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Clean Energy from Waste

Our first food waste recycling project converts food waste and green waste into clean natural gas.



Distributed Energy Systems

Combining heat and power generation, our highly efficient Distributed Energy Systems are helping to reduce energy costs.

Mainland Utility Businesses



Commercial Laundry Business

We are exploring a new opportunity with commercial laundry business that serves hotels in affluent cities.



Mainland Utility Businesses

The year 2019 marked the 25th anniversary of Towngas in mainland China since the establishment of our first joint venture in Panyu, Guangzhou in 1994. Today, our mainland business has expanded to include 132 city-gas projects serving around 30 million customers in 23 provinces, autonomous regions and municipalities. With the growing demand for natural gas and the support of the national Environmental Protection Policy to replace coal, Towngas is contributing to an even more sustainable future for mainland China.

Energy for a Sustainable Future

In 2019, mainland China struggled against economic headwinds brought about by China-US trade disputes. Despite the difficult business environment, Towngas' overall business performance was satisfactory as a result of our efforts to increase sales and identify new business opportunities.

The demand for our natural gas remained high throughout 2019, enabling us to achieve an average of double-digit growth in sales. Our city-gas business recorded a total volume of gas sales of around 25,550 million cubic metres, which was 11 per cent higher than in 2018.

The growing demand for gas can be attributed to the Chinese government's coal-to-gas policy and commitment to reducing



carbon emission intensity. As a supplier of natural gas, the cleanest fossil fuel, we are playing a significant role to support this policy by introducing highly efficient gas applications for customers in a wide range of trades and industries. These include manufacturing industries such as steel, ceramics, glass,

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We supply gas to a glass factory in Zibo, Shandong province for manufacturing processes such as forming and polishing.

textiles and food as well as businesses in the commercial sector, such as laundries, hotels, restaurants and entertainment



In Xuzhou, Jiangsu province, this soybean milk factory utilises gas boilers to generate steam for sanitising soybean milk and bottles.

theme parks. Through our efforts to help customers convert from coal to natural gas, we are contributing to the reduction of pollution and, thus, a cleaner environment.

Distributed Energy Systems (DES) have proven to be a promising business for us. Strong growth has been recorded in this business since it started in 2017. In 2019, we secured eight new DES projects in Anhui, Hebei, Henan, Zhejiang and Guangdong provinces, for an equivalent of 400 million cubic metres in total gas consumption per year. As we continue to explore opportunities in this market, we are aiming to reach a target of 3.5 billion cubic metres in annual DES gas sales by the year 2022.

More and more commercial and industrial customers are recognising the value of these combined heat and power

systems, which can offer energy efficiency rates of up to 80 per cent or more. They are particularly in demand in industrial parks, where a centralised energy supply can be used to generate electricity and simultaneously produce hot water, steam and chilled water through waste heat. As we also see strong demand for residential space heating and steam supply in winter, especially in the northern region of China, we are encouraging the adoption of DES by local districts for the increased energy efficiency and cost savings these systems offer.

Similarly, we would like to enter the new era of Smart Energy by developing an energy portfolio encompassing electricity, steam, natural gas and renewable energy, all of which would be integrated and managed using artificial intelligence and big data via the Internet to achieve higher energy efficiency.

In addition, we have identified new business opportunities among our existing city-gas projects arising from the Chinese government's policy in July 2019 to lift the cap on equity investment by foreign investors. This policy overturned the requirement of Chinese partners to hold a majority stake in certain industries, such as city-gas and thermal pipeline networks, in cities with a population greater than 500,000 people. As a result, we now have greater flexibility to invest in the city-gas projects we currently operate.

Building Up Midstream Businesses

We strive to secure a reliable supply of natural gas by investing in midstream facilities, such as long-haul pipelines and gas storage facilities, in accordance with our diversified gas sourcing strategy.

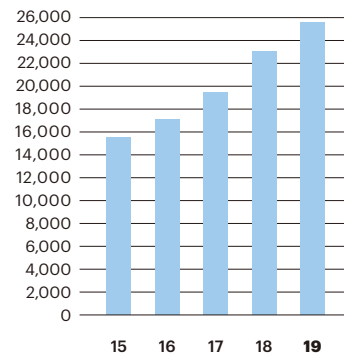
Since 2016, we have integrated the Group's gas purchasing functions to expand our supply sources. In 2019, we partnered with a number of upstream suppliers to purchase 140,000 tonnes of liquefied natural gas (LNG).

