

## 1Q2018 Results Presentation

April 2018

## DRIVING GROWTH

AND EXPANSION

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- 1. At a Glance
- 2. Financial Highlights
- 3. Operational Updates
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- 5. Q&As





## At a Glance



## **About Jinjiang Environment**



#### **Jinjiang Environment**

- First mover and leader as well as the first private operator in the Waste-To-Energy (WTE) industry in the PRC
- ✓ Established PRC's first WTE plant using Circulating Fluidised Bed (CFB) incineration technology in 1998 and built a track record of close to 20 years
- ✓ Listed on the mainboard of the Singapore Exchange on 3 August 2016
- ✓ As at 22 April 2018, 15 facilities out of 20 facilities in operation are under BOO model



As at 22 April 2018

RMB million	FY2017	FY2016	Change (%)	1Q2018	1Q2017	Change (%)
Revenue	2,715.1	2,631.9	3.2	754.9	557.6	35.4
WTE Revenue	2,324.0	2,348.6	-1.0	720.2	504.5	42.8
Gross Profit	1,034.6	1,049.4	-1.4	210.6	237.7	-11.4
Profit Before Tax	819.2	830.0	-1.3	142.2	178.2	-20.2
Net Attributable Profit	601.2	597.6	0.6	100.9	127.4	-20.9



WTE BUSINESS					
Description	Scale and Capacity				
<ul> <li>Treatment of municipal solid waste and conversion into electricity with the following revenue streams:</li> <li>Waste treatment (contracted with local government)</li> <li>Electricity generation (tariffs decided by central and local governments)</li> <li>Steam supply (fee decided by local government or company)</li> </ul>	<ul> <li>20 WTE facilities in 12 provinces, autonomous regions and centrally- administered municipalities in the PRC</li> <li>3 under construction &amp; expansion</li> <li>21 in preparation stage</li> <li>Made Latin American debut in April 2018 – agreed to invest for a 51% stake in Brazilian WTE company</li> <li>3 WTE projects in India secured since April 2017</li> </ul>				
<ul> <li>Majority on Build-Order-Operate (BOO) model and the rest on Build-Operate- Transfer (BOT) model</li> </ul>	<ul> <li>Current waste treatment capacity of 28,280 tons/day</li> <li>When fully completed and acquired, total capacity will increase to approximately 65,086 tons/day</li> </ul>				



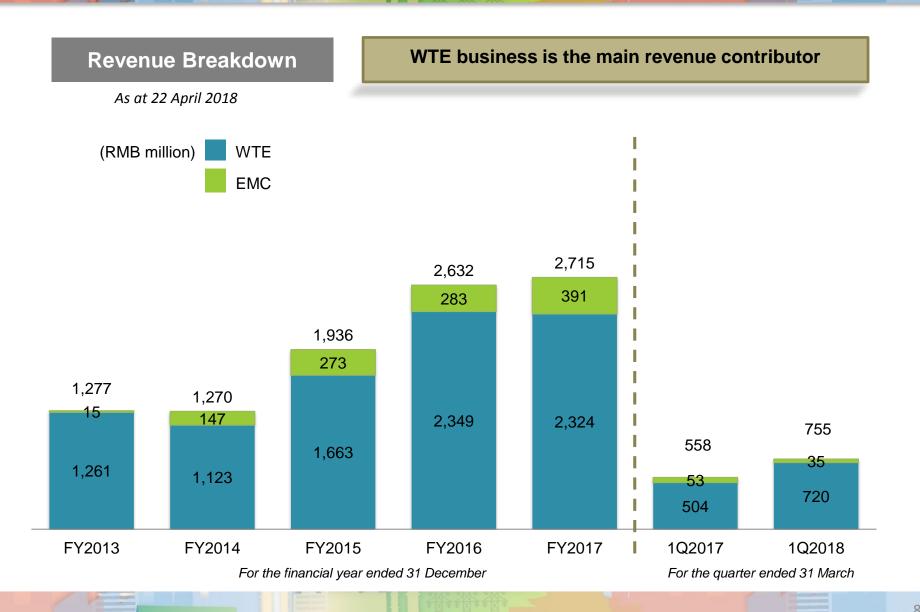
#### **ENERGY MANAGEMENT CONTRACTING (EMC) BUSINESS**

Description	Scale and Capacity
<ul> <li>Started providing EMC services to Metallurgical, chemical and power generation companies since 2014</li> <li>Scope of services include: <ul> <li>Energy saving and residual heat utilisation</li> <li>Operational optimization and equipment selection advisory</li> <li>Management and operational support</li> <li>Technical advisory on energy saving</li> </ul> </li> </ul>	<ul> <li>Current portfolio of 25 EMC projects, of which 20 have produced energy-saving results</li> <li>25 technology consulting projects have been implemented</li> </ul>

As at 22 April 2018

#### **Business Overview**





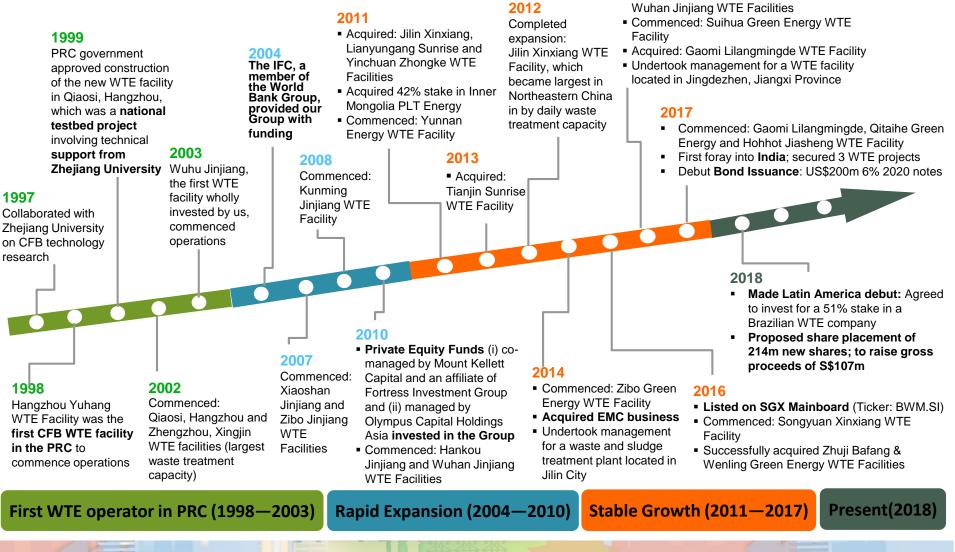
#### **Important Milestones**



2015

Completed expansion: Tianjin Sunrise and

#### Established in 1998, Jinjiang Environment is the first and currently the largest Waste-To-Energy (WTE) operator (by treatment capacity) in the PRC.

