



## MAINLAND UTILITY BUSINESSES

# Green

Total gas sales increased to a record-high of about 19,500 million cubic metres, an increase of 14 per cent over the previous year, while customer accounts exceeded 25 million, an increase of over 2 million.

Nearly 30,000 residential combi boilers and around 20,000 residential gas clothes dryers, a new appliance in this market, were sold during the year.



# City Gas

+ Good progress was made on the plant construction of our Hua Yan Water pilot project to convert food waste into gas and solid fuel. It is targeted for commissioning by the end of 2018.

+ The Mia Cucina kitchen cabinet brand expanded to include our Total Kitchen Solution, which offers a complete portfolio of kitchen equipment to complement the cabinets sold to property developers and individual home owners.

# MAINLAND UTILITY BUSINESSES

In the improved economic environment of 2017, we aggressively pursued opportunities to expand our city-gas and related businesses on the mainland. This has not only helped us to secure continued growth in this market but will also contribute to the Chinese government's vision of creating a greener China.



Foshan Gas Group Co., Ltd, an associate of Towngas China, was listed on the Shenzhen Stock Exchange in November 2017.

## City-gas Operations

During the year, we had 131 city-gas projects in 23 provinces, autonomous regions and municipalities in mainland China. The number of customers served during this period amounted to 25.38 million, an increase of over 2 million from the previous year.

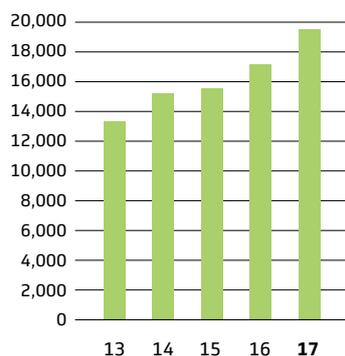
In 2017, the economy of mainland China rebounded to achieve a GDP growth rate of 6.9 per cent, which was 0.2 per cent higher than the year before and 0.4 per cent above the government's target for the year. This, together with the recovery of the renminbi and rise in commodity and oil prices, had a positive impact on our city-gas business.

The growth of our city-gas business has in large part been due to the Chinese government's policy, outlined in its Thirteenth Five-Year Plan, to reduce carbon intensity by 40 to 45 per cent from a 2005 baseline by the year 2020, with a 60 per cent ceiling by 2030. At the First Plenary Session of the Nineteenth Congress in October 2017, the government gave further support to environmental protection by pledging to accelerate the development of energy-saving, emission reduction,

waste-to-energy and recycling industries, which aligns well with the Group's gas business strategy.

This is to be achieved by replacing coal with cleaner fuels such as natural gas. In recent years, the amount of natural gas consumed on the mainland has grown substantially and is projected to continue rising. In 2017, total gas consumption was 237 billion cubic metres. By 2020, it is estimated to reach 360 billion cubic metres and, by 2030, up to 480 billion cubic metres.

## China Joint Ventures Gas Sales (million m<sup>3</sup>)



The Chinese government's strong directive to switch to natural gas led to gas sales of about 19,500 million cubic metres in total volume for our city-gas projects during the year, an increase of 14 per cent over 2016.

During the year, we took the further step of exploring new gas applications by promoting distributed energy systems, which deliver higher energy efficiency and will also contribute to the country's efforts to reduce its reliance on coal-fired power. These distributed energy systems include gas-fired power generators coupled with district cooling and heating networks. Generators using gas are environmentally-friendly, lower emitting and far more efficient than coal (80 per cent vs 60 per cent thermal efficiency).

In 2017, we established Towngas Energy Investment (Shenzhen) Company for managing our distributed energy system and central heating projects. Seven

direct investment projects started during the year, initially in regions of the east, north, and northeast China.

We launched strategic marketing campaigns targeted at commercial customers, particularly the restaurant industry, to encourage the switch to piped gas from bottled liquefied petroleum gas, a move that not only significantly reduces fuel costs but also enhances safety. In addition, we promoted the use of gas-powered hot water systems in the commercial market, including hotels, schools and fitness centres, across the country. During the year, we acquired 18,000 new commercial customers, accounting for 580 million cubic metres of annual gas volume.

We also see enormous potential in the residential market for cost-efficient gas furnaces and space heaters, which are common in areas of the country with cold winters. The growing popularity of gas clothes dryers, especially among China's affluent new middle class, together with the continuing trend towards urbanisation, should lead to a steady growth in average gas consumption per household.

