

# THE MAINLAND UTILITY BUSINESSES



Radiant heating at a construction machinery plant in Xuzhou, Jiangsu province



Eight new city-gas projects, taking the total to 127 projects, serving around 18.98 million customers



Named the Company of the Year at the Gas Industry Awards



Sales of gas appliances reached a record high of 720,000 units

# VITAL MOMENTUM



# THE MAINLAND UTILITY BUSINESSES

Celebrating 20 years since the establishment of its first joint venture in mainland China, in 2014 Towngas continued to expand the scope and breadth of its activities in this vital market. Motivated by a desire to provide excellent service in pursuing a range of projects and investments across the country, we are rising to the challenges and opportunities presented by China’s evolving clean energy landscape and priorities.

## Our City-gas Operations

In mainland China, the prospects for natural gas remain buoyant, despite sharp falls in both coal and crude oil prices. The cost of natural gas increased in 2014, while further challenges are presented by China’s GDP growth slowing to 7.4 per cent, lower than forecast, and signs of a downturn in new home construction and property sales in many cities.

In the face of these unfavourable factors, we recorded 14 per cent

growth in gas sales volume, which reached 15.2 billion cubic metres for the year, accounting for a tenth of the national urban gas market. The Chinese economy remains underpinned by a strong industrial and manufacturing base, solid infrastructure and sound logistics, while both environmental considerations and a desire for clean-burning energy are feeding the country’s increasing appetite for natural gas.

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



Natural gas is harnessed for spray-painting at an automobile factory in Suzhou, Jiangsu province.

China has set its course on reforming energy production and consumption. Published in June 2014, the State Council's Energy Development Strategic Action Plan (2014-2020) identifies natural gas as the best solution to satisfy energy demands and solve environmental challenges, including persistent hazy atmospheric conditions, and affirms its use can have multiple economic, environmental and social advantages. The International Energy Agency has estimated demand for natural gas in China will increase by 90 per cent in the next five years.

Significant milestones were reached in gas supply sourcing in 2014. In November, China concluded an



With the slogan "Hearing Our Smiles", our 24-hour hotline offers caring, efficient and competent customer service.

**In November 2014, we inaugurated Zhuojia Public Engineering, the Group's first gas pipe system prefabrication business, in Maanshan, Anhui province. Raising efficiency and quality whilst lowering costs, this subsidiary prefabricates pipe systems for natural gas and water distribution, and is expected to have provided 60,000 such systems for new residential units by the end of 2015.**

agreement with Russia under which the latter will supply 68 billion cubic metres of piped natural gas annually, helping to secure a significant proportion of the country's energy needs going forward. The pipeline projects for importing natural gas from Central Asia and Myanmar were also commissioned. With more supply coming on board, particularly in the northeastern and southeastern regions of the country, the gas industry has an opportunity to expand its market share.

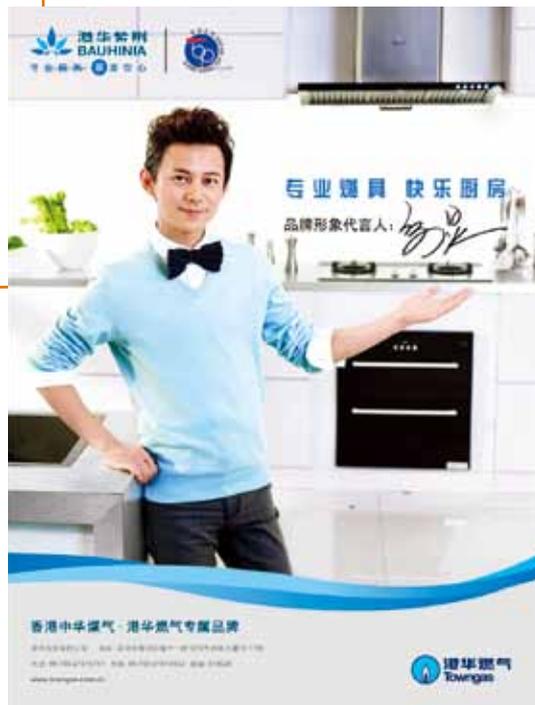
With favourable natural gas utilisation policies also resulting in demand continuing to strengthen, the Group will look to seize on what is a golden opportunity to foster

development and increase the scale and profitability of its city-gas business in mainland China. As a clean energy supplier we are focused on replacing dirtier fuels, both coal and oil, ensuring a reliable and safe supply that can power China's changing and fast-urbanising economy as the government looks to promote indigenous consumption.