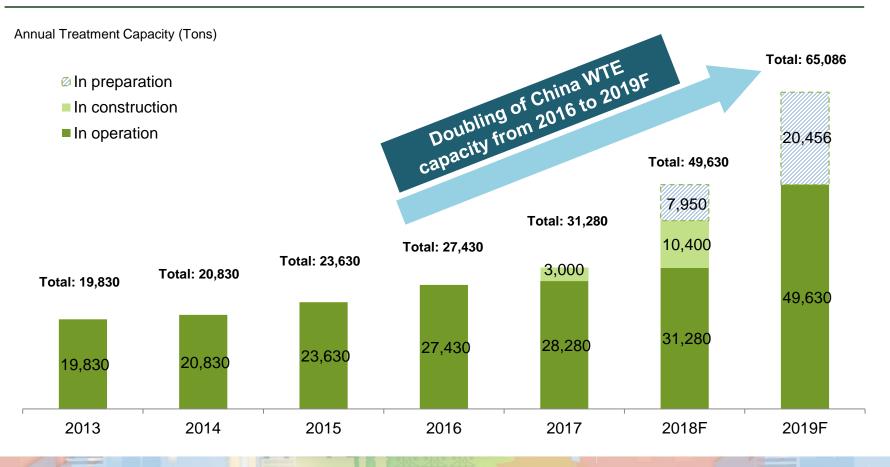


### **Capacity Growth Trajectory**



- ✓ Increase waste treatment capacity
- ✓ Achieve growth organically or through acquisitions

#### Future waste treatment capacity and targets



### **Proposed Share Placement**



Details of Proposed Share Placement	
Subscriber	Harvest Global Dynamic Fund SPC acting on behalf of and for the account of Harvest Environmental Investment Fund SP
Issue Price	S\$0.50
Placement Shares	214 million new ordinary shares
Net Proceeds	Approximately S\$106.9 million
Equity interest of Subscriber Post-Placement	Approximately 14.91%

#### Rationale

- To finance the ongoing technical upgrade of eight of the Group's WTE facilities in the PRC which when completed will:
  - Expand the waste treatment capacity by approximately 5,000 t/d
  - Reduce emission levels and proportion of coal used
- In view of the high capital commitment of this technical upgrade, the proposed subscription also enables the Group to:
  - Diversify financial and capital resources and better manage capital expenditure requirements for the expansion of its pipeline WTE projects
  - Allows it to focus on expanding its WTE pipeline further as well as adding other verticals in the WTE industry
  - Improve gearing and enhance borrowing capacity



## **USD200** million Bond Issuance



Bond Issuance Details			
Format	Reg S only		
Company's rating	S&P: BB (Stable); Moody's: Ba2 (Stable)		
Ranking	Senior (unsecured)		
Coupon	6%, semi-annual payment		
Maturity	2020		
Issue amount	US\$200 million		
Place of listing	Singapore Exchange		
Sole global coordinator and bookrunner	Morgan Stanley & Co. International plc		
Guarantors	Lamoon Holdings Limited Outstanding Mode Developments Limited Prime Gain Investments Limited (鴻盈投資有限公司) Gevin Limited		

Highlights

- ✓ **First international bond issuance** for Chinese WTE industry player
- Strong credit rating of Ba2 by Moody's and BB by Standard & Poor's
- First time a Chinese WTE industry player has attained an international credit rating
- 4-times oversubscription rate, with strong interest from large number of international investment institutions
- 79% of subscription from fund management companies
- ✓ Issuance proceeds to be used for **overseas expansion**





Acquisition Details				
Acquisition target	100% equity interest of Hangzhou Zhenghui Construction Engineering Co., Ltd.			
Consideration	RMB15,976,700 (equivalent to approximately S\$3,336,500)			

#### About Hangzhou Zhenghui

 Hangzhou Zhenghui is engaged in the provision of engineering, design, construction, project management, and engineering-related consultancy services within and outside the PRC.

#### **Rationale for Acquisition**

- Forms an in-house platform with integrated design, engineering and construction capabilities, which would assist to mitigate design, construction and engineering risks, increase efficiency and reduce costs.
- Serves as a platform for further technical-related collaboration with third parties both within and outside the PRC, which would help raise overall standards with the Group's technology, equipment and system.



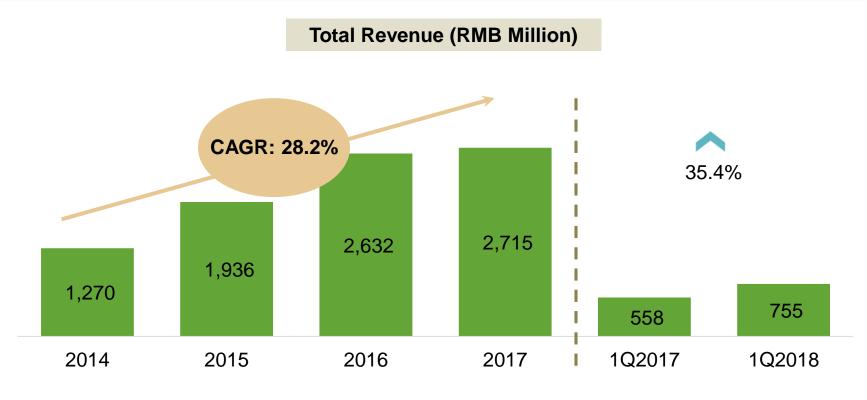


## **Financial Highlights**



#### **Significant Revenue Growth Achieved**





For the financial year ended 31 December

For the quarter ended 31 March

**Higher revenue growth of 35.4% y-o-y recorded in 1Q2018** compared to 1Q2017 mainly attributable to the significant increase in revenue from BOT Construction projects

### **Significant Revenue Growth Achieved**



34.7%

Q ended 31 Mar

35

53

2017 102017 102018

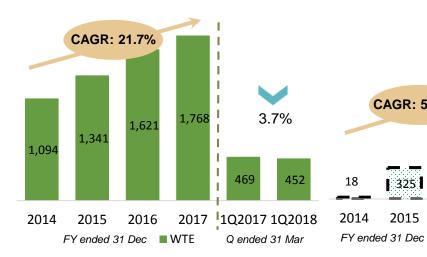
#### Segment Revenue (RMB million)

664.3%

2017 1Q2017 1Q2018

BOT Construction Q ended 31 Mar

268



#### Weaker WTE business performance due to:

- Continued expansion and upgrading of eight power plants in the first half of 2018 with a decrease in amount of waste treated
- This offset increased steam and electricity supply from Zhuji Bafang, as well as waste collection and transportation revenue from Lucknow

#### Stellar BOT Construction Services performance due to:

728

2016

CAGR: 536.0%

325

2015

- Expansion of Wenling, Gaomi and Yinchuan as well as strong progress of the India projects
- Financial income from service concession agreements rose 41% to RMB 7.6 million in 1Q2018 from RMB 5.4 million in 1Q2017

#### Weaker EMC business performance due to:

283

2016

391

EMC

CAGR: 38.8%

273

2015

FY ended 31 Dec

147

2014

EMC Revenue, which is recognised based on contracted profit sharing percentage, has decreased



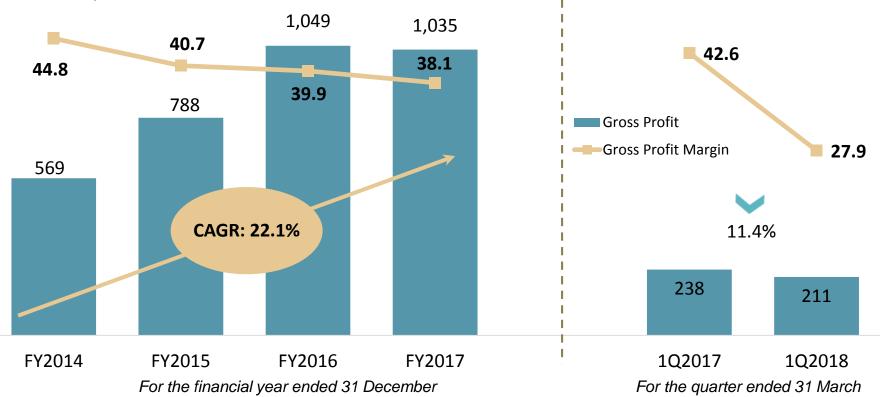
### **Stable Profitability**



**Gross Profit & Gross Profit Margin**<sup>(1)</sup>

(RMB million)

