

# Review of Operations



Hong Kong  
Businesses

Mainland  
Businesses

Diversified  
Businesses

Environmental,  
Social and  
Governance

# Hong Kong Businesses

The year 2023 marked the end of the pandemic and the start of economic recovery. The Group's development strategy focuses on innovation and adaptability to maintain a stable foundation on which to continue exploring innovative solutions and new business opportunities.

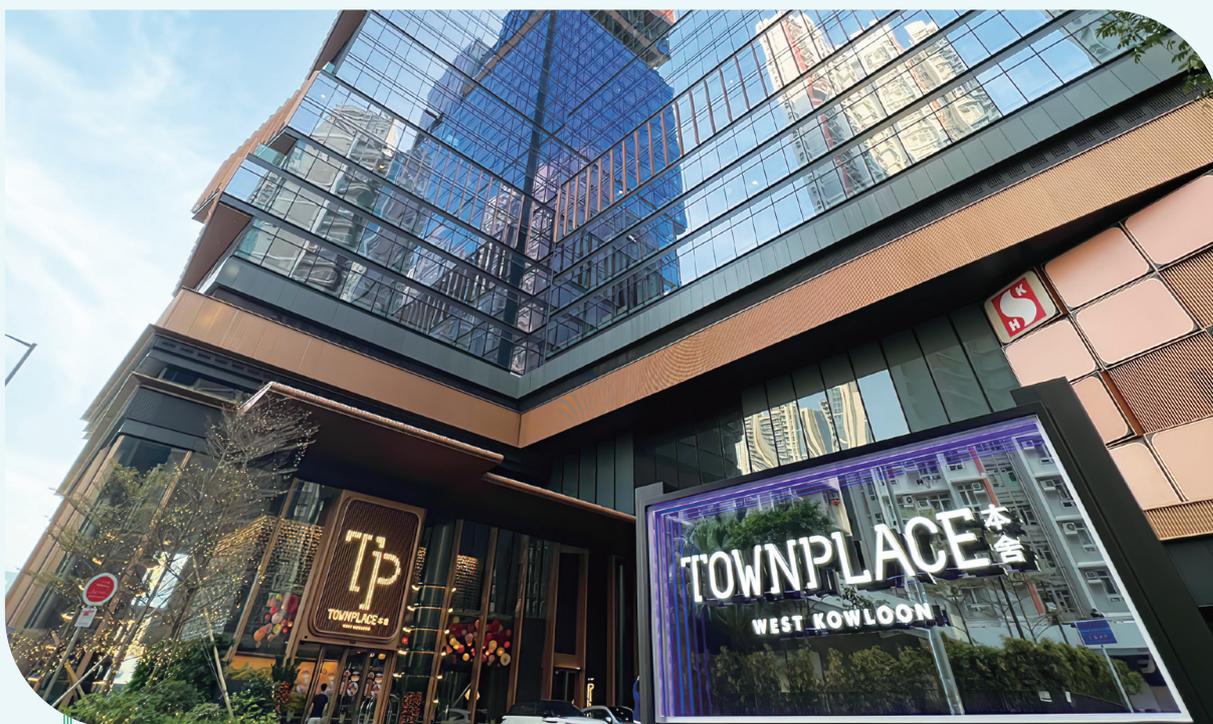
## Entering a Year of Recovery

As Hong Kong emerged from the pandemic at the start of the 2023, economic activities gradually returned to normal. Throughout the year, however, Hong Kong experienced above-average temperatures due to climate change, with some months setting

record high temperatures. These factors, combined with the rebound in outbound travel by Hong Kong people, affected our residential gas sales volume during the year, causing a slight drop of 1 per cent in the total volume of gas sales from 2022.

This was offset by the influx of tourists and the government's

introduction of measures to stimulate domestic consumption, which contributed to a surge in gas usage in the restaurant and hotel industries. Aviation-related businesses also rebounded, particularly flight catering and laundry services, which accounted for a dramatic 40 per cent increase in gas sales in 2023 compared with the same period last year.



