



Mainland Utility Businesses



A New Focus on Smart Energy

We not only meet the demand for clean, reliable energy that is essential for sustained economic growth in the Chinese mainland but also help to reduce carbon emissions through our smart energy projects, which are now the focus of the Group's business development. By utilising our innovative technology, we can contribute towards the goal of creating blue skies for the country.

Mainland Utility Businesses

After the challenges of the previous year, our businesses in the Chinese mainland continued to make steady progress in 2021 with double digit growth in gas volume. We also established a new business direction, which will see us developing renewable energy as part of our commitment to sustainability and contribution to the country's dual goals of reaching peak carbon dioxide emissions and achieving carbon neutrality.

Our New Business Direction

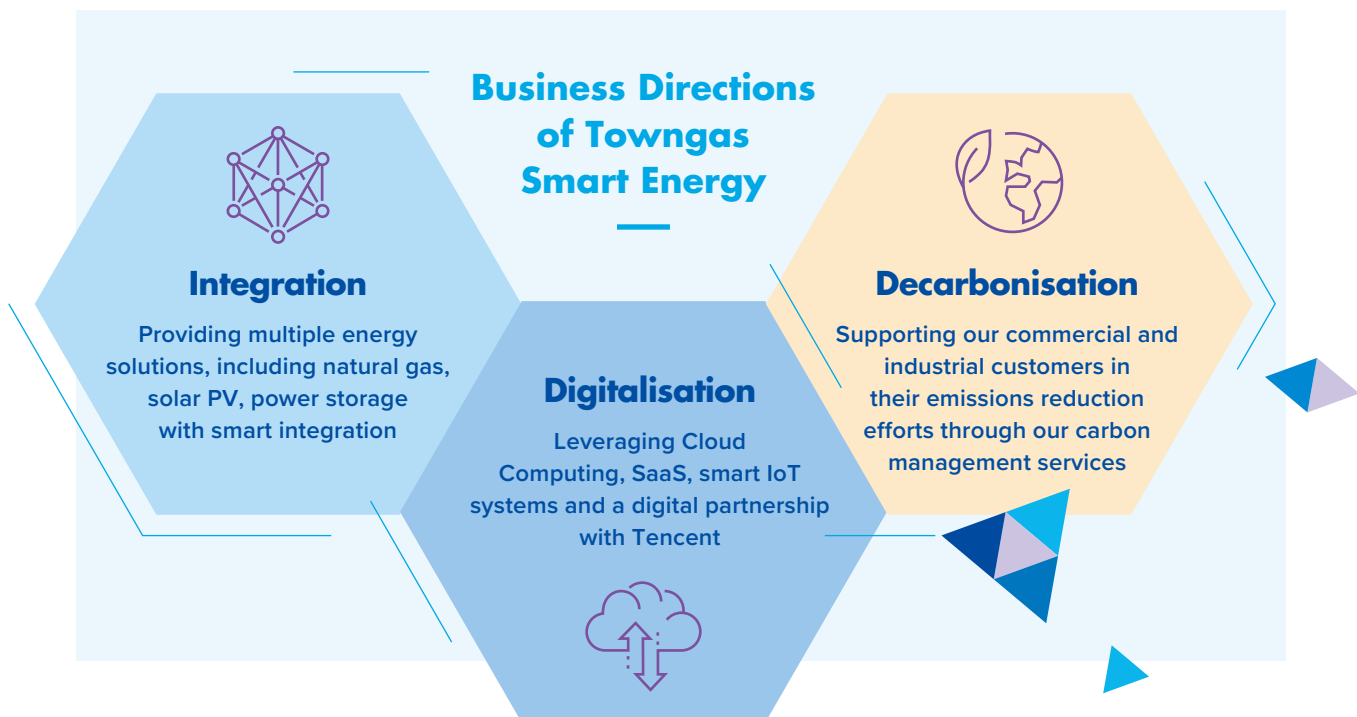
Since 1994 Towngas has been providing businesses and the people of the Chinese mainland with a clean, reliable and economic source of energy as well as products for a more comfortable and convenient way of life. Today,

we have become a leading gas supplier in the country, with 303 city-gas projects serving over 35 million customers in 24 provinces, autonomous regions and municipalities.