In 2014 we added eight new city-gas ventures to our portfolio, including two in new provinces for us – Guizhou and Yunnan provinces. The Group now operates 127 city-gas projects in mainland China, covering 23 provinces, autonomous regions and municipalities and serving around 18.98 million residential and business accounts.

Towngas China was honoured to be named the Company of the Year at the Gas Industry Awards, organised jointly by the Institution of Gas Engineers & Managers of the United Kingdom and the Energy and Utilities Alliance. It was the third time Towngas Group had won this award, but the first time a mainland China gas enterprise had been honoured, and was therefore a major milestone for us, reflecting an endorsement of our efforts to extend and anchor the Group's vision, mission and values in the mainland gas market.

For our new marketing campaign, we appointed He Jiong, the well-known mainland TV host and actor, as the spokesperson for Bauhinia appliances.



### Midstream Facilities

Our goal of becoming a leader in the region's energy market advanced further in 2014 as we continued to build our midstream business with a range of pipeline and facilities projects that generated satisfactory returns while supporting the downstream city-gas markets. These include natural gas pipeline projects in Anhui, Hebei and Liaoning provinces; natural gas extension projects in Jilin and Henan provinces; and our Guangdong LNG Receiving Terminal project.

We started work on an underground natural gas storage project in Jintan, Jiangsu province, which will allow for

storage of pressurised natural gas at salt cavern. When it is completed in 2020, the total gas storage capacity at the 10 caverns deployed will be up to 400 million cubic metres. The project will help us manage our gas inventory through mitigating supply bottlenecks during peak seasons to meet downstream demand. The facility will also be used for gas trading when that commodity market opens.

### Water Supply and Wastewater Operations

Leveraging the similarities between natural gas and water supply in terms of technical and operational expertise, our water supply and wastewater operations in mainland China are managed and run by Hong Kong & China Water Limited (Hua Yan Water). The Group currently operates six water projects, including water supply joint venture projects in Wujiang district, Suzhou, Jiangsu province and in Wuhu, Anhui province; wholly-owned water supply projects in Zhengpugang Xin Qu, Maanshan and in the starting area of Jiangbei Concentration Zone, Wuhu, both in Anhui province; and an integrated water supply and wastewater treatment joint venture project, together with an integrated wastewater treatment project for a special industry, both in Suzhou Industrial Park, Suzhou, Jiangsu province.

Regular pipeline inspections ensure a reliable gas supply.



As demand for clean water has grown steadily, we now provide water to 1.04 million households and businesses. Sales volume grew by 2.3 per cent to 424 million tonnes in 2014.

A modern water purification plant with annual production capacity of 70 million tonnes was built and commissioned in Suzhou Industrial Park. Proper wastewater treatment is hugely beneficial in terms of protecting the environment and preventing water supply contamination, a critical priority in mainland China.

With support from the Ministry of Housing and Urban-Rural Development, as well as local governments, we also staged the Hua Yan Water Forum 2014, with

more than 20 water companies and over 150 industry leaders and specialists coming together to discuss water source safety, water supply management and intelligent water scheduling in Suzhou, Jiangsu province.

### Serving Our Customers

The Group is committed to the highest standards in customer service and customer relations, and our mainland businesses excelled in this vital area in 2014, winning a total of eight awards in China's Best Customer Service Awards. Improving our processes and nurturing a customer-oriented culture is one of our top priorities and we constantly strive to better our performance in this regard.

In 2013 we initiated the Dandelion Scheme, an elite customer service training scheme, with certified trainers now delivering exclusive programmes across Group businesses. Our Customer Safety and Service Workshop meeting brought around 460 people from 118 ventures together to reinforce the Group's standards in these areas.

We also expanded our network of customer centres by 13 in 2014. We now have a total of 228 such centres in 80 mainland cities, offering customers a one-stop experience that complements our overall dedication to service excellence.

We strive to offer more convenience to increase customer satisfaction. During the year, we signed a strategic co-operation agreement to link our self-developed billing and payment system with UnionPay Merchant Services. We also introduced self-service payment at customer centres and continued to promote online and mobile payment methods.