We offer total energy solutions to Townplace West Kowloon including the gas hot-water-sourced desiccant dehumidifier that helps control indoor humidity efficiently.

Commercial and industrial gas sales were satisfactory and are anticipated to continue showing positive growth in 2024. In new property developments such as Hopewell Centre II, Metropark Hotel Hunghom and Kimpton Hotel, town gas is expected to be widely adopted for hot water supply and catering services. All these developments are scheduled to open in 2024.

Additionally, Hopewell Centre II has indicated it will install our gas hot-water-sourced desiccant dehumidifiers for active indoor humidity control. Existing hotels such as Regal Hong Kong Hotel and WM Hotel have been switching to our hot-water systems for steam and hot water supply. We anticipate that these projects will contribute positively to our reputation and market presence.

### Making Hydrogen Energy Accessible

As hydrogen emits only water when used as a clean energy source, it is an ideal fuel for transportation, power generation, and energy storage and construction site equipment. At Towngas, we have more than 160 years of experience handling hydrogen, which makes up around 50 per cent of the town gas mix, and operating a sophisticated gas pipeline network covering the entire city. We are thus in a unique position to capitalise on the business opportunity for hydrogen supply.

The Policy Address 2023 has set out the vision of promoting new energy for sea, land and air transport. In addition, the government will finish formulating the Strategy of Hydrogen Development in Hong Kong in the first half of 2024. In tandem

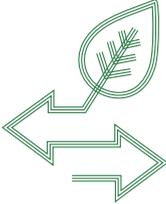
with the government's efforts to promote a green economy and hydrogen business, we are working closely with various stakeholders to fast-track safe, efficient and low-cost hydrogen supply for the transport and commercial sectors. In July 2023, Towngas and Bravo Transport, the parent company of Citybus, signed a Memorandum of Understanding (MOU) to explore the use of hydrogen as an alternative fuel source for public buses. Also covered in the MOU is the construction of a hydrogen refilling station at the bus depot in Chai Wan, which is targeted for completion by the end of 2024.

Moreover, the government approved in principle the Group's trial hydrogen project at a padel court in Sai Kung, which involves extracting hydrogen from the existing town gas network with a rotary pressure



Towngas and Bravo Transport signed an MOU to promote the development of hydrogen energy in Hong Kong.

## Sustainable Green Energy Hub



During the year, the Group established the Sustainable Green Energy Hub, with a focus on conducting research in the green energy business, fostering government and business relationships, expanding commercial opportunities, and collecting and analysing policies and market data. The Hub is set to develop green energy solutions that best serve our customers in Hong Kong and on the Chinese mainland.

swing adsorption (rPSA) system to generate electricity for charging electric vehicles (EVs). In addition to powering EV chargers, the residual gas captured can also be used to power a combined heat and power (CHP) system to supply hot water for the padel court premises.

### Exploring New Markets with Decarbonisation Solutions

Our vision for achieving decarbonisation through innovative solutions gained recognition with the completion of the first cross-

boundary waste-to-energy system for the food factory of Maxim's Group. The system makes use of waste heat captured during the town gas production process at our Tai Po Plant, which is then transported as green energy via hot water pipelines and heat exchangers to the Maxim's food factory. As a result of this ground-breaking technology, emissions can be reduced by 800 tCO<sub>2</sub>e annually while enhancing energy efficiency.

Customers have increasingly opted to use our integrated primary air-handling unit with desiccant

wheel (D-PAU) system. Building on successful precedents in hospitals, we are helping Union Hospital extend its D-PAU system to its newly expanded ancillary wards for controlling humidity and enhancing indoor air quality.

Furthermore, with the Towngas combined heat and power system driven by landfill gas, the Alice Ho Miu Ling Nethersole Hospital in Tai Po achieved an annual energy savings of 30.5TJ and a reduction in carbon dioxide emissions by 2,207 tonnes in 2023.