Note:



1Q2018 gross profit decreased mainly because:

 Gross profit from WTE segment (excluding BOT Construction) fell 21.2% to RMB148 million, offset by a significant improvement in gross profit in the BOT Construction segment

(1) Gross profit margin calculated for WTE business (excluding revenue from construction services provided, project technical and management and EMC business)

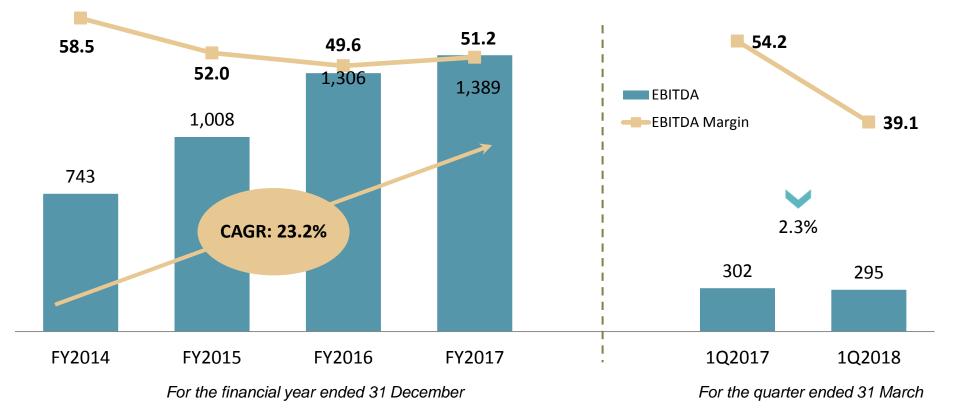
### **Stable Profitability**



EBITDA<sup>(1)</sup> & EBITDA Margin

(RMB million)

Note:

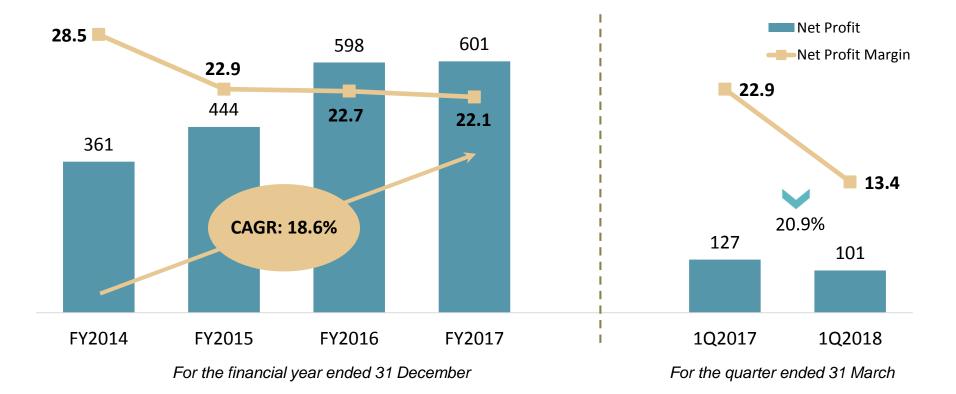


### **Stable Profitability**



Net Attributable Profit & Profit Margin

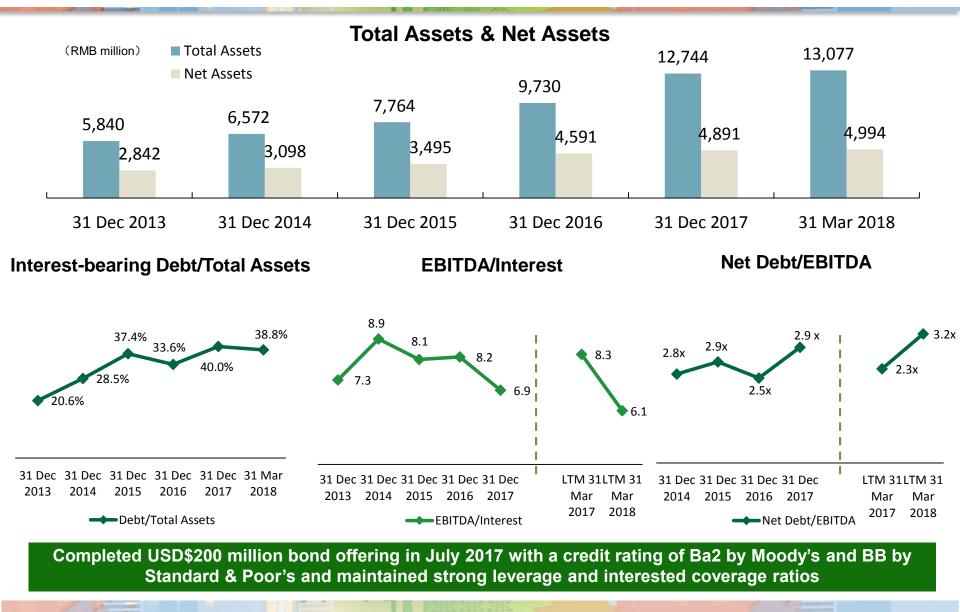
(RMB million)



While gross profit decreased, other gains and losses increased 135.5% y-o-y from RMB 26.13 million to RMB 61.53 million in 1Q2018 mainly due to the increase in foreign exchange earnings and Shijiazhuang WTE facility sludge disposal income.