Our flagship appliance brand, Bauhinia, is renowned for providing high quality products that conform to the highest safety standards. In 2014, we introduced 34 new models of Bauhinia appliances, including cooking hobs and water heaters. With the help of a successful marketing campaign, sales grew by 11 per cent, with around 720,000 units of appliances sold in 2014, taking total sales to over 2.9 million

since 2005 and helping to cement the brand's leadership position in the sector. The brand's success has also enhanced home gas safety across the mainland market.

## Safety

Aiming to be the safest national city-gas operator in the country, we are proud that even as our customer base has grown considerably, serious gas-related incidents have gone down by 48 per cent in the last five years. We are determined to ensure customer and public safety and maintain the Group's hard-earned position as a leader in gas safety.

In 2014 – which was themed the “Year of Safety Re-inspection” across Towngas China – we conducted comprehensive production safety re-inspections at our gas facilities, installations and networks around mainland China. We also performed audits of security and risk management and project supervision involving some 30 mainland businesses.

We provided gas safety training across the board and conducted Health, Safety and Environment management workshops. During the year we held our first Pipeline Network Operation Competition among our mainland companies, in which contestants were tested on their technical knowledge, emergency procedures, work regulations and procedures, and proper handling of equipment.

## Utility Businesses in Mainland China in 2014

### 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	–	1,980	26.8%
Chaoan	2007	185	99	60%
Chaozhou Raoping	2011	189	106	60%

#### Central China

Wuhan	2003	1,200	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	85	34	100%
Fengxian	2009	60	31	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	600	50%
Fengcheng	2007	206	88	55%
Pingxiang	2009	87	35	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%
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#### Northern China

Jilin	2005	247	100	63%
Beijing Economic-technological Development Area	2005	111	44	50%
Hebei Jingxian	2011	186	79	81%

#### Northwestern China

Xi'an	2006	1,668	1,000	49%
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#### Hainan Province

Qionghai	2008	110	50	49%
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**MIDSTREAM PROJECTS**

	Year of Establishment	Project Investment Rmb M	Registered Capital Rmb M	Equity Share %
Guangdong LNG	2004	8,595	2,578	3%
Anhui NG	2005	750	252	27.5%
Hebei NG	2005	2,760	920	45%
Jilin NG	2007	360	220	49%
Henan NG	2012	125	50	49%
Jintan NG	2013	180	100	64%

**LNG REFILLING STATION**

Nanjing (Marine)	2014	600	204	40%
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**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	157	63	100%
Jiangbei	2013	150	75	100%

**TOWNGAS CHINA PIPED CITY-GAS PROJECTS****Guangdong Province**

Foshan  
Shaoguan  
Qingyuan  
Yangdong  
Fengxi

**Eastern China**

Nanjing Gaochun  
Dafeng  
Tongshan  
Maanshan  
Bowang  
Zhengpugang Xin Qu  
Modern Industrial Zone  
Wuhu Fanchang  
Bozhou-Wuhu Modern  
Industrial Zone  
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

**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

**Inner Mongolia**

Baotou

**Southwestern China**

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

**MIDSTREAM PROJECT**

Wafangdian NG

**CNG REFILLING STATION**

Qiqihar

**OTHER PROJECT**

Zhuojia Public Engineering

# THE HONG KONG GAS BUSINESS



The stylish new CURVA series of cabinets from Mia Cucina, our premium kitchen solutions brand



Made substantial home cooking market gains with Mia Cucina and Scholtès, our high-end kitchen solutions brands

Hosted the international gas industry event – Gas Information Exchange in the Western Pacific Area (GASEX) Conference and Exhibition

Launched Cook for Love marketing campaign

# AN ENERGISED UTILITY



# THE HONG KONG GAS BUSINESS

Since 1862, we have continually set the benchmark in Hong Kong in terms of service, operational excellence, engineering and safety. We are devoted to providing our customers with safe and reliable energy, and to broadening the scope of our activities through ongoing innovation. As we look to retain our leading position in our home market and expand our horizons, we will continue to be guided by our core corporate values of integrity and total quality management.

## Our Residential and Commercial Activities

Our Hong Kong business continued to grow steadily throughout 2014. The volume of gas sales rose by 1 per cent, while our customer base further expanded to a total of 1,819,935 accounts, an increase of 21,204 over the previous year.