In a trial project in Sai Kung, hydrogen is extracted from the town gas network to power hydrogen fuel cell for EV charging.



The first-ever launch of the TGC Little Twin Stars appliance series captured the attention of young consumers and generated an overwhelming response on social media.

## Smart Appliances and Services

During the year, we continued to launch smart appliances and devices in the market. Among these was our first dual-timer built-in hob with smart Internet of Things (IoT) functions that allows customers to monitor and shut off the hob remotely on their smartphone, anytime and anywhere, when required. We also added new safety features to our smart meters for residential customers based on the remote meter reading system. It can identify gas leakages according to consumption patterns; if an abnormality is detected, the meter's internal valve will cut off the gas supply and send an alert instantly to Towngas for follow-up. Since the new smart meter was launched in 2023, more than 42,000 of these

units have been installed and some leakage cases have been successfully detected and rectified.

One of our primary goals as a business is to help our customers save energy with products that exceed industry standards. So when the government announced the fourth phase of the Mandatory Energy Efficiency Label Scheme (MEELS) which will be fully implemented on 1 December 2024, we planned to acquire the highest Grade 1 energy efficiency label for our gas cookers and water heaters under the Mia Cucina and TGC brands.

To modernise our operations, we continued to upgrade our customer services with AI and big data analytics. During the year, the Towngas Customer Service

Hotline adopted Robotic Process Automation (RPA) and expanded its online self-service options. The RPA system was able to process more than 35 per cent of online enquiries in 2023, while an increase in online self-service usage of 24 per cent over the previous year was recorded. Moreover, our AI chatbot Tinny handled 14 per cent of total customer enquiries in 2023. Usage of the chatbot increased by 94 per cent thanks to its round-the-clock availability and enhanced features that resolved customers' enquiries instantly. We are now in the process of upgrading our answering system with data insights to provide an even better customer experience.

During the year, our customer services continued to be well received, as evidenced by the more than 5,500 compliment letters sent

## Results of Towngas Service Pledge 2023

### Reliability

Uninterrupted gas supply<sup>^</sup> (over 99.99%)

**99.992%**



In case of supply interruption on account of maintenance or engineering work: customer notification 3 days in advance

**100%**

Restoration of gas supply within 12 hours

**100%**

<sup>^</sup> Unplanned gas supply interruption

### Safety

Emergency Team average arrival time (within 25 minutes)



Average

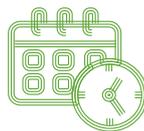
**21.32 minutes**

### Appointments

Availability of maintenance and installation services within 2 working days

Average

**1.08 days**



### Speed and Convenience

Customer Service Hotline (calls answered within 4 rings)

**95.95%**

Connect or disconnect gas supply within 1 working day (upon customer's request)

**100%**



### Service Quality

Efficiency\*

**8.96**



Courteous and friendly attitude\*

**8.94**

\* Our target was to exceed a score of 8.5 out of 10.0

### Handling Suggestions

Reply within 3 working days

**100%**



Resolution, or a statement of how and when the matter will be resolved, within 2 weeks

**100%**

to Towngas. Our highly-acclaimed Residential Installation service also received the Gold Award in the 2022 HKACE Award – Field & Special Service Team Award by The Hong Kong Association for Customer Service Excellence (HKACE). Other awards included the Hong Kong Customer Contact Association (HKCCA)'s Mystery Caller Assessment Award – Public

Service and Utilities – Gold Award for our Customer Service Hotline, as well as the Best Customer Centre in Digital Transformation – Bronze Award. In addition, our Towngas Customer Centre received the 2023 Quality Service Retailer of the Year – Quality Living Category Award from the Hong Kong Retail Management Association.

### Providing a Reliable Gas Supply

Gas safety and supply reliability are top priorities for Towngas. We take pride in setting the highest standards by maintaining a robust infrastructure and exploring new ways to monitor and upgrade our service offerings.