As a company with a long history in Hong Kong, we are transferring our culture to the joint venture companies we partner with. In these collaborative partnerships, we take responsibility for managing project designs, materials and technology as well

as our own consolidated purchasing system to ensure better bargaining power with suppliers in terms of cost and quality. We have been building on our experience, systems, efficiency and customer service, as well as our reputation for safety, quality, and professionalism, for the past two decades in mainland China. With the Chinese government's determination to clean its air, water and soil, we are well positioned to become a green Hong Kong-based company in Greater China in the years ahead.

## Midstream Facilities

We continued to look for opportunities in the midstream natural gas business in 2017. By investing in long-haul pipelines, natural gas imports and gas storage in strategic locations, we hope to secure sufficient supplies of natural gas for our city-gas projects, particularly during peak winter months when gas consumption is high.

In early 2018, we invested in a liquefied natural gas (LNG) receiving terminal and supporting pier project at Huanghua port, Cangzhou, Hebei province. The project will be developed in phases to construct four LNG storage tanks and an uploading pier. It is expected to become a major channel to import LNG into Hebei province after completion, thus offering a new gas source for the province.

To improve air quality, we encouraged the use of natural gas boilers for central heating.



We also made significant progress building new underground gas storage facilities at Jintan in Jiangsu province. These facilities, which were converted from salt caverns, have a total storage capacity of approximately 440 million standard cubic metres. Construction of phase one of this project was completed in January 2018, with a capacity of approximately 140 million standard cubic metres. Phase two of the construction, commencing in the first quarter of 2018, will be to develop a storage capacity of approximately 300 million standard cubic metres. Once in full operation, the project will increase the Group's gas storage capabilities and enable us to enter the gas trading business in future.

### Water Supply and Wastewater Operation

Since 2005, we have been engaged in the water supply and waste water treatment business through our subsidiary, Hong Kong & China Water Limited (Hua Yan Water). As of the end of 2017, this business had invested in or was managing six projects on the mainland, including city water supply, domestic sewage and industrial wastewater treatment projects. These included water supply joint ventures in Suzhou,

Jiangsu province and Wuhu, Anhui province, as well as wholly-owned water supply projects in Zhengpugang Xin Qu, Maanshan and in Jiangbei Xin Qu, Wuhu, both in Anhui province.

Hua Yan Water also operated an integrated water supply and wastewater treatment joint venture project, along with an integrated wastewater treatment joint venture project, for an international electronics firm in Suzhou Industrial Park in Jiangsu province.

During the review period, Hua Yan Water sold 467 million tonnes of water, an increase of 3 per cent over 2016. The Company as of the year end had more than 1.2 million customers.

Taking advantage of its experience in sewage treatment, Hua Yan Water in 2016 branched out into the bio-waste treatment business with a plant that is currently under

construction in Suzhou Industrial Park. This plant, which is another example of our commitment to environmental conservation, will convert food waste to make gas and organic fertiliser using Swedish technology and our own expertise in waste water treatment – the first venture of its kind for the Group. With its commissioning in the fourth quarter of 2018, the plant will be capable of handling 500 tonnes of food waste, green waste and landfill leachate a day for conversion into natural gas, oil products, solid fuel and fertilisers. After this trial project is successfully commissioned, we can extend this model into cities beyond Suzhou, since food waste has become an increasingly serious problem in the country. We are also looking into treating organic landscaping waste and expanding into incinerators and other garbage treatment facilities through Hua Yan Water.

All of these new ventures offer tremendous scope for the Group's business expansion as the Chinese government is eager to convert bio-waste into reusable fuel or materials in line with its commitment to promote green industries.

### Extended Service Businesses

For more than 25 million customers on the mainland, we provide a selection of high quality, contemporary products, ranging from home gas appliances to kitchen furnishings, as well as services such as gas-related insurance policies, convenient payment methods and customer service centres.

### Trusted products

We help fulfil the aspirations of China's rising middle class for a better life with safe, reliable, high quality residential gas appliances under our well-recognised Bauhinia brand. These products include gas stoves, clothes dryers, water heaters and space heating systems. In 2017, we sold 750,000 appliances, accumulating sales of more than 5 million units since the launch of the brand.

In response to the growing demand for more upmarket household products, we launched the Mia Cucina line of cabinets in 2016, as part of our Total Kitchen Solution concept first introduced in Hong Kong. These products



As a result of extensive marketing efforts, our residential gas clothes dryer has become widely accepted in the mainland market.

have been well received by property developers, who signed contracts for more than 2,000 Mia Cucina packages in 2017.