Despite a slowdown in local consumer spending, the restaurant and hotel sectors – benefiting from continuous growth in the number of inbound tourists – continued to progress well during the year. As a result, commercial and industrial gas sales increased in 2014.

Our efforts to support businesses in the switch from diesel to town gas for both economical and environmental reasons also continued to reap rewards. The hospital sector enjoyed growth of 5.7 per cent, mainly due to a diesel-to-gas boiler conversion



Ocean Park's Shark Mystique attraction utilises our energy-efficient gas-fired absorption chiller to control the water temperature of the aquarium.



project at Yan Chai Hospital and North Lantau Hospital being operational for its first full year.

The government and industrial sectors showed outstanding performance, with volume growth of more than 6 per cent and 4 per cent respectively. This was mainly due to gains from newly commissioned heated public swimming pools, gas absorption chillers and gas desiccant dehumidifiers being introduced to theme parks, newly acquired laundry clients, and the expansion of a food factory.

Two major contracts were secured in 2014. A new facility due to open in 2016 at the Yuen Long Industrial Estate will see business from an existing laundry client double. The phase two absorption chiller at a theme park in Lantau will

We staged Asia-Pacific's biennial GASEX Conference and Exhibition in Hong Kong, promoting the exchange of information on developments and innovation across the gas industry. Focused on the theme of "Advancing the Gas Value Chain", this year's exhibition attracted about 100 exhibitors from around the world, with more than 500 industry professionals attending.

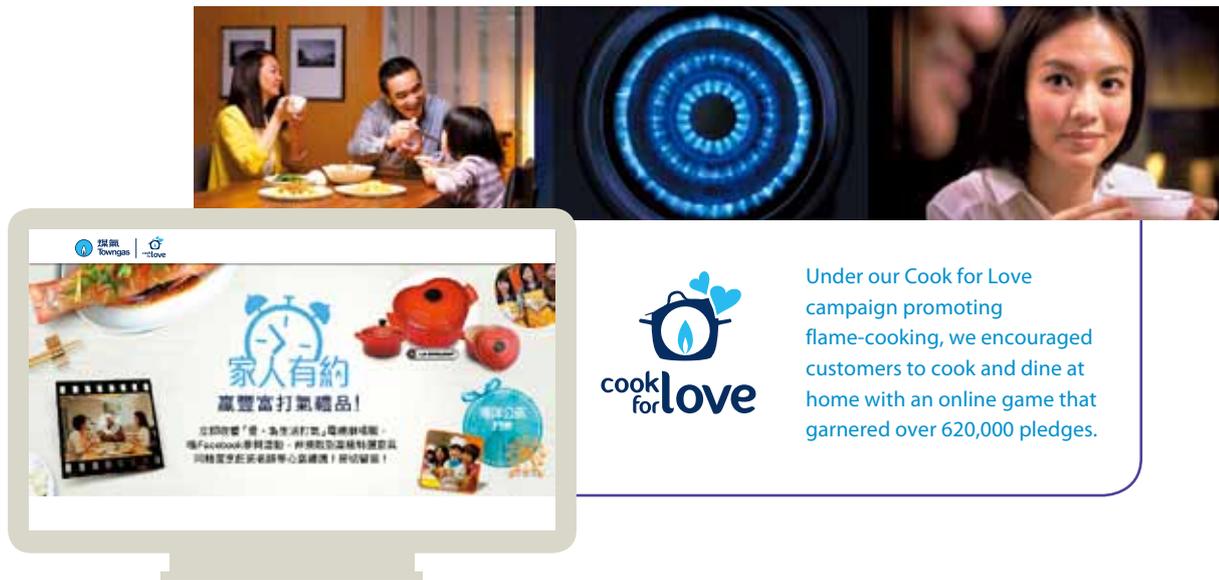
be operational in 2015, and a new on-site hotel will open in 2017, representing a significant uplift in gas sales.

We also played an important role in the food and beverage market. In view of manpower shortages, a growing problem in the restaurant trade, we introduced a series of state-of-the-art, labour-saving automated applications, ranging from an auto-tossing gas wok range to a smart meat roaster, an auto gas deep fryer and a smart claypot rice

### Number of Customers

Company (Thousand)





Under our Cook for Love campaign promoting flame-cooking, we encouraged customers to cook and dine at home with an online game that garnered over 620,000 pledges.

cooker. In addition, we sponsored the Taste of Hong Kong Awards, in which the assessment board invited mystery diners to appraise high quality restaurants around the city.