In 2023, Hong Kong experienced two major natural disasters: Super Typhoon Saola in August and, in September, the worst flood ever recorded in the city's history. Both brought the city to a halt and caused varying degrees of damage to public infrastructure. Despite high-risk conditions, Towngas' frontline staff displayed the utmost professionalism when ensuring town gas supply to customers. At the same time, Towngas' pipeline network, which serves 86 per cent of all Hong Kong households, remained intact – a testament to the high quality of our pipeline system and the stringent protocols put in place by our infrastructure team.

Third-party damage incidents and reported leakages during the year were kept at a low level, as a result of our strengthened liaison with stakeholders and use of high tech applications such as AI for site inspections and monitoring. In 2023, the third party damage rate dropped dramatically by 50 per cent from 2022.

To further improve gas supply reliability, we replaced cut-off destructive tests with a new non-destructive test technology, the Phased Array Ultrasonic Test, to check PE pipe joint quality.

We also used Horizontal Directional Drilling (HDD) technology to lay a pipe across the Tai Lam Chung nullah to connect the medium pressure network between Tsuen Wan and Tuen Mun. This increased supply reliability for over 20,000 customers in the area.

To meet future gas demand in the Northern Metropolis development area, we built a new offtake station at Hung Shui Kiu and modified the existing offtake stations. These efforts, along with a project to construct a preliminary medium and low-pressure supply network, were all underway in 2023.



This car fell into a sinkhole near Repulse Bay during the severe rainstorm on 8 September 2023. The gas pipe and joint under the car remained intact thanks to Towngas' meticulous workmanship.

# Mainland Businesses

Since establishing a presence on the Chinese mainland in 1994, our utility businesses have continued to grow and prosper. In order to keep pace with national development, we have diversified our businesses beyond city gas. In recent years, we have expanded our smart energy business and provided integrated energy solutions to our customers, securing a leading position in the market while contributing to the country's transition towards carbon neutrality.

## Seize Opportunities to Flourish

The Group's mainland utility businesses continued to demonstrate steady growth in 2023, as a result of the country's strong emphasis on promoting consumption and implementing measures to stabilise the economy, as well as increased urbanisation

on the Chinese mainland. The total volume of gas sales during the year was approximately 34,700 million cubic metres, an increase of 8 per cent compared with the previous year. The total number of gas customers of the Group reached about 40.19 million, representing an increase of 7.8 per cent compared with 2022.

Our commercial and industrial businesses yielded satisfactory results during the year. Along with the rapid development of the green energy industry on the Chinese mainland, our industrial clients for green energy related products, such as new energy vehicles, photovoltaic (PV) glass and lithium batteries, continued to exert strong



We supply natural gas to this lithium battery material production company in Zhangjiagang, Jiangsu province, for high-temperature roasting, evaporation, drying and other production processes.



Using our customised energy trusteeship service, Huanggang Central Hospital in Hubei province can achieve energy savings and carbon reduction, as well as lower investment costs.

demand for gas. Therefore, it is expected that the growth in gas sales will be maintained.

After the pandemic had subsided, we saw domestic consumption resume gradually, which led to steady growth in commercial gas sales. In tandem with the government's initiative to improve safety at food and beverage outlets, our city-gas projects in Jiangsu, Shandong and other provinces stepped up efforts to advance the bottle-to-pipe conversion programme, which encourages restaurants to switch from bottled gas to piped gas.

Since the announcement of the country's "30-60" dual carbon goals, the government has been continuously introducing strong policies and higher energy efficiency

standards for industries and public enterprises. The national policies also encourage public institutions to adopt energy cost trusteeship services, and promote the green and low-carbon transformation. Thus, the demand for multi-energy solutions and energy efficiency management services has increased sharply.

We pursued this market opportunity by expanding our "Gas+" business, which provides a seamless one-stop solution for low-carbon, high-efficiency, light-asset-based energy services. One example is the contract we secured during the year from Huanggang Central Hospital, Hubei province, to provide energy cost trusteeship services, as well as cooling, heating, hot water supply, steam and electricity. This project was the Group's first energy cost trusteeship services project for a

hospital and one of the largest in the country in terms of trustee area and annual value.