### **Healthy Capital Structure**

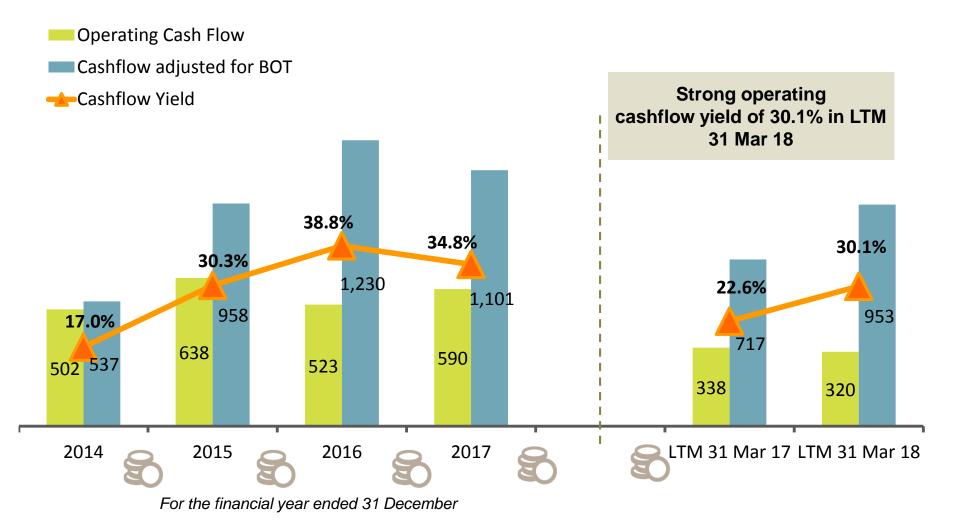




## **Strong Operating Cash Flow**



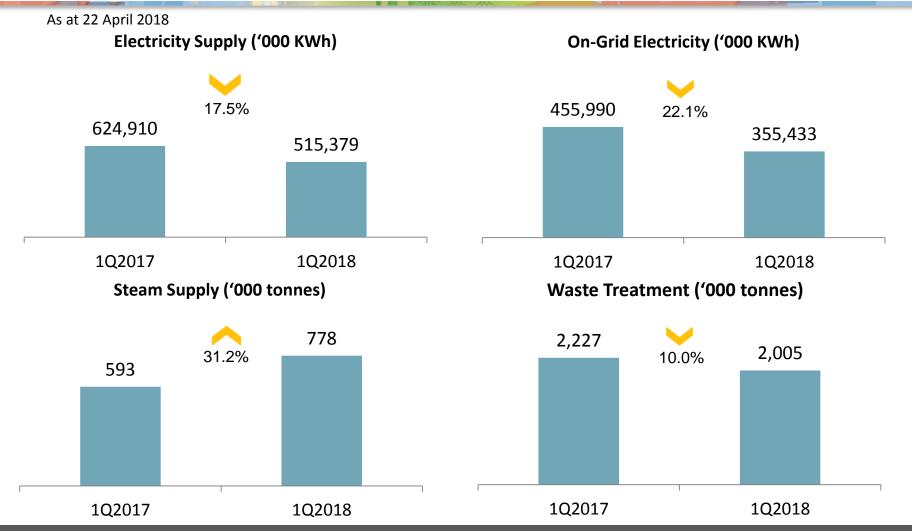
(RMB million)



<sup>1</sup> Current market cap of S\$659.7 million and exchange rate of S\$1 : RMB4.80 as at 19 April 2018

### **Operational Analysis**





In order to cope with the rapidly increasing demand for waste disposal in the future, the Group started upgrading and expanding some of its WTE facilities in the second half of FY2017 and has continued to do so for the first half of 2018. These have marginally affected overall revenue growth of the WTE and electricity supply capacities

#### **Rewarding Shareholders**





Our Directors intend to declare dividends of **not less than 50%** of our net profits attributable to our shareholders for FY2017

**9.4%** Dividend Yield

Name of dividend	Final
Dividend type	Cash
Dividend amount per share (Singapore cents)	5.10 cents per ordinary share <sup>1</sup>
Dividend Yield	9.4% <sup>2</sup>
Tax rate	Tax exempt (one-tier)
Date payable	Subject to approval by shareholders at forthcoming AGM

\* Investors should note that all the foregoing statements, including the statement on the Proposed Dividend, are merely statements of our present intention and do not constitute legally binding statements in respect of our future dividends which may be subject to modification (including reduction or non-declaration thereof) in our Directors' sole and absolute discretion. Investors should not treat the Proposed Dividend or the dividends declared and paid by our subsidiaries as an indication of our Group's future dividend policy. No inference should be or can be made from any of the foregoing statements as to our actual future profitability or ability to pay dividends.

<sup>1</sup> Based on the exchange rate of SGD1.00: RMB4.80 as at 19 April 2018

<sup>2</sup> Based on the share price of S\$0.540 as at 19 April 2018



## **Operational Highlights**



#### **Strong Management Team**

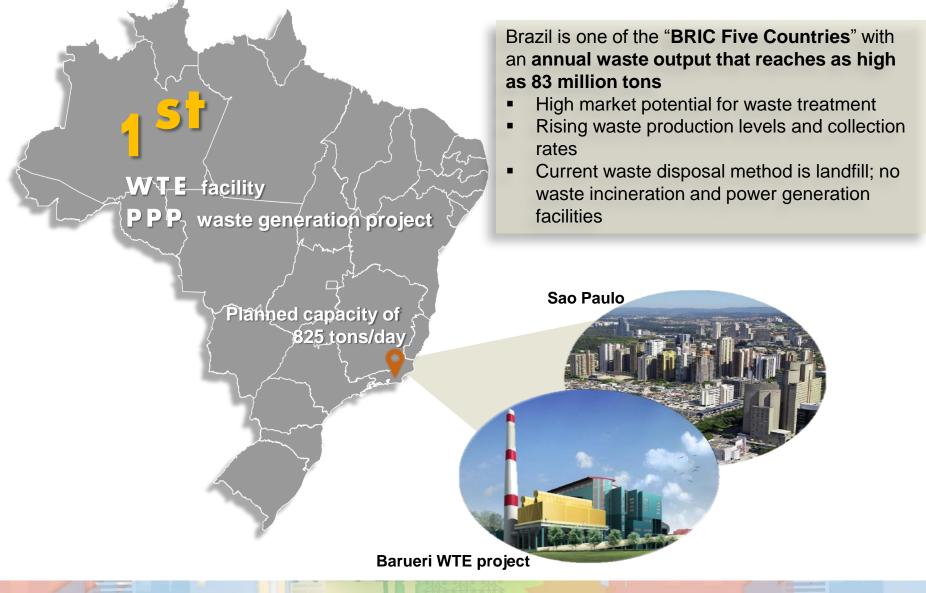




Key management team members have more than 15 years of industry experience

#### **Latest Debut in Latin America**





# Extensive Portfolio in the PRC with Growing Overseas Footprint





Total

India Projects				
No. of Projects	Project Category	Capacity		
3	Preparation	3,271 tons/day		
Total		3,271 tons/day		

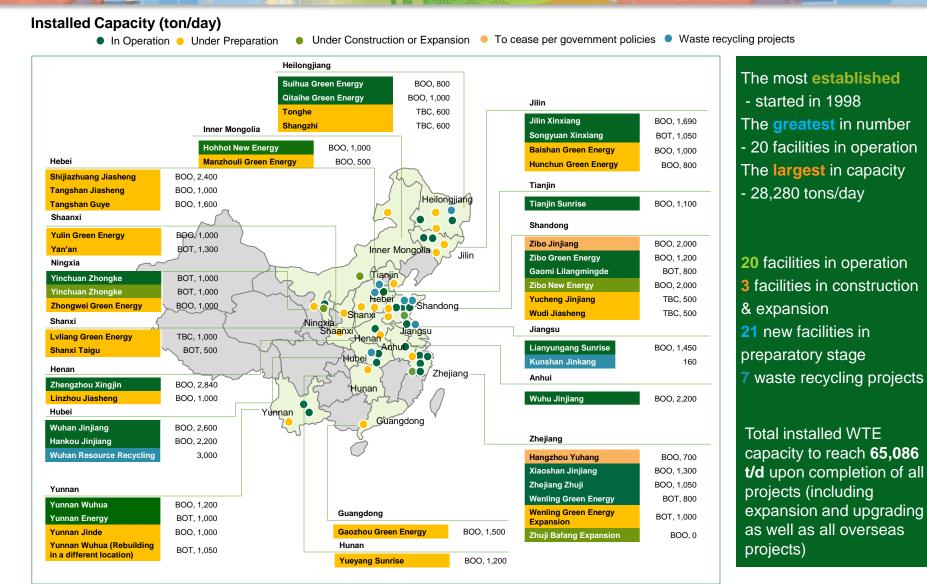
No. of projects **Project Category** Capacity 20 Operational 28,280 tons/day **Construction & Expansion** 3 3,000 tons/day 8 Upgrading 5,000 tons/day 21 Preparatory (existing) 21,550 tons/day Resource recycling 3,160 tons/day 7 (additional capacity)