With the reputation for superior quality, Towngas' high-end kitchen solutions brands, Mia Cucina (kitchen cabinets) and Scholtès (kitchen equipment) are targeted at high-end retail customers and property developers for bulk installation. In 2014, we introduced CURVA, a new range of stylishly-designed, curved-lined cabinets well-suited to spatially-restricted Hong Kong homes on account of their smooth angles.

We put a great deal of effort into promoting flame cooking. During the year, a marketing campaign

themed "Cook for Love" was launched to encourage cooking and dining at home. This included a TV commercial and various online promotions, both of which received enthusiastic feedback from the public across different age groups. In December, we also sponsored a cookery TV programme featuring celebrities and renowned chefs preparing food by using Mia Cucina and Scholtès products. Looking forward, we will continue to promote our brand offering under the "Cook for Love" umbrella theme, whilst further exploring social media channels and enhancing our product range at retail level to create more customer touch-points and nurture all-round engagement.

Our Flame restaurant at Towngas Avenue in Tsim Sha Tsui began offering wedding with celebrant service in 2014. The venue's romantic setting, overlooking Victoria Harbour, and its flexible catering set-up make it perfect for parties and banquets. Moreover, our Cooking Centre in partnership with Disciples Escoffier Asia, one of the world's premier gastronomic societies, organised the Escoffier Diploma in Culinary Arts programme for cooking lovers.

### A Commitment to Customer Service

Technology has afforded us a number of exciting and innovative ways to enhance our service. Our Customer Service Hotline Centre is now powered by a state-of-the-art

call management system with enhanced functionality that embraces a wide range of voice and digital channels.

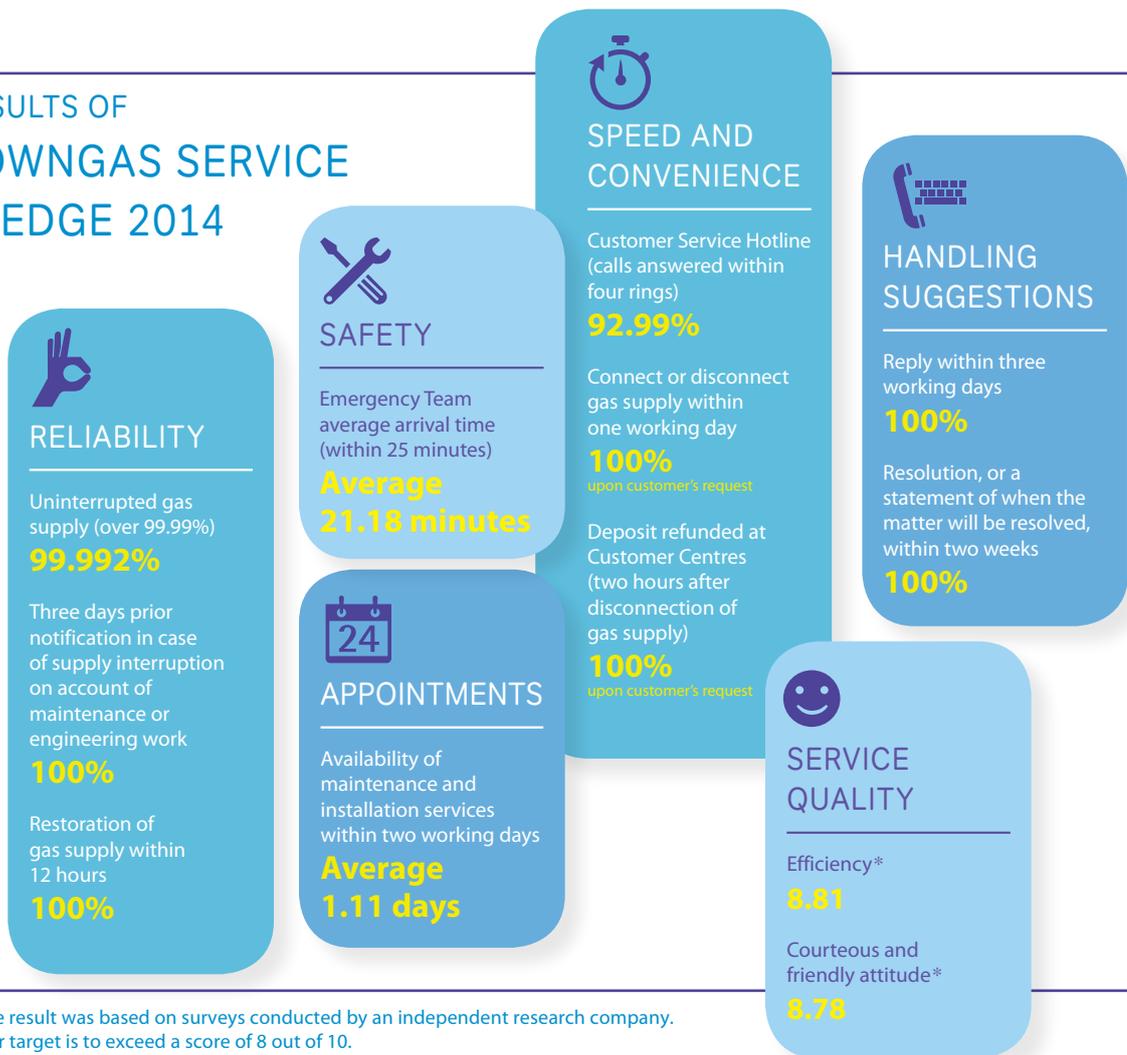
Improving the productivity of our inspection services is another way to ensure gas system integrity. In 2014 we rolled out our new 360-degree Total Riser Solution for inspections of gas risers attached to high-rise