Also in 2017, we had 36 customer centres featuring cabinet displays in various cities as a test of the retail market. These centres serve as a showcase for our cabinets, so that property developers, architects and other customers can experience the concept and quality behind these products directly. Thanks to the importance we place on style, premium materials and quality control, the Mia Cucina brand has won a loyal following on the mainland.

To increase sales of residential combi boilers, we equipped them with a smart temperature control system that enables customers

not only to save energy but to learn about the safety features of space heating systems via the internet.

### Convenient services

Our digital service arm, Towngas Lifestyle, is a one-stop e-commerce platform that provides customers with a wide selection of high quality lifestyle services and products. In addition to over 3,000 types of kitchenware and related merchandise, the platform offers pollution-free cooking ingredients from all over the world as well as seasonal healthy food and user-friendly cooking recipes. To meet the market demand for healthy food, we are also planning to launch a meal delivery service in Suzhou as a pilot programme in collaboration with reliable restaurants.

To build customer loyalty, we launched the Towngas Card as part of our exclusive Towngas Membership Scheme during the year. Our members not only can enjoy various benefits such as health services and lucky draws but also redeem points for special events and featured products. During the year, the number of members reached nearly 1 million.

We continued to offer household gas insurance protection to our residential customers in partnership with China Ping An Property & Casualty Insurance and Huatai Property Insurance. Currently, this business is available through our city-gas projects across 65 cities and has accumulated total premiums of RMB45 million. Aside from household gas insurance, we also launched a comprehensive gas insurance plan for more than 1,000 industrial and commercial customers.

### Marketing promotions

To promote our gas clothes dryers, we make use of online channels, including geolocation advertising on WeChat groups. Additionally, we launched a free clothes drying service at local districts in selected sales markets to change consumer habits and ultimately increase the sales of our products.

We also organise Bauhinia's National Cooking Competition for children every year, a brand-building activity based on the idea of contributing to the community. In 2017, our volunteers brought the finalists and their families to visit children in remote mountain areas and distribute care packages to their families.

### Customer Service

During the review period, we expanded our service and sales network to 255 customer centres across 84 mainland cities, all in convenient, easily-accessible locations.

In serving our more than 25 million customers each year, our employees make over 100 million contacts with them through inquiries, appliance sales and installation, maintenance and hotline calls. Our goal is to leave a positive impression in every customer encounter by providing service that is above the market norm.

Although we have made a great effort to set a high standard of service on the mainland, we believe that we can always improve. During the year, we partnered with a consultancy firm to launch a nationwide customer satisfaction survey to identify areas for improvement. The results of the survey showed that we scored 93 per cent in terms of service excellence – the highest level of customer satisfaction as compared with local water, electricity, transportation and other public utilities. The results of our mystery customer survey also improved by another 5 per cent over the previous year, confirming that we have made a steady improvement in our service standards.

During the year, we upgraded our online service platform, the Virtual Customer Centre (VCC), and included Ganghua Pay, our own transaction platform for online payments. The VCC, which is widely accessible through websites, social media and mobile apps, allows our city-gas companies to offer greater online convenience to their customers. During the year, a total of 33 city-gas projects joined the platform and launched promotion campaigns that reached 6 million users. Our VCC platform was named as China's Top 10



Towngas Lifestyle, our e-commerce platform, offers a wide range of lifestyle services and products.

We conduct continuous and systematic inspections to ensure customer safety.



Hybrid Cloud User 2017 by the Open Source Cloud Alliance for Industry.

We also improved service standards among our customer service staff through our Three Courtesies service campaign. Forty frontline staff were recognised as ambassadors for practising these Courtesies – etiquette, politeness and care – in their daily interactions with customers. To promote these concepts among all employees, we launched a series of internal activities such as workshops, stories sharing and a video contest.

After-sales service is another important aspect of our service culture that has made the Bauhinia brand so well-trusted among consumers. All Bauhinia products come with a three-year warranty and comprehensive after-sales

services. To improve the service skills of our after-sales team, every year we organise a nationwide competition to motivate our staff to upgrade their skills.