As at 22 April 2018

60,990 tons/day

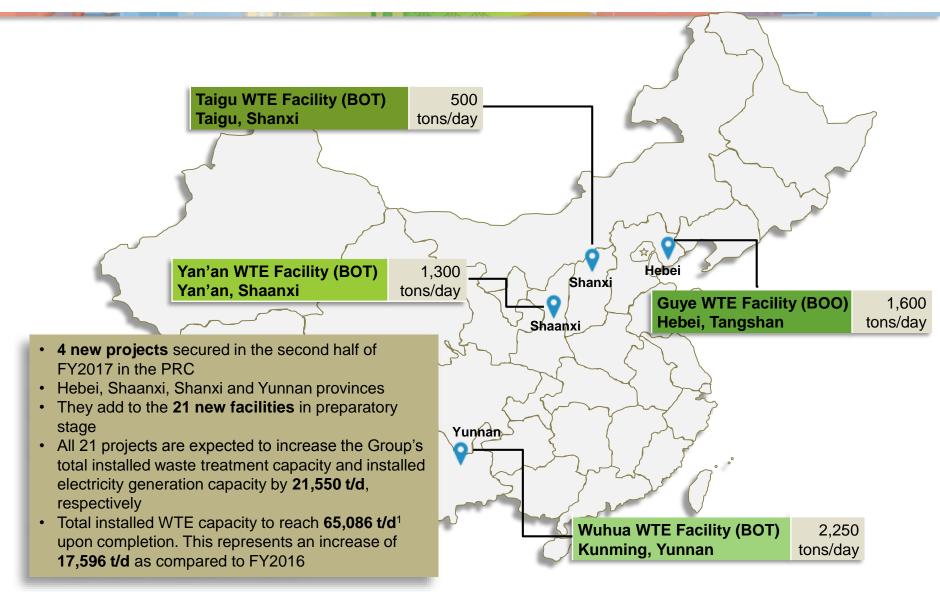
#### **Our Extensive Footprint in China**





#### **Latest Projects Secured in China**





## **Building a presence in India**



Cor	nstruction to begin in 1H2	018	Luck	now int	egrated wast	te management project
			Location L		Lucknow City, the capital city of Uttar Pradesh	
	G	Gurgaon project			104 acres 1,500 tons/day	
		eparatory stage)				
		Lucknow	Busine Model		BOT model (O year concessio	perational from April 2017; 30- on period)
Gurgaon	integrated waste management pro	oject (In Prepar	atory stage	e; collec	tion	
ocation	Gurgaon, Haryana		in operatio es in prepa		eration -	
rea	27.83 acres	53-3 W		~ ( )	or integrated	waste management project
apacity	1,165 tons/day		لم کم 💁	Locatio		
Business BOT model (Operational from June 2019; Model 20-year concession period)		1 months		Area	63.75 ac	•
			r project	Capaci	ty 606 tons	/day
oject Sco Collecti	pe: on and transportation of MSW from	(In Preparator	y stage)	Busine Model		del (Operational from Feb 2020 concession period)
househ	olds and businesses	S Sal	Waste Sub	sidy(II	NR)	On-grid electricity (INR)
	atment and mechanical separation c ent of biodegradable waste by comp		1604			7.5
<ul> <li>Recycling and sale of waste materials</li> <li>Production and sale of Refuse Derived Fuel</li> <li>Power generation from combustion of Refuse</li> <li>Derived Fuel</li> </ul>		el 1 ise V	NTE Facilit 1000INR/to NTE Facilit 333INR/ton	in ty in ope	operation:	10.91 (fixed electricity price: 7.05INR/kWh & government subsidy: 3.86INR/kWh)
•	on and maintenance of a landfill for aste components	residual 1	1071			6.39 (Average price)
		-				INR = Indian Ru

### **Newly Secured Projects in Preparation**



	Project Name	Location	Designed Capacity (tons/day)	Model	Latest Progress
Ne	Guye WTE Facility	Hebei, Tangshan	1,600	BOO	TBC
wly Secu Pre	Taigu WTE Facility	Taigu, Shanxi	500	BOT	TBC
ured Proparation	Yan'an WTE Facility	Yan'an, Shaanxi	1,300	BOT	TBC
Newly Secured Projects in Preparation	Wuhua WTE Facility	Kunming, Yunnan	2,250	BOO	Construction expected to commence 1H2018
		Total Capacity	5,650		

### **Status of Projects under Construction**



	Project Name	Location	Designed Capacity (tons/day)	Model	Latest Progress
Construction	Zibo New Energy	Linzi, Shandong	2,000	BOO	Trial operations to commence by 2Q2018
ହ	Yinchuan Zhongke (expansion)	Yinchuan, Ningxia	1,000	BOT	Trial operations to commence by 2Q2018
Expansion Updates	Zhuji Bafang (expansion)	Zhuji, Zhejiang	0	BOO	Trial operations to commence by 3Q2018
		Total Capacity	3,000		

Note: "BOO" means build-own-operate and "BOT" means build-operate-transfer

### **Overview of Projects in Preparation in China**



	Project Name	Location	Designed Capacity (tons/day)	Model
	Yueyang Sunrise WTE Facility	Yueyang, Hunan Province	1,200	BOO
	Baishan Green Energy WTE Facility	Baishan, Jilin Province	1,000	BOO
	Linzhou Jiasheng WTE Facility	Linzhou, Henan Province	1,000	вот
	Yunnan Jinde WTE Facility	Pu'er, Yunnan Province	1,000	BOO
	Zhongwei Green Energy WTE Facility	Zhongwei, Ningxia Hui Autonomous Region	1,000	BOO
	Gaozhou Green Energy WTE Facility	Gaozhou, Guangdong Province	1,500	BOO
_	Hunchun Green Energy WTE Facility	Hunchun, Jilin Province	800	BOO
	Yulin Green Energy WTE Facility	Yulin, Shaanxi Province	1,000	BOO
re	Shijiazhuang Jiasheng WTE Facility	Shijiazhuang, Hebei Province	2,400	BOO
Da	Manzhouli Green Energy WTE Facility	Manzhouli, Inner Mongolia Autonomous Region	500	BOO
In Preparatory Stage	Tangshan Jiasheng WTE Facility	Tangshan, Hebei Province	1,000	BOO
ğ	Luliang Green Energy WTE Facility	Luliang, Shanxi Province	1,000	твс
<	Tonghe WTE Facility	Tonghe, Heilongjiang Province	600	твс
ta	Shangzhi WTE Facility	Shangzhi, Heilongjiang Province	600	твс
e e	Yucheng Jinhang WTE Facility	Shandong Province	500	твс
	Wenling Green Energy expansion project	Taizhou, Zhejiang Province	1,000	вот
	Wudi Jinhuan New Energy WTE Facility	Wudi, Shandong	1,000	вот
	Yan'an Guojin WTE Facility	Yan'an, Shaanxi Province	1,300	вот
	Tangshan Jinhuan WTE Facility	Tangshan, Hebei Province	1,600	воо
	Wuhua WTE Facility	Kunming, Yunnan Province	1,050 (Post-Rebuilding Additional Capacity)	воо
	Taigu Zhaneng WTE Facility	Taigu County, Shanxi Province	500	вот
		Total Capacity:	21,550	