In an important move for the Group, during the year we began embarking in a new business

direction – renewable energy – that will reposition us as an integrated energy operator working towards the country's "30-60" decarbonisation goal of reaching peak carbon dioxide emissions by 2030 and achieving carbon neutrality by 2060.

In November 2021 our subsidiary company, Towngas China Company





At Jiawang Industrial Park in Xuzhou, Jiangsu province, we supplied steam heat to local residents and businesses as a replacement for coal.

Limited, received HK\$2.8 billion from a well-known private equity fund, Affinity Equity Partners. This investment will enable us to accelerate our transition from a traditional utility company into a leading integrated clean energy supplier, with technology and innovation as our focus.

Along with this new direction, we changed the name of the company from Towngas China Company Limited to Towngas Smart Energy Company Limited (Towngas Smart Energy). This paves the way for us to expand our products and services into renewable energy, such as solar energy systems for our commercial and industrial (C&I) customers, Distributed Energy Systems (DES) and energy storage projects. The investment will also be used to expand our digital capabilities through smart energy management systems.

Expanding into Zero-carbon Smart Industrial Parks

Currently, there are around 2,600 national and provincial industrial parks in the Chinese mainland. One of the main businesses of Towngas Smart Energy will be the development of zero-carbon smart industrial park projects.

For these projects, we are installing solar photovoltaic power generation systems on the rooftops of large-scale production plants and logistics warehouses inside existing industrial parks. The solar energy that is supplied will be configured for use in energy storage, charging and swapping power stations, multi-energy supply (cold, heat, electricity) and other energy facilities. We have also established a carbon asset company providing carbon emissions

measurement, carbon trading and other carbon management services to help customers in zero-carbon smart industrial parks achieve decarbonisation and green governance.

Our overall objective with Towngas Smart Energy is to become a leading company in China's energy management industry, targeting 200 zero-carbon smart industrial parks with photovoltaics by the year 2025. Due to the huge and diverse energy demand of industrial parks, we believe our smart energy services in these parks will grow rapidly. Key markets will include the Beijing-Tianjin-Hebei region, Yangtze River Delta region and Guangdong-Hong Kong-Macao Greater Bay Area. At the end of 2021, we had planned more than 110 renewable energy projects and negotiated 32 zero-carbon smart industrial parks for development.



In July 2021 we reached a strategic collaboration agreement with Contemporary Amperex Technology Company Limited (CATL) for energy internet construction, energy storage solutions, battery technology, and chip and equity investment, among other ventures. Towngas Chairman Lee Ka-kit (third from right) and Pan Jian, Vice Chairman of CATL (second from left) attended the signing ceremony.

To build on our expertise in smart energy, we have strengthened our R&D efforts in energy management technologies and zero-carbon solutions based on renewable energy, advanced energy storage and the blockchain. Leading this effort is a strong technical and engineering team that will provide one-stop services, ranging from consultation to design, engineering and operation. Moreover, we have established strategic partnerships with leading technology companies and education institutions. In December 2021 we concluded a strategic partnership with StarFive and Winicssec to jointly develop zero-carbon smart energy solutions based on RISC-V chips.

Clean Energy, Steady Progress

The demand for clean energy increased sharply in 2021 with the announcement of China's "30-60" decarbonisation goals. Double digit growth in gas sales was achieved, due largely to the recovery of the C&I sector. During the year, the total volume of city-gas sales was over 31 billion cubic metres, an increase of 16 per cent compared with the previous year. C&I sales rose 19 per cent.

A growing source of revenue for us is the DES business. Based on an integrated energy supply, for example, these systems use natural gas to generate electricity for space heating. They also produce steam through waste heat for an overall efficiency rate of 80 per cent or more. In 2021 our DES business

accounted for 368 million cubic metres of our total gas sales, an increase of 39 per cent from the year before.

Also during the year, we made a stronger effort to expand the steam and hot water supply market, including district household heating and heat or steam supply to C&I customers. In 2021 we developed steam boiler projects at a total of 5,900 t/h of steam. We also worked closely with our business partners to provide integrated energy solutions based on innovative technologies. One example is a dual-fuel smart system to control heat pumps and water heaters that supply hot water in hotels. In total, our steam and hot water business accounted for nearly 4 billion cubic metres of gas sales during the year.