### Safety

One of the main reasons we enjoy such an exemplary reputation on the mainland is our relentless focus on safety and efforts to raise safety standards in the gas industry. Taking a proactive approach to enhance safety levels, we conducted ongoing and systematic safety inspections of our mainland business locations. For example, in 2017, comprehensive safety visits were organised in northeast and north China in September and November, respectively. What's more, we conduct regular safety and risk audits every two years

and the assessment list of safety practices covered more than 800 items. In 2017, we evaluated the performance of 55 joint venture companies, with satisfactory results.

Another key approach to safety is to carry out regular safety inspections (RSI). We introduced RSI in Hong Kong in the 1990s and later brought the concept to mainland China when we began operating there. It has since become a policy for all mainland city-gas companies to conduct RSIs, and every gas user is required to have an inspection every 12 to 24 months.

As we believe in constantly improving safety, we offer comprehensive training to employees across our mainland operations. We have also developed a wide range of training materials, with information on laws and regulations, occupational safety and other practical topics, and established an e-learning platform for all joint venture companies. In 2017, we conducted an online safety quiz that attracted the participation of around 16,000 employees and increased their safety knowledge.

During the year, our safety initiatives achieved significant improvements, as demonstrated by our safety figures in which, for example, the Group's number of serious gas-related incidents fell by 30 per cent.

# 2017

## Utility Businesses in Mainland China

### Towngas Piped City-Gas Projects

#### GUANGDONG PROVINCE

|                  | Year of Establishment | Project Investment Rmb M | Registered Capital Rmb M | Equity Share % |
|------------------|-----------------------|--------------------------|--------------------------|----------------|
| Panyu            | 1994                  | 260                      | 105                      | 80%            |
| Zhongshan        | 1995                  | 240                      | 96                       | 70%            |
| Dongyong         | 1998                  | 178                      | 75                       | 82.6%          |
| Shenzhen         | 2004                  | –                        | 2,214                    | 26.46%         |
| Chaoan           | 2007                  | 185                      | 99                       | 90%            |
| Chaozhou Raoping | 2011                  | 189                      | 106                      | 60%            |

#### CENTRAL CHINA

|       |      |       |     |      |
|-------|------|-------|-----|------|
| Wuhan | 2003 | 1,000 | 420 | 49%  |
| Xinmi | 2009 | 205   | 85  | 100% |

#### EASTERN CHINA

|                        |      |       |       |       |
|------------------------|------|-------|-------|-------|
| Yixing                 | 2001 | 246   | 124   | 80%   |
| Taizhou                | 2002 | 200   | 83    | 65%   |
| Zhangjiagang           | 2003 | 200   | 100   | 50%   |
| Wujiang                | 2003 | 150   | 60    | 80%   |
| Xuzhou                 | 2004 | 245   | 125   | 80%   |
| Suining                | 2009 | 155   | 67    | 100%  |
| Fengxian               | 2009 | 60    | 31    | 100%  |
| Peixian                | 2015 | 300   | 100   | 100%  |
| Danyang                | 2004 | 150   | 60    | 80%   |
| Jintan                 | 2006 | 150   | 60    | 60%   |
| Tongling               | 2006 | 240   | 100   | 70%   |
| Suzhou Industrial Park | 2001 | 600   | 200   | 55%   |
| Changzhou              | 2003 | 248   | 166   | 50%   |
| Nanjing                | 2003 | 1,200 | 700   | 49%   |
| Fengcheng              | 2007 | 206   | 88    | 55%   |
| Pingxiang              | 2009 | 297   | 105   | 100%  |
| Jiangxi                | 2009 | 52    | 26    | 56%   |
| Zhangshu               | 2009 | 86    | 34    | 100%  |
| Yonganzhou             | 2010 | 100   | 68    | 93.9% |
| Hangzhou               | 2013 | 2,988 | 1,195 | 24%   |

#### SHANDONG PROVINCE

|            |      |     |     |     |
|------------|------|-----|-----|-----|
| Jinan East | 2003 | 610 | 470 | 49% |
|------------|------|-----|-----|-----|

#### NORTHERN CHINA

|                                                 |      |     |     |     |
|-------------------------------------------------|------|-----|-----|-----|
| Jilin                                           | 2005 | 247 | 100 | 63% |
| Beijing Economic-technological Development Area | 2005 | 111 | 44  | 49% |
| Hebei Jingxian                                  | 2011 | 186 | 79  | 81% |

#### NORTHWESTERN CHINA

|       |      |       |       |     |
|-------|------|-------|-------|-----|
| Xi'an | 2006 | 1,668 | 1,000 | 49% |
|-------|------|-------|-------|-----|