The Group also entered into strategic cooperation agreements with provincial government departments in Jiangsu, Shandong and other provinces. One example of these agreements was the Cooperation Framework Agreement for Improving Energy Efficiency in Public Institutions with the Jiangsu Provincial Administration of Government Affairs. Additionally, we organised a seminar with the China Energy Conservation Association on exploring innovative energy management service models for public institutions. During the event, we signed strategic cooperation agreements with 18 public institutions and enterprises.

In 2023, the country issued the Guiding Opinions on the Establishing and Improving of Upstream and Downstream Price Linkage Mechanism of Natural Gas for all provinces. Subsequent to this, the Group made price stabilisation breakthroughs for residents across the region, which also helped to stabilise the operations of our city-gas companies.

### Blending Hydrogen with Gas

As natural gas will continue to play an important role in the country's energy mix, we have identified opportunities with huge potential for the integrated development of natural gas along with new energy such as hydrogen. In view of the government's hydrogen development plans, we stepped up our efforts to explore the application of natural gas and hydrogen blends.

One such project is for blending hydrogen into natural gas pipelines in Weifang, Shandong province. Now in the research stage, it is targeted to serve approximately 100,000 residential households with a hydrogen-blending ratio of 10 per cent. We are proud to be a pioneer in projects such as this, which contribute to the "30-60" decarbonisation goals.

### Optimising the Gas Supply Chain

The Group has strived to strengthen self-sufficiency in natural gas supply and stabilise prices, particularly during peak seasons. In 2023, we established our gas supply chain business segment to synergise gas source procurement coordination among all our businesses with this one-stop platform. It is based on a three-pronged approach of procurement, transmission and distribution, as well as gas storage.

To date, this strategy has succeeded in optimising the Group's gas source structure to ensure stable supply, reduce costs and increase profit margins.

According to our diversified sourcing procurement strategy, we plan to purchase international resources through liquefied natural gas (LNG) receiving stations strategically located in Tangshan, Shanghai, Tianjin and Shenzhen. In 2023, we imported our first direct shipment of LNG, creating a new business environment for the Group that streamlines the business process from direct import through terminals to downstream distribution. Moreover, we further expand our self-operated gas sources, including unconventional gas sources such as our coalbed methane liquefaction project in Shanxi province and shale gas liquefaction project in Sichuan province, among others.



The storage tanks at the receiving terminal in Caofeidian district, Tangshan, will be commissioned in 2024.

The construction of our gas resource infrastructure made satisfactory progress during the year. With the commissioning of two new gas wells, the total storage capacity of our underground salt-cavern storage facility in Jintan district, Changzhou, Jiangsu province, has now reached nearly 400 million cubic metres. Through seamless collaboration with logistics partners and interconnection with national pipeline networks such as the West-to-East Gas Pipeline and Sichuan-to-East Gas Pipeline, we were able to further increase gas storage turnover.

On top of that, the shale gas liquefaction project in Weiyuan, Sichuan province, commenced operation in 2023, with an annual designed liquefaction capacity of about 200 million cubic metres,

signalling a new milestone in cross-border gas trading. In addition, the storage tanks in Caofeidian district, Tangshan, Hebei province, will be commissioned in 2024, with the potential of increasing storage capacity to 180,000 tonnes.

All these initiatives helped us achieve collaborative partnerships with international and major domestic natural gas suppliers, infrastructure operators and city-gas partners. As a result, we have been able to realise synergies and promote the further development of our core business.

### Expanding Renewable Energy Business

The Group's latest direction in renewable energy, comprising the three pillars of Integrated Energy

Solutions, Decarbonisation and Digitalisation, has enabled us to make remarkable advances in our energy businesses and put us in a uniquely winning position in the market.