With an initial storage capacity of 460 million cubic metres, the first phase of our underground salt-cavern gas storage facility in Jintan, Changzhou, Jiangsu province went into full operation during the year. The second phase is currently under construction towards a targeted completion in 2023. Once this phase is in full operation, it is expected to provide a total storage capacity of 1.1 billion cubic metres and a working volume of 660 million cubic metres. The facility will not only increase our storage capacity but also help us to regulate gas supply and prices more effectively.

This process, called “peak shaving”, enables us to save up gas in the summer months when demand and fuel costs are lower and provide additional gas supply during the winter peak load when demand is higher.

In another development, the Chinese government in 2019 established a national oil and gas pipeline network company by merging the gas pipeline assets of the three state-owned oil and gas companies. This represented a major breakthrough for energy enterprises such as ours, since the new oil and gas pipeline network company will open up the national

China Joint Ventures Gas Sales (million m³)



pipeline network to third parties. For Towngas, it will enable us to diversify our gas supply channels and reserve more gas for our winter supply, which will have the effect of reducing our average procurement costs.

During the year, our Jintan storage facility fulfilled its peak shaving function and launched an auction for its stored gas on the Shanghai Petroleum and Natural Gas Exchange (SHPGX), the national trading platform for natural gas, liquefied petroleum gas, and petroleum. In December 2019, the storage facility successfully supplied gas to the main network of China National Petroleum Corporation’s West-to-East Gas Pipeline, which helped us to attain targeted gas sales of up to 60 million cubic metres during the winter.



A NEW MARKET

During the year, we launched a new commercial laundry business in Guilin, one of mainland China’s most popular tourist destinations. There is great potential for this business, particularly among hotels, which typically have 15 items per room that must be laundered on a regular basis.



Our plant at Suzhou Industrial Park can handle 500 tonnes of food waste, green waste and landfill leachate each day.

Russia's Siberian east-route pipeline that connects to mainland China's northern industrial hub was commissioned in December 2019, which in its first phase will deliver 5 billion cubic metres of natural gas annually. The pipeline will supplement existing natural gas imports mainly from Central Asia and Myanmar, as well as other LNG sources, is expected to increase upstream gas supplies for our city-gas projects in northeastern and northern China.

In the future, we will further expand our midstream businesses and secure more energy sources through joint purchasing and marketing of LNG, importing overseas LNG, as well as storing gas and auctioning it via the SHPGX. It is estimated that the purchase and sales volume of LNG will reach 1.5 million tonnes by 2024.

Clean Water Supply and Food Waste Recycling

Since 2005, we have been operating a water supply and wastewater treatment business in mainland China through our



wholly-owned subsidiary, Hong Kong & China Water Limited (Hua Yan Water). Today, this company has seven water projects.

We see great potential for this business in mainland China as clean water resources have been assigned a high priority. During the year, we sold 930 million tonnes of water to 2.4 million customers, an increase of 52 per cent over the previous year. This considerable growth can be attributed to water sales by Foshan Water Environmental Protection Co., Ltd (Foshan Water), a company in which we acquired a 26 per cent interest in late 2018.

Foshan Water, our first water services project in the Greater Bay Area, is providing new opportunities for our water services and environmental business and creating synergy for our other businesses in the region. Foshan Water, which currently serves more than 1 million

households, recorded 430 million tonnes in water sales during the year – close to the volume of all other Hua Yan Water projects combined.

Another business with good potential is our first food waste project. Located at Suzhou Industrial Park, this business is engaged in the recycling of local food waste, green waste and landfill leachate for conversion into natural gas, oil products, solid fuel and fertilisers for use in the Park. The project commenced trial production in February 2019 and had produced more than 2 million cubic metres of natural gas by the end of the year.

In the future, we will continue to explore the urban food waste and environmental hygiene market as well as other suitable wastewater and organic waste treatment projects.