Midstream and Upstream Businesses

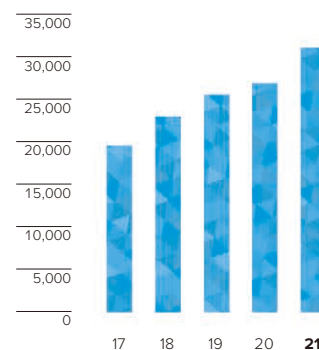
Our investments in midstream and upstream projects include long-haul pipelines, gas storage facilities and liquefied natural gas (LNG) terminals, which help us make purchases of gas from diversified sources to guarantee supply and save costs.

In 2021 we made satisfactory progress on our midstream projects, such as our underground salt-cavern gas storage project in Jintan, Changzhou, Jiangsu province. Strategically located in the highly industrialised eastern part of China, the Jintan facility is being constructed in phases and will ultimately comprise 25 wells with a total planned storage capacity of 1.1 billion cubic metres.

During the year, we operated five wells with a storage capacity of 250 million cubic metres and began construction on more wells in the next phase of the project.

Our storage tank project at the LNG receiving terminal in Caofeidian, Tangshan, Hebei province also made steady progress. This project includes two storage tanks with a total volume of 400,000 cubic metres, equivalent to a gas storage capacity of 240 million cubic metres. The first phase of the project, which will be commissioned by the end of 2022, will have a receiving capacity of 5 million tonnes of LNG per year. The external pipeline of the terminal will also be commissioned at the end of 2022 and will be connected to the national trunk pipelines,

China Joint Ventures Gas Sales (million m³)



including the China-Russia East Line and Qin-Shen Line, as well as the natural gas pipeline in Hebei province.

In 2021 we stepped up negotiations for long-term imports of LNG, which will be brought into the country via the Caofeidian terminal. We expect to import 250,000 tonnes of LNG in 2023 and up to 1 million tonnes annually in 2025. We will make use of the LNG receiving terminals in Caofeidian and Shanghai for regular import trading, as well as the three developed LNG distribution channels – in Tangshan, Tianjin and Shanghai – that will be connected to markets in north, northeast and east China through the national pipeline network and interconnected pipelines.



Waste heat from our plant in Tongling, Anhui province is converted into energy for use by our industrial customers.

Mainland Utility Businesses

The construction of a shale gas liquefaction plant in Weiyuan, Sichuan province is expected to be completed in early 2023, which will become its gas storage and peak-shaving base in southwestern China. Cooperation agreements for this project have already been reached with many upstream and downstream enterprises. By 2025 it will have a total production capacity of 300,000 tonnes of LNG per annum.

Water and Environmental Business

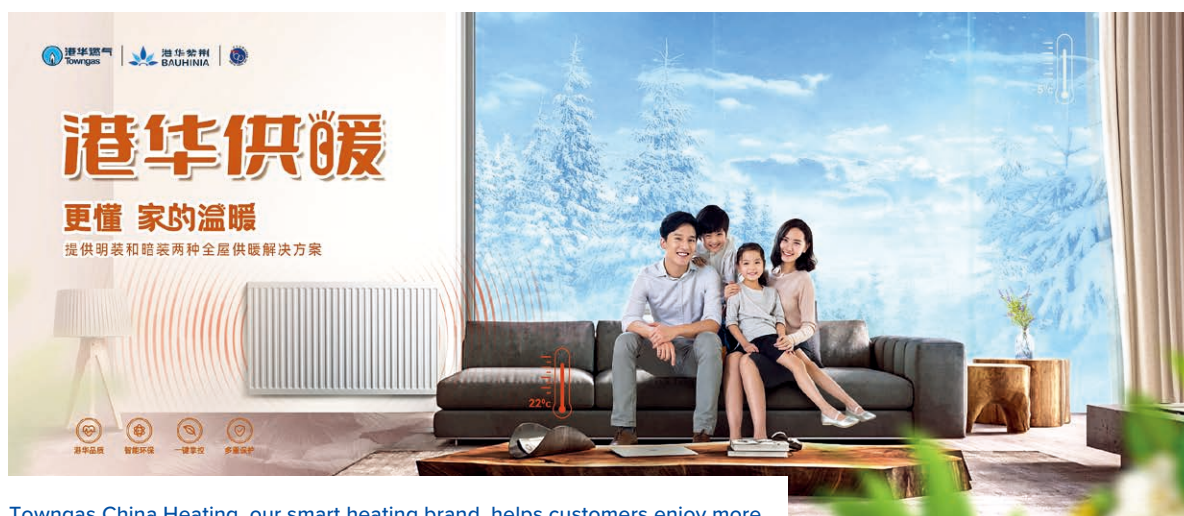
Our wholly-owned subsidiary, Hong Kong & China Water Limited (Hua Yan Water), specialises in tap water supply and wastewater treatment, water quality and meter testing, and smart water supply services in the Chinese mainland. Hua Yan Water currently operates 9 water projects, serving over 2.6 million

