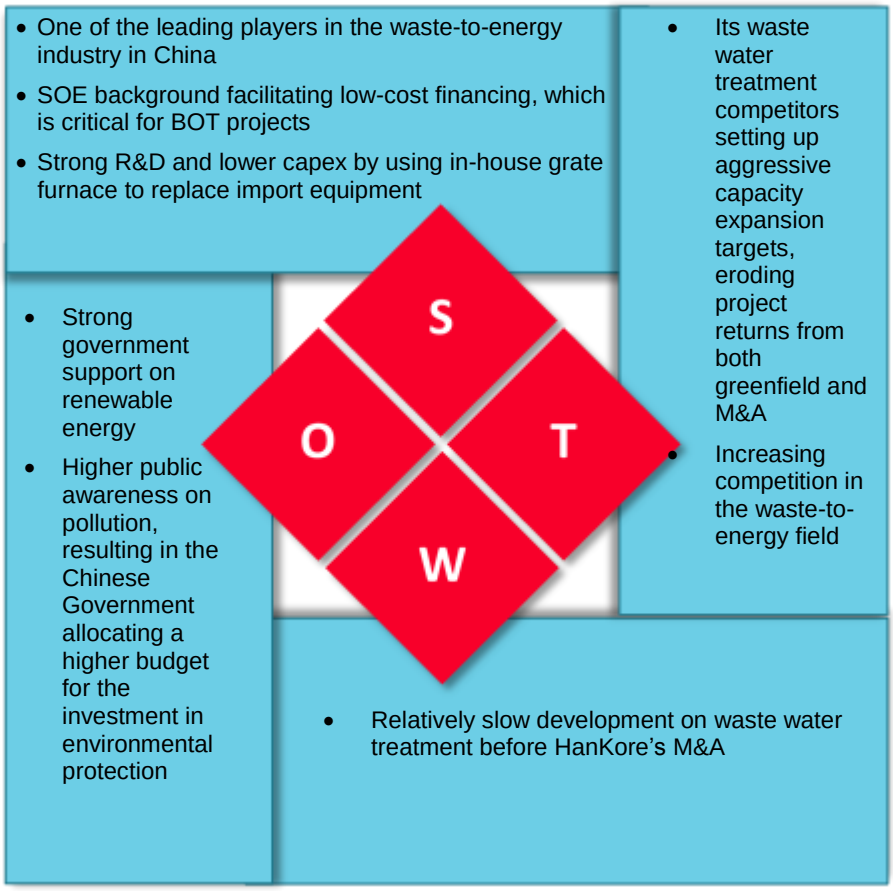
Balance Sheet (HKDm)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Total cash and equivalents	2,797	5,815	4,050	4,548	4,811
Inventories	65	76	98	138	186
Accounts receivable	532	400	517	734	988
Other current assets	1,345	1,954	1,954	1,954	1,954
Total current assets	**4,739**	**8,244**	**6,619**	**7,374**	**7,938**
Total investments	11	432	432	432	432
Tangible fixed assets	1,460	1,410	1,590	1,762	1,926
Intangible assets	634	1,117	1,084	1,052	1,021
Total other assets	9,739	12,268	16,649	22,629	30,559
Total non-current assets	11,844	15,227	19,755	25,875	33,938
Total assets	**16,583**	**23,471**	**26,374**	**33,249**	**41,876**
Short-term debt	1,635	1,780	2,057	3,086	4,372
Accounts payable	1,191	1,734	2,270	3,254	4,382
Other current liabilities	58	58	58	58	58
Total current liabilities	**2,884**	**3,572**	**4,386**	**6,399**	**8,813**
Total long-term debt	4,369	5,141	5,943	8,914	12,628
Other liabilities	659	979	979	979	979
Total non-current liabilities	**5,028**	**6,120**	**6,921**	**9,893**	**13,607**
Total liabilities	**7,913**	**9,692**	**11,307**	**16,292**	**22,419**
Share capital	404	448	448	448	448
Retained earnings reserve	7,946	12,926	14,153	15,897	18,203
Shareholders' equity	**8,350**	**13,374**	**14,601**	**16,345**	**18,651**
Minority interests	321	405	466	612	806
Other equity	-	0	-	-	-
Total equity	**8,670**	**13,779**	**15,067**	**16,957**	**19,457**
Total liabilities & equity	**16,583**	**23,471**	**26,374**	**33,249**	**41,876**