According to the China Renewable Energy Development Report (2022), renewable energy was projected to grow rapidly during the 14th Five-Year Plan, with 33 per cent of total electricity consumption to be generated by renewable energy. More than half of the country's installed power is expected to come from PV and wind power during this period.

Recognising the huge opportunity in the distributed PV market, the Group had 354 renewable energy projects as at the end of 2023, representing an increase of 171 projects compared with the preceding year.

## PV Power Station for a Steel Mill in Guangzhou

Commissioned in 2023, this PV power station for a large-scale steel mill in Guangzhou, Guangdong province, is currently the province's largest distributed PV power station in terms of individual capacity. The power station has 29MW of distributed PV power and is projected to provide 30 million kWh of green electricity annually.

In future, we will continue to explore new ways to create comprehensive energy solutions that focus on energy savings, emission reduction and cost reduction as well as efficiency improvements, all of which will help customers achieve their decarbonisation goals.



## Virtual Plant for a Public Institution in Shenzhen



The Futian District Party Committee Compound's virtual power plant officially started operating in 2023. As the first virtual plant of a public institution in Shenzhen, it provides PV power, energy storage, charging piles, Vehicle-to-Grid (V2G), central air conditioning system and other distributed energy resources. With 3.6MW aggregated load resources and an instantaneous adjustable capacity of 300kW, the plant balances supply and demand flexibly and effectively during peak usage periods via its digital system.

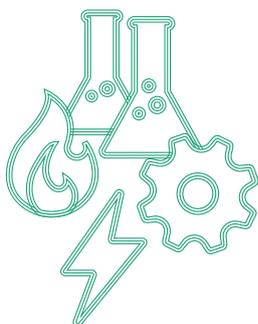
These projects included PV, energy storage, battery charging and swapping power stations, as well as integrated energy services for industrial and commercial customers. During the year, we secured new contracts for approximately 1.6GW of distributed photovoltaic capacity and added 1.2GW to the grid-connected capacity. By the end of 2023, the Group's subsidiary, Towngas Smart Energy Company

Limited, had developed 124 zero-carbon smart industrial parks projects accumulatively.

All these projects and partnerships reflect the success of the Group's seven service areas in the renewable energy sector: zero-carbon technology, smart operation and maintenance, low-carbon factories, industrial park energy storage, virtual power plants, carbon management and trading, and green power trading.

Building on the successful collaboration with Tencent Cloud to develop the Towngas Smart Energy Platform, the platform was upgraded to "Tera Planet 2.0" during the year. The system will help break the "data islands" in zero-carbon industrial parks and enhance data management in smart energy usage, application integration and replication. This will also benefit industrial and commercial users and low-carbon factory projects.

## Towngas Energy Academy



Strategically located in the Shenzhen-Hong Kong Innovation and Technology Cooperation Zone at the Loop in Futian district, Shenzhen, the Towngas Energy Academy (TEA) aims to attract and lead scientific research in partnership with prestigious international scientific institutions for the Group's business growth and future opportunities.

The Academy capitalises on the Group's mainland energy projects to provide a platform for five major research and development areas: hydrogen energy, energy storage, energy digital intelligence, renewable energy, and low-carbon energy savings. During the year, the Academy made huge progress introducing its technological and sustainable development capabilities. This resulted in strategic partnerships that included a cooperation agreement with the Shenzhen Institute of Advanced Technology of the Chinese Academy of Sciences to establish the Joint Innovation Centre of High-efficient Energy Storage.

### Water and Environmental Businesses

The Group's water and environmental businesses performed steadily in 2023. In recent years, the Group diversified these businesses beyond traditional water supply and wastewater treatment to urban waste utilisation, organic waste treatment and smart water plant facilities, all of which assist cities and projects with their low-carbon development. In 2023, our portfolio of 11 projects covered water supply, sewage treatment, organic waste treatment and solid waste disposal.

As a showcase of our high-efficiency integrated environmental solutions in the sanitation industry, our industrial sewage treatment project in the Wujin National High-Tech Industrial Zone of Changzhou, Jiangsu province, officially went into operation in 2023, with a daily processing capacity of 30,000 tonnes.