#### HAINAN PROVINCE

|          |      |     |    |     |
|----------|------|-----|----|-----|
| Qionghai | 2008 | 110 | 50 | 49% |
|----------|------|-----|----|-----|

### Midstream Projects

|                   |      |       |       |        |
|-------------------|------|-------|-------|--------|
| Guangdong LNG     | 2004 | 8,595 | 2,578 | 3%     |
| Anhui NG          | 2005 | –     | 336   | 20.61% |
| Hebei NG          | 2005 | 2,760 | 920   | 43%    |
| Jilin NG          | 2007 | 360   | 220   | 49%    |
| Henan NG          | 2012 | 125   | 60    | 49%    |
| Jintan NG         | 2013 | 180   | 100   | 64%    |
| Huanghua Port LNG | 2017 | 90    | 90    | 20%    |

### LNG Refilling Station

|                  | Year of Establishment | Project Investment Rmb M | Registered Capital Rmb M | Equity Share % |
|------------------|-----------------------|--------------------------|--------------------------|----------------|
| Nanjing (Marine) | 2014                  | 600                      | 217                      | 32.95%         |

### Water Projects

|                                                                |      |       |       |      |
|----------------------------------------------------------------|------|-------|-------|------|
| Wujiang                                                        | 2005 | 2,450 | 860   | 80%  |
| Suzhou Industrial Park                                         | 2005 | 4,705 | 1,597 | 50%  |
| Wuhu                                                           | 2005 | 1,000 | 400   | 75%  |
| Suzhou Industrial Park (Industrial Wastewater Treatment)       | 2011 | 550   | 185   | 49%  |
| Maanshan                                                       | 2013 | 607   | 213   | 100% |
| Jiangbei                                                       | 2013 | 1,049 | 374   | 100% |
| Suzhou Industrial Park (Food Waste Processing and Utilisation) | 2016 | 220   | 75    | 55%  |

### Towngas China Piped City-Gas Projects

#### GUANGDONG PROVINCE

Foshan  
Shaoguan  
Qingyuan  
Yangdong  
Fengxi

#### EASTERN CHINA

Nanjing Gaochun  
Dafeng  
Tongshan  
Hubei Zhongxiang  
Maanshan  
Bowang  
Zhengpugang Xin Qu Modern Industrial Zone  
Wuhu Fanchang  
Wuhu Jiangbei  
Anqing  
Chizhou  
Tunxi  
Huangshan  
Huizhou

Tongxiang  
Huzhou  
Yuhang  
Songyang  
Changjiu  
Fuzhou  
Jiujiang  
Wuning  
Xiushui  
Yifeng  
Changting

#### SHANDONG PROVINCE

Jimo  
Laoshan  
Zibo  
Zibo Lubo  
Longkou  
Jinan West  
Weifang  
Weihai  
Taian  
Chiping

Linqu  
Laiyang  
Zhaoyuan  
Pingyin  
Feicheng  
Boxing Economic Development Zone  
Yangxin  
Wulian

#### HUNAN PROVINCE

Miluo

#### NORTHEASTERN CHINA

Benxi  
Chaoyang  
Tieling  
Fuxin  
Shenyang Coastal Economic Zone  
Yingkou  
Dalian Changxingdao

Dalian Economic and Technical Development Zone  
Anshan  
Lvshun  
Kazuo  
Beipiao  
Wafangdian  
Xinqiu  
Jianping  
Changchun  
Gongzhuling  
Siping  
Qiqihar

#### HEBEI PROVINCE

Qinhuangdao  
Yanshan  
Cangxian  
Mengcun  
Shijiazhuang  
Baoding

#### INNER MONGOLIA

Baotou

#### SOUTHWESTERN CHINA

Ziyang  
Weiyuan  
Pengxi  
Lezhi  
Pingchang  
Dayi  
Yuechi  
Cangxi  
Chengdu  
Zhongjiang  
Jianyang  
Pengshan  
Mianyang  
Xinjin  
Xindu  
Mianzhu  
Jiajiang  
Qijiang  
Guilin  
Zhongwei (Fusui)  
Xingyi  
Luliang

### Midstream Projects

Xuancheng NG  
Taian Taigang  
Inner Mongolia NG

### CNG Refilling Stations

Qiqihar (Lianfu)  
Qiqihar (Xingqixiang)

### Other Projects

Zhuojia Public Engineering  
Sichuan Distributed Energy Systems  
Shenyang Economic and Technical Development Zone Distributed Energy System