Source: Company data, RHB

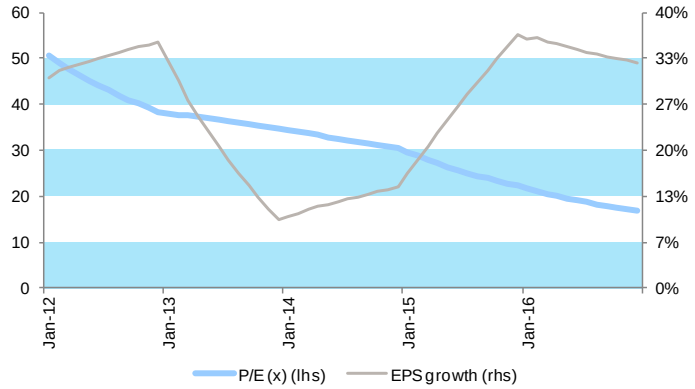
Key Ratios (HKD)	Dec-12	Dec-13	Dec-14F	Dec-15F	Dec-16F
Revenue growth (%)	(2.2)	56.0	29.2	41.9	34.6
Operating profit growth (%)	15.3	43.1	26.6	39.6	34.5
Net profit growth (%)	40.2	17.9	26.5	36.7	32.7
EPS growth (%)	35.7	9.9	14.6	36.7	32.7
Bv per share growth (%)	22.8	44.3	9.2	11.9	14.1
Operating margin (%)	40.7	37.3	36.5	36.0	35.9
Net profit margin (%)	32.9	24.9	24.4	23.5	23.1
Return on average assets (%)	7.4	6.6	6.7	7.7	8.1
Return on average equity (%)	15.5	12.2	12.0	14.8	17.4
Net debt to equity (%)	37.0	8.0	26.2	43.9	62.6
DPS	0.06	0.08	0.10	0.14	0.19
Recurrent cash flow per share	(0.08)	(0.18)	(0.39)	(0.48)	(0.67)

Source: Company data, RHB

SWOT Analysis

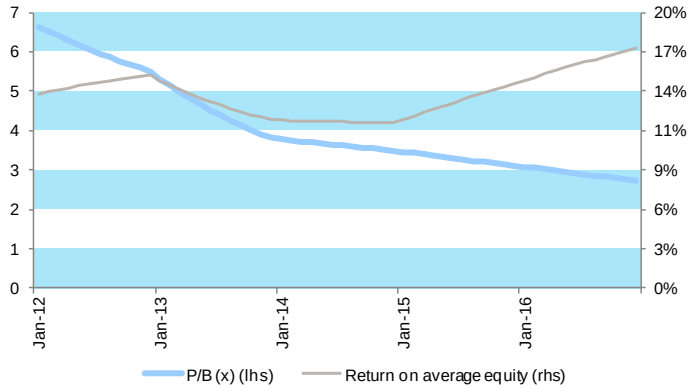


P/E (x) vs EPS growth



Source: Company data, RHB

P/BV (x) vs ROAE



Source: Company data, RHB

Company Profile

China Everbright International constructs and operates environmental protection projects such as waste-to-energy and waste water treatment mainly under BOT/TOT model. It also invests in alternative energy including biomass, methane-to-energy, solar and wind. Its parent company is China Everbright Group.

Recommendation Chart

Source: RHB, Bloomberg

Date	Recommenda	Target Price	Price
2014-08-13	Neutral	10.5	10.5
2014-02-28	Neutral	10.3	11.4
2013-12-31	Neutral	9.0	10.4
2013-12-12	Neutral	9.0	9.6
2013-08-07	Neutral	6.8	7.0
2013-06-05	Neutral	6.1	6.1
2013-05-20	Buy	6.0	6.5
2013-03-01	Buy	5.7	5.2
2013-01-15	Buy	5.1	4.4
2012-12-19	Buy	5.1	3.9

Source : RHB, Bloomberg

RHB Guide to Investment Ratings

Buy: Share price may exceed 10% over the next 12 months
Trading Buy: Share price may exceed 15% over the next 3 months, however longer-term outlook remains uncertain
Neutral: Share price may fall within the range of +/- 10% over the next 12 months
Take Profit: Target price has been attained. Look to accumulate at lower levels
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