Extended Services Businesses

Our Bauhinia brand has been gaining widespread acceptance among customers looking for safe, high quality appliances. To date, we have sold a cumulative total of more than 6.5 million Bauhinia appliances since its launch in 2005.

During the year, we focused our marketing efforts on smart kitchens, space heating and clothes dryers as part of our Towngas Comfort Home concept. Our strategic objective with this business is to increase the number of gas applications in customers' homes in order to boost gas consumption and gain greater market share.

In addition to setting up "experience zones" at our sales outlets to promote space heating, we looked to property developers for achieving bulk purchase deals of gas clothes dryers. On the way towards the smart kitchen of the future, we are developing a line of Bauhinia smart appliances that are Internet of Things (IoT) enabled and can be remotely controlled. We expect to launch some of these smart appliance models in 2020.

[In the Mia Cucina Lifestyle Gallery at Suzhou Industrial Park, customers can view our latest premium cabinets.](#)

As a result of our marketing efforts, we achieved encouraging sales of over 800,000 appliances in 2019, a rise of 4 per cent from the year before. Of these, 35,000 were gas clothes dryers and 30,000 were combi boilers.

Since 2015, we have offered a Total Kitchen Solution of premium kitchen equipment and cabinets under the Mia Cucina brand. In 2019, we succeeded in acquiring 14 new sales contracts to supply about 7,100 sets of Mia Cucina for over RMB65 million.

To promote our Mia Cucina cabinets, we set up a showroom – the first Mia Cucina Lifestyle Gallery – at Suzhou Industrial Park in early 2019. Aimed at property developers, this showroom has proven to be an ideal venue for showcasing the elegance, style and quality of the brand.

We set up the Towngas Lifestyle e-commerce platform in 2015. Accessible via websites, social media and mobile apps, the platform continued to provide a convenient online shopping experience and gas account services for customers. It offers a variety of high quality lifestyle services and products, including festive foods, kitchenware, gas related insurance and more.

To help our joint venture companies deliver better services, in 2019 we introduced more back-end functions on this platform, such as e-invoicing, account opening for commercial and industrial customers, WeChat and Alipay mini-applications, as well as a coupon module. We also developed a smart metering module to accommodate future developments in 5G and Narrowband IoT technology.





A technician carries out a regular inspection at one of our gas receiving stations, in keeping with our rigorous approach to safety.

During the year, a total of 82 joint ventures made use of the Towngas Lifestyle platform to serve more than 13 million customers, including 6.7 million registered customers, who made a total of over 9 million transactions valued at RMB1.5 billion.

In October 2019, we extended the trusted Bauhinia brand into high quality local agriculture produce with the official opening of Bauhinia Farm in Zhenjiang, Jiangsu province. Covering an area of about 66.7 hectares, the farm provides locally grown hydroponic produce, livestock feed, sauces and other non-staple foods. In the future, we intend to collaborate with our city-gas joint ventures on sourcing local produce in various regions of the country, which will be reviewed and certified by Bauhinia Farm prior to their launch in the market.

Focus on Safety

The safety of our staff and customers continued to take the highest priority during the year, as part of our commitment not only to maintaining the highest standards of safety but to improving our capabilities in accident prevention.

In 2019, which we designated the Year of Strengthening Work Safety Management, we continued to carry out in-situ safety and risk audits for our project companies, as well as monthly safety inspections by the general managers of our utility joint ventures. We also used analytic tools such as risk assessment to enhance our operational safety and prevent accidents.

Soon after we started operating in mainland China, we introduced a proactive programme of regular

safety inspections for residential customers' homes. These inspections have now become a model of good service as well as a common practice throughout the industry.

We have also dedicated significant resources towards educating our customers on safe gas usage, including the proper handling of gas and appliances. In 2019, we held the Gas Safety for All Creative Competition, in which more than 100 project companies disseminated safety messages to over 6 million customers.

During the year, we established a Safety Network to promote communication on safety among our project companies. Through this channel, we encourage the heads of our companies to increase accountability by motivating their staff to follow safe work practices in line with our corporate culture.

In 2019, we recorded no serious gas incidents and achieved our target of zero accidents. The number of third-party damage incidents and gas pipe network leakage cases both declined.