Large-scale technical upgrading project involving some of CJE's presently operating WTE facilities when completed will significantly expand WTE capacity, increase operational efficiency, reduce emission levels and proportion of coal used

As at 31 March 2018, 8 WTE projects undergoing upgrading Upon completion, **total capacity increase = 5,000 t/d** 



- Carried out in stages to minimise disruption
- Total CAPEX = Approximately RMB 1 billion
- Waste management investment of 200,000 yuan/ton, much lower than an investment in a power plant



## **Growth Strategy**



### In the future, we will ...



#### **1. Maintain leading market position**

- Expanding waste treatment capacity of existing facilities
- Through organic and inorganic growth opportunities

#### 4. Expand internationally

- Seeking project opportunities from the 'One Belt One Road' Initiative
- Specific focus on Southeast Asia and other developing countries
- Enhancing our brand image and international recognition

## 2. Continuously improve technical capabilities

- Adopting advanced pre-treatment technologies from Europe, in synergy with our own
- Enhancing operating efficiency and reduce emissions at our WTE facilities

## 3. Diversifying in the WTE value chain

- Expanding our WTE business to related areas such as sludge treatment
- Growing our EMC and third party project management businesses

**锦江环境** JINJIANG ENVIRONMENT 中国垃圾发电产业引领者



### 1. Maintain Leading Market Position

3 main strategy pillars for capacity expansion and growth

Increase the capacity of waste treatment in existing facilities, and pursue organic growth

## Enter underpenetrated regions and introduce CFB

- CFB technology suitable for newer, less developed markets where municipal solid waste has low calorific value and high moisture content
- Enhance brand recognition by local governments in new markets

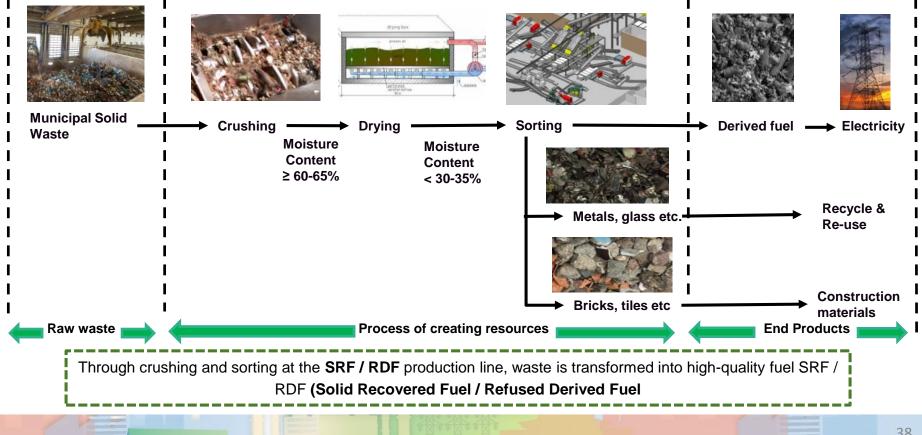




### 2. Continuously improve technical capabilities

- Introduce advanced pre-treatment technology from Europe, coupled with our own R&D
- Raise operating efficiency and reduce emissions at our WTE facilities
- > Improve operational efficiency through Moving Grade Technology and its related technology 5 projects in preparation will adopt this technology

### Waste Pre-treatment Procedures





### 3. Diversifying in the WTE value chain

- Expand the scope of WTE business to the relevant areas
- Further develop EMC and third-party project management business

### Potential diversification areas for WTE

### 1. Turning waste into resources

### > Benefits from waste recycling projects

- Taps opportunities in rising waste amount in various markets
- Enhances quality of waste sent for WTE conversion
- Adds to CJE's total waste treatment capacity

### > Currently,

### 3 waste recycling projects under construction:

- Kunshan Jinkang Environmental Technology Project
- Zibo Green Energy Gaoqing Project
- Suihua Green Energy Lanxi Project

### 3 waste recycling projects under preparation:

- Shijiazhuang Jiasheng Wuji Project
- Shijiazhuang Jiasheng Gaocheng Project
- Wuhan Resource Recycling Project

### 1 waste recycling project completed:

Zibo Green Energy Zichuan Project

### 2. Sludge Treatment

- 2 current municipal sludge treatment projects (Anhui Wuhu, Zhejiang Wenling); total capacity of 500 tons / day
- Shijiazhuang sludge treatment project:
  - Under construction capacity: 50 tons/day
  - In preparation for future construction to 700 tons/day



### 3. Animal Carcass Treatment

In 2014, invested in Wenling City's animal carcass treatment project; planned treatment capacity of 5 tons of treated carcass per day (1500 tons/year)





### **EMC**

- The contract energy management business is a useful complement to the waste incineration power generation business, which brings business and operational synergies and adds to the company's management experience and expertise in the energy sector
- EMC business has higher profit margins, helps achieve business diversification, from investment and operations into services
- > As at 22 April 2018, 25 energy contracting projects have been implemented, of which 20 projects have achieved energy savings, and 5 projects expected to achieve energy savings in 2018; 25 technological advisory projects have been completed

### 2018 pipeline new contracts

### **EMC Projects** Project Project Status Status 1 1 Wuhu Power Plant residual heat removal and recovery Implementing Consulting on steam turbine equipment selection for Zhuji Bafang project Implementing project 2 Consulting on steam turbine equipment selection for Shijiazhuang project Implementing 2 Jiangsu kitchen cleaning and waste sewage treatment project Implementing 3 Consulting on steam turbine equipment selection for Yinchuan Power Plant project Implementing 3 Zhuji Bafang Power Plant water recycling, residual heat Planning 4 Inspection of steam turbine for Gaomi Power Plant Implementing utilisation, energy-saving project 5 Consulting on steam turbine equipment selection for Wenling Power Plant expansion Implementing 4 Inner Mongolia Jinlian aluminium residual heat utilisation, Planning project energy-saving project 6 Consulting on steam turbine equipment selection for Tangshan project Implementing 5 Changchun Power Plant boiler flue gas and residual heat Planning recovery, energy-saving project 7 Linzhou project steam turbine professional equipment technology selection advice Planning 6 Zhuji Bafang Power Plant air compressor energy-saving Planning 8 Consulting on steam turbine equipment selection for Jiangxi Jingsheng project Implementing project 9 Consulting on steam turbine equipment selection for Sanmenxia project Implementing 7 Xing'an Chemical works energy-saving plant transformation Planning project 10 Consulting on steam turbine equipment selection for Guizhou Jinning project Planning 8 Lianyungang Power Plant steam pump energy-saving project Implementing 11 Consulting on steam turbine equipment selection for Baishan project Planning 9 Wuhu Power Plant air compressor energy-saving project Completed 12 Consulting on steam turbine equipment selection for Anhui Chaohu project Implementing Completed 10 Tianjin Power Plant air compressor energy-saving project 13 Consulting on Phase 1 of R32 and PTFE for Hangzhou Zhenghui project Completed 14 Consulting on CIGS project Completed Consulting on for captive power plant, substation for Hangzhou Zhenghui project 15 Completed

### Technical services and consulting contracts



### 4. Expand internationally

- > Seeking project opportunities from the 'One Belt One Road' Initiative
- Focusing on Asia and other developing countries
- Improve brand image and international reputation

### Market Development in Asia and other developing countries

- With the internationalisation of its WTE business as the next milestone goal, the Group will ride on the PRC's "One Belt, One Road" initiative, and prioritise its expansion in Asian countries (such as Indonesia, Vietnam, Malaysia and Singapore) and other developing countries.
- Asian countries and other developing countries have waste characteristics similar to China (low calorific value) giving our differential-density CFB technology an advantage.
- > We have developed relevant capabilities and have proven that we can make our technology adaptable for the processing and management of other types of waste.
- > Dedicated division working on overseas expansion.
- > Currently conducting research on the feasibility of potential WTE projects in Indonesia and Vietnam.
- Company's long-term goal is to be a world-class waste energy management company.