During the year, the Group processed 1.46 million tonnes of organic waste, an increase of 5 per cent over the previous year.

### Extended Businesses

Towngas Lifestyle, a major brand under the Group, provides high-quality products and services in four major business areas – smart kitchens, insurance, home services

and community retail – to meet the needs of customers.

In 2023, the Group continued to promote our Mia Cucina kitchen cabinet and Bauhinia appliance brands. To extend our market reach and brand presence, the Group entered into strategic partnerships with household brands such as Viessmann, Angel and Rinnai to develop co-branded products. During the year, Towngas Lifestyle also launched various promotional trade-in marketing campaigns and utilised its digital platform to increase appliance sales. Marketing activities held through the Moment+ Healthy Living Centres, sales outlets and the signature Towngas China Comfort Living Festival also helped stimulate business growth.

## IoT Smart Kitchen



Despite the uncertain market environment, our insurance business achieved positive growth in 2023. This was due to our strategic multi-channel sales efforts and launch of products with more comprehensive coverage, all of which complied with the regulations of the financial regulatory authorities. All our insurance salespersons are certified and have undergone rigorous training to ensure the highest level of professional services.

To meet the increasingly stringent market demand for product safety, we launched the Towngas Lifestyle

Smart Alarm Platform in 2023. Based on our digital platform, it offers a “product + platform + service” total solution to ensure home safety and business efficiency.

TGSE CHIP, our RISC-V IoT security chip, made significant progress in 2023. Jointly developed by Towngas Lifestyle, StarFive and ChinaFive, TGSE CHIP achieved sales of over 1.6 million units and began to apply in industrial firewalls and remote meters. Moreover, Towngas Lifestyle collaborated with China Mobile IoT, XinSheng Technology and StarFive to set up

the country’s first RISC-V & 5G Smart Gas Joint Innovation Centre during the year. We will jointly develop gas safety-related products for smart kitchens and TGSE CHIP solutions and will promote these applications to businesses within our Group as well as other gas companies.

Towngas Lifestyle Cloud (TLC), a smart cloud platform connecting three core cloud systems (gas, smart kitchens and lifestyle services), achieved synergy between our extended businesses and gas business. As at the end of 2023, TLC had a total of 17 million members.

# Diversified Businesses

**The Group achieved positive results in its diversified businesses in 2023. We not only made remarkable progress with our investments in green energy and other innovative projects, but also expanded our manufacturing and engineering service offerings into new markets to support our core businesses and generate sustainable returns for stakeholders.**

## Sustainable Energy

The strategic successes with profit realisation achieved by EcoCeres, Inc. (EcoCeres) since its establishment in 2021 are testaments to the advances made by the Group in sustainable energy.

Incubated as an eco-innovation company, EcoCeres has launched proprietary technologies that convert waste-based biomass into a diverse range of renewable fuels and products, including sustainable aviation fuel (SAF), hydro-treated vegetable oil (HVO) and cellulosic ethanol. These have positioned EcoCeres as a key player in the promotion of green energy alternatives, with its renewable products becoming a part of everyday life. During the year, EcoCeres achieved robust financial performance with strong growth.

EcoCeres improved its SAF product yield during the year to over 100,000 tonnes, making it one of the world's leading SAF producers in 2023. Its production facility in Zhangjiagang, Jiangsu province, continued to operate smoothly, while the construction of the production facility in Johor, Malaysia, made satisfactory progress. Upon its completion, the Malaysian facility will

more than double the company's production capabilities for SAF and HVO. In addition, EcoCeres set up a Centre of Excellence in Singapore and a Commercial Centre in Zug, Switzerland. These new establishments highlight EcoCeres' commitment to expanding the supply of renewable fuels and products on a global scale.