households with a daily water supply capacity of 4.67 million tonnes. As the economy recovered in 2021, Hua Yan Water recorded total water sales of 994 million tonnes, an increase of 8 per cent from the year before.

Another subsidiary, Hong Kong and China Environmental Holdings Company Limited (Hua Yan Environmental), coordinates our environmental governance and municipal waste utilisation businesses. With the objective of achieving zero waste and waste-to-energy, these businesses are involved in food waste treatment, waste incineration for power generation, and sewage treatment. We achieved satisfactory progress in our urban organic waste treatment projects at Suzhou Industrial Park, Jiangsu province and Tongling, Anhui province. The project at Suzhou Industrial

Park has cumulatively processed more than 300,000 tonnes of organic waste and produced 13 million cubic metres of bio-natural gas. An additional production line in the Suzhou project was commissioned in 2021, increasing daily processing capacity to 800 tonnes.

Two municipal waste treatment projects in Changzhou, Jiangsu province will begin construction in 2022, which are expected to increase our urban waste processing capacity to 1,500 tonnes per day when completed. Another project, an incineration treatment facility for electricity generation in Jiashan, Changzhou, has been included on the list of provincial key eco-environment projects. It will commence construction in 2022 and, in the first phase, will have a daily working capacity of 1,500 tonnes.



Towngas China Heating, our smart heating brand, helps customers enjoy more comfortable living with a temperature control system developed in-house.



We organise healthy cooking demonstrations at Moment+ Community Healthy Lifestyle Experience Centres regularly.

Businesses Beyond Gas

Through our extensive network of online and offline channels, we provide a wide variety of stylish kitchen equipment and cabinets, gas appliances, home accessories, health services and food products for healthy and comfortable living.

With the completion of our capital injection into Shanghai Gas in July 2021, Towngas Smart Energy holds a 25 per cent direct ownership share in the company. As Shanghai Gas is one of the leading gas suppliers on the mainland with 6.4 million customers, the partnership will bring the total number of customers we serve up to over 41 million. Since Shanghai also has the highest GDP in the

Chinese mainland, with strong demand for smart homes, healthy lifestyles and high-end products, the partnership should open up immense opportunities for our extended businesses.

Our Bauhinia line of gas appliances is renowned for its high quality and safety standards. With the development of the Internet of Things (IoT), we have introduced a smart product series that includes range hoods, cookers, water heaters and space heaters. These and other Bauhinia smart kitchen appliances and devices can all be controlled through mobile apps. In 2021 we added smart household gas alarms and household water purification products.

In 2021 we initiated a strategic plan to expand our residential space heating business. Capitalising on centralised material purchasing as well as standardised installation designs and workmanship, we aim to establish a consistent brand image for Towngas Space Heating. Starting with pilot projects in Jiangsu and Zhejiang provinces, we will continue exploring new opportunities to increase market share for this business.

For Towngas Lifestyle, we launched an upgraded Moment+ online platform during the year. It offers a comprehensive range of home services and products and gas-related services, as well as health management information and other related products and services. Through our Moment+ Community Healthy Lifestyle Experience Centres, we formed a new online and offline integrated business model with a focus on health and lifestyle. Moreover, we built a strong community network and a one-stop-shop platform in partnership with renowned medical and health brands. Services include health management, nutrition and diet consultation services, family insurance, cooking classes and in-home cleaning.

With over 12 million registered members, the platform achieved sales of RMB50.35 million in 2021, an increase of 168 per cent from the previous year.