### Jinjiang's plans in India's WTE market

- Acquired Ecogreen Energy, as a wholly owned subsidiary, to develop WTE projects in India and bid for WTE projects
- > Actively explore more WTE projects in India
- Secured 3 projects in India so far in 2017

### Development opportunities in India

### First Foray into Latin America

- Agreed to invest for a 51% stake in a Brazilian WTE company in April 2018
- Planned WTE capacity of 825 t/day
- First WTE and first Public-Private-Partnership WTE project in Brazil
- > Promote our CFB technology in India and establish the first WTE plant in India using our CFB technology
- > Boost performance of our domestic engineering business through the WTE EPC contract
- Become the first Chinese company to develop and operate a WTE project in India



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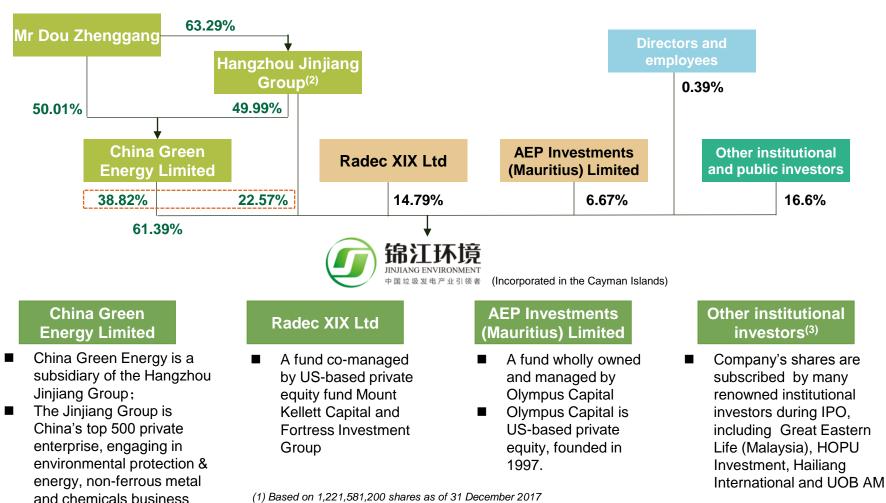
# Appendix



# Strong Shareholding Structure



### Strong shareholder background provides firm support for company's development<sup>(1)</sup>



(1) Based on 1,221,581,200 shares as of 31 December 2017

(2) Through wholly-owned subsidiary

(3) Based on SGX's announcement on 3 August 2016



### Information updated as at 31 March 2018

Name of WTE Facility	Project Location	Project Model	Actual Total Investment Amount (RMB million)	Constructed or Acquired	Percentage of Ownership by our Company	Total Designed Treatment Capacity (t/d)	Installed capacity as of Latest Practicable Date (t/d)	Electricity Supply Fee (RMB / kWh)	Waste Treatment Fee (RMB per ton)	Estimated / Actual Date Operation Commenced	Concession Period
Zhengzhou Xingjin WTE Facility	Zhengzhou, Henan Province	BOO	436.42	Built	100%	2,840	2,840	0.51	50.00	Sep 2002	N.A.
Wuhu Jinjiang WTE Facility	Wuhu, Anhui Province	BOO	578.15	Built	100%	2,200	2,200	0.53	45.00	Jan 2003	N.A.
Xiaoshan Jinjiang WTE Facility	Hangzhou, Zhejiang Province	BOO	322.04	Built	90%	1,300	1,300	0.65	80.00	Jul 2007	30 years (from Jul 2007)
*Zibo Jinjiang WTE Facility	Zibo, Shandong Province	воо	291.09	Acquired in February 2006; WTE facility built by the Group	100%	2,000	2,000	0.66	35.00	Jul 2007	25 years (from Jul 2007)
**Kunming Jinjiang WTE Facility	Kunming, Yunnan Province	BOO	364.17	Acquired in February 2006; WTE facility built by the Group	80%	1,200	1,200	0.66	90.00	Jan 2008	30 years (from Jan 2008)

### N.A. – Not Applicable

\*Operations may be required to cease due to the local land planning and adjustments, but currently still in operation. Specific shutdown period will be determined by the progress of new projects

\*\* Facility to be relocated within Kunming; the Group is currently seeking relevant government approvals. New facility expected to have an installed WTE capacity of 2,250 t/d > current capacity of 1,200 t/d. Currently in operation with specific shutdown period to be determined by progress of new projects.

The above projects are based on current operations of the Group and government negotiations on compensation as well as shut down period



Name of WTE Facility	Project Location	Project Model	Actual Total Investment Amount (RMB million)	Constructed or Acquired	Percentage of Ownership by our Company	Total Designed Treatment Capacity (t/d)	Installed capacity as of Latest Practicable Date (t/d)	Electricity Supply Fee (RMB / kWh)	Waste Treatment Fee (RMB per ton)	Estimated / Actual Date Operation Commenced	Concession Period
Wuhan Jinjiang WTE Facility	Wuhan, Hubei Province	воо	438.79	Constructed	100%	2,600	2,600	0.66	60.00+31.17	Jun 2010	30 years (from 9 Oct 2009)
Hankou Jinjiang WTE Facility	Wuhan, Hubei Province	BOO	445.90	Constructed	100%	2,200	2,200	0.65	60.00+31.17	Dec 2010	40 years from 9 Apr 2010
Lianyungang Sunrise WTE Facility	Lianyungang, Jiangsu Province	воо	432.79	Acquired in February 2011	100%	1,500	1,450	0.65	53.60	Apr 2010	30 years from 21 Oct 2010 <sup>(6)</sup>
Jilin Xinxiang WTE Facility	Changchun, Jilin Province	воо	559.54	Acquired in September 2011	80%	1,690	1,690	0.74	41.00	Sep 2004	N.A.
Yunnan Energy WTE Facility	Kunming, Yunnan Province	вот	310.62	Constructed	89%	1,000	1,000	0.66	90.00	Jun 2011	30 years from Jun 2011