Another renewable energy source with great potential is green methanol, a low-carbon biofuel and circular chemical, which we are developing in line with our vision of achieving carbon reduction. In 2023, we achieved remarkable progress with our methanol plant in the Inner Mongolia Autonomous Region. After completing the plant's first upgrade stage, we were able to begin producing green methanol using end-of-life tyres as a feedstock, thereby reducing the use of coal. This project obtained certifications under the ISCC EU and ISCC PLUS schemes, demonstrating that the products meet the European Union's requirements for sustainable biofuels and chemical products.

Today, only a few companies possess the necessary production capacity and meet the certification requirements for large-scale

production of green methanol. Our first shipment of green methanol was delivered in October 2023. Capitalising on the substantial demand for green methanol in the maritime low-carbon fuel market, we expect to increase green methanol production capacity from 100,000 tonnes in 2023 to 120,000 tonnes in 2025.



**Our plant in the Inner Mongolia Autonomous Region produces green methanol for the shipping industry.**

## Engineering

U-Tech Engineering Company Limited (U-Tech) continued to provide utilities installation, infrastructure construction and civil and building services engineering for public and private projects. Recognised for its technical expertise and trenchless technologies, U-Tech won the building services contract for a project at Ma Wo Road, Tai Po, during the year. This electrical installation project, the largest we have ever received, comprises seven blocks of residential towers with 1,662 units. The engineering business further expanded its scope to include the civil engineering works for the Tung Chung East and Tung Chung West railway stations. In future, U-Tech expects to extend its portfolio into installations of equipment in data centres and railways, which is anticipated to generate significant returns.

## Manufacturing

M-Tech Metering Solutions Company Limited (M-Tech) is a wholly-owned subsidiary of the Group that specialises in designing and manufacturing smart gas meters. Offering smart meter devices with cutting-edge technologies such as micro-electromechanical systems and narrowband Internet of Things, M-Tech delivers products with a wider measuring range and smart features that enhance customer safety. In 2023, M-Tech obtained patents issued by the China National Intellectual Property Administration for two models. The company was also named a National High and

New-Technology Enterprise by the Shenzhen Science and Technology Innovation Commission.

During the year, M-Tech began preparing an in-depth cooperation agreement with a renowned Japanese meter R&D company to produce a new generation of ultrasonic flowmeters. An ultrasonic flowmeter is only one-third the size of a turbine meter, is maintenance-free with very few moving parts, and has a built-in lithium battery capable of lasting over ten years under normal use.

G-Tech Piping System (Zhongshan) Company Limited (G-Tech) continued to maintain its leading position in the market for polyethylene (PE) pipes during the year. It is engaged in the development of advanced high-quality PE piping and related ancillary products with the support of GH-Fusion Corporation Limited (GHF) – a joint venture between Towngas and Fusion Group (United Kingdom), which specialises in PE fittings. Located in Zhongshan, Guangdong province, and Maanshan, Anhui province, G-Tech's plants have a total annual production capacity of more than 20,000 tonnes of pipes, making it a leader in this market. Through a partnership with AVK Group, GHF will expand the plant and upgrade its production capabilities to further open up overseas markets.

## Telecommunications

With unrivalled network connectivity, world-class data centres and diversified ICT services, Towngas

Telecommunications Company Limited (TGT) operates businesses spanning Hong Kong, the Chinese mainland and overseas to serve the needs of telecommunications service providers, operators and corporations.

During the year, TGT's joint ventures TGT China Cloud Data Services (Harbin) Company Limited, TGT Data Service (Dalian) Company Limited, and TGT Data Services (Dongguan) Company Limited successfully obtained value-added telecommunications service licences to provide customers with comprehensive internet data centres services and internet access services. In addition, TGT collaborated with Henderson Land Development Company Limited (Henderson Land) to provide one-stop smart building solutions for its commercial and residential buildings, including its commercial landmark, The Henderson. This partnership helped Henderson Land attain the most sought-after Double Platinum Certification on WiredScore and SmartScore.



M-Tech's smart residential meter is equipped with a RISC-V encryption chip for secure data transfer.