### N.A. – Not Applicable



Name of WTE Facility	Project Location	Project Model (BOO/ BOT)	Actual Total Investment Amount (RMB million)	Constructed or Acquired	Percentage of Ownership by our Company	Total Designed Treatmen t Capacity (t/d)	Installed capacity as of Latest Practicable Date (t/d)	Electricity Supply Fee (RMB / kWh)	Waste Treatment Fee (RMB per ton)	Estimated / Actual Date Operation Commenced	Concession Period
Yinchuan Zhongke WTE Facility	Lingwu, Yinchuan, Ningxia Hui Autonomous Region	вот	365.00	Acquired Yinchuan Zhongke in June 2011; WTE facility constructed by our Group	100%	1,000	1,000	0.65	55.00	Jan 2014	30 years (from 29 Oct 2013)
Tianjin Sunrise WTE Facility	Tianjin	воо	419.68	Acquired in December 2013	100%	1,100	1,100	0.65	96.00 (up to 600 t/d) 55.00 (above 600 t/d)	May 2008	30 years (from Apr 2008)
Zibo Green Energy WTE Facility	Zibo, Shandong Province	воо	394.56	Constructed	100%	1,200	1,200	0.66	35.00	Sep 2014 (trial operation)	30 years (from Sep 2014)
Suihua Green Energy WTE Facility	Suihua, Heilongjiang Province	BOO	300.0	Constructed	100%	800	800	0.65	35.00	Jul 2015 (trial operation)	30 years (from Jul 2015)
Songyuan Xinxiang WTE Facility	Songyuan, Jilin Province	BOT	356.0	Constructed	90%	1,050	1,050	0.65	29.70	Jul 2016	30 years (from Jul 2016)
Zhuji Bafang WTE Facility	Zhuji, Zhejiang Province	воо	600.0	Acquired	100%	1,050	1,050	0.65	90.00+35.00	Apr 2005	30 years (from 29 Aug 2012)
Wenling Green Energy WTE Facility	Wenling, Zhejiang Province	вот	370.0	Constructed	100%	800	800	0.65	46.00	Feb 2016	29 years (from 19 Feb 2016)



Name of WTE Facility	Project Location	Project Model (BOO/ BOT)	Actual Total Investment Amount (RMB million)	Constructed or Acquired	Percentage of Ownership by our Company	Total Designed Treatment Capacity (t/d)	Installed capacity as of Latest Practicable Date (t/d)	Electricity Supply Fee (RMB / kWh)	Waste Treatment Fee (RMB per ton)	Estimated / Actual Date Operation Commenced	Concession Period
Gaomi Lilangmingde	Gaomi, Shandong Province	вот	350	Acquired	100%	800	800	0.65	62.00	Jan 2017	30 years
Qitaihe Green Energy WTE Facility	Qitaihe, Heilongjiang Province	воо	340	Constructed	100%	1,000	1,000	0.65	35.00	May 2017	30 years
Hohhot Jiasheng New Energy Co., Ltd.	Hohhot, Inner Mongolia	воо	-	Constructed	100%	1,000	1,000	0.65	60.00	Nov 2017	24 years

# China's WTE industry Benefitting from New Policies



More opportunities backed by major environmental protection laws and regulations issued to strengthen the incineration treatment of municipal waste The State Council's 13th Five-Year Plan eco-National Development and Reform Commission and the Ministry of environmental protection plan Housing and Urban-Rural Development issued the "13th Five-Year national urban solid waste treatment facilities construction plan". Quantified main objectives and indicators Scope of environmental governance and efforts raised to Clear target of 'zero landfill' set for municipalities, cites and unprecedented levels provincial capital cities (built area) in 2020 "13th Five-Year Plan" will accelerate the process and widen Target for urban municipal solid waste incineration capacity to be scope of environmental governance at least 50% of total harmless treatment capacity Paper w.r.t. further strengthening the work of municipal 19th National Congress of the Communist Party of China solid waste incineration" reiterated the basic state policy of environmental protection and the importance of the goal of improving environmental guality, (5 November 2016) promoting the concept that 'green is wealth' **Strengthening Development Setting Goals** Land for WTE projects and facilities to be included in the priority list in urban planning The incineration treatment of municipal waste to be the major technical route of the To encourage the improvement and expansion of existing WTE plants country This favors the continuous increase in Company's business scale and capacity By 2020, 50% of municipal waste to be treated through incineration As the market leader, the Company can capitalize on the growth of the industry during the 13th Five-Year-Plan to achieve development **Clean Incineration** Neighbourhood-friendly To adopt advanced technologies and tighter quality control measures to prevent and control fly ash pollution To centralize control and build facilities that benefit the neighborhood households To establish clean incineration standards and evaluation system by 2017 To turn short-term compensation to long-term sustainable development, and The company implements clean incineration and will gain first-mover advantage achieve mutual gains **Comprehensive Supervision** To strictly manage bidding process and reduce unhealthy competition among bidders To enforce information transparency, make operation & emission data available, and allow the public to monitor Company always bids rationally and promotes healthy competition, and needs to practice more self-discipline (1): Paper No. 227 Jiancheng [2016]. Four ministries are Ministry Housing & Urban-Rural Development, National Development and Reform Commission, Ministry of Land &

Resources and Ministry of Environmental Protection

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# India's WTE Industry Outlook

### **Overview of India's WTE Market**

- Currently, India's annual output of solid waste is 62 million tons, with 43 million tons per year to be collected, 11.9 million tons to be processed, and recycling rate of municipal solid waste at 75% -80%.
  - The amount of waste generated in 2030 will increase from the current 62 million tons to 165 million tons.
- According to official statistics from India, as at June 2016, the total amount of municipal solid waste in India was 154,647 tons (per day), while the treatment rate was only 17.45%
  - Prospects for India's solid waste treatment industry are promising and opportunities abound, with huge growth and investment potential.

### India's water treatment method

Currently in India, the following WTE methods are commonly being used:

- Heat conversion
- Biochemical conversion
- Thermochemical conversion
- Electrochemical conversion

- incentive policies and measures to encourage participation in waste energy generation.
   > On 2 October 2014, the Indian government introduced "Clean India" related regulations.
  - On 5 April 2016, the Indian government amended the municipal solid waste management regulations.

Ministry of New Energy and Renewable Energy launched an industrial and municipal waste energy recovery program and introduced various

- Introduced various price regulations, tax reliefs and and financial subsidies to encourage WTE industry.
- > CFB technology is widely used for municipal solid waste with low calorific value and high moisture content
- Simple incinerator structure, long useful life, low investment outlay
- > CFB technology and RDF technology (Refused Derived Fuel) is highly suitable for standard Indian waste characteristics



**Government Policy** 





# **Brazil's WTE Industry Outlook**

### **Overview of Brazil's WTE Market**

- > Brazil has a total population of 206 million and is the 5<sup>th</sup> largest country in the world
- In 2015, Brazil generated approximately 83 million tons of MSW according to the Brazilian association of public cleaning and special waste (ABRELPE, 2016)
- The Southeast and northeast are most populous and these two regions together produce more than 74% of all MSW generated in Brazil (ABRELPE, 2016)
- In 2016, within the WTE industry, Brazil recorded a market revenue value of about US\$816.3 million among the five BRIC nations, based on a 2017 waste management BRIC industry guide released earlier in 2018. This market value is expected to rise to US\$866.0 million in 2021
- Prospects for Brazil's waste treatment industry are therefore promising and opportunities abound, with huge growth and investment potential

### Brazil's waste treatment method

- Brazil is landfill centric in terms of its waste treatment method
- Collection models are therefore built around the functionality and location of those landfills
- Currently, there are no waste incineration and power generation facilities.

- Brazilian government has gradually restricted the straightforward landfilling of waste,
- Encouraged the development of renewable energy in its national plan on new energy development
- Included WTE generation in the promotion of new methods and technologies
- > CFB technology is widely used for municipal solid waste with low calorific value and high moisture content
- Simple incinerator structure, long useful life, low investment outlay
- > CFB technology and RDF technology (Refused Derived Fuel) is highly suitable for standard Brazilian waste characteristics





### **Government Policy**



# **Thank You**