buildings. This involves a quadcopter that enables inspections to be carried out efficiently without the need for erecting scaffolds, as well as a gondola equipped with stabilisers to scale premises. These systems greatly reduce waiting time and costs as well as improve overall safety by eliminating hazards from working at heights, and their value was recognised as Towngas proudly

gained the Safety Enhancement Programme Silver Award at the 13th Hong Kong Occupational Safety & Health Award.

In addition, we delivered refresher courtesy training for more than 1,100 frontline technicians, contractors and also sales and customer service hotline staff. We accumulated a total of 3,075 learning hours through the

## RESULTS OF TOWNGAS SERVICE PLEDGE 2014



\* The result was based on surveys conducted by an independent research company. Our target is to exceed a score of 8 out of 10.

programme, a major commitment in our ongoing efforts to enhance our service culture across key areas.

### Gas Infrastructure

In 2014, we continued to expand and upgrade our piped-gas network and infrastructure in Hong Kong to serve new and existing customers and enhance supply reliability.

The existing twin 400 mm diameter pipelines from Ma Tau Kok to North Point are being replaced by 450 mm ones. The submarine section of the project, from To Kwa Wan to North Point, is completed and the pipelines are expected to be commissioned by mid-2015.

The pipeline to bring natural gas from Sha Tin, via Beacon Hill Tunnel to Ma Tau Kok is now completed. Moreover, modifications to our Ma Tau Kok plant are also expected to be finished by mid-2015, after which natural gas will replace naphtha as the feedstock for the production of town gas at that plant. This change is expected to yield both economical and environmental benefits.

To enhance supply security in the North West New Territories, a 9 km long pipeline is being constructed along Castle Peak Road to Tai Lam. Targeted to be finished in 2016, work is about two-thirds completed.

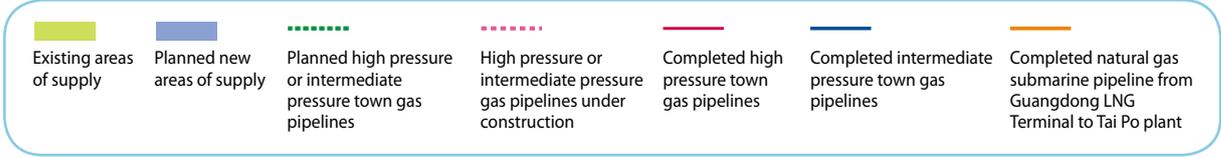
Planning is in progress to cope with the government’s future new town developments, and for infrastructure to support MTR Corporation’s major railway projects serving new residential areas.

In 2014, Towngas successfully gained ISO 55001 certification, the new ISO standard for asset management. New software was also developed that uses scientific methods to prioritise replacement work on ageing pipelines, based on information regarding their service age, location and operating conditions. Utilising our Geographic Information System, it enhances the asset management of the Company’s pipeline network.

Our new self-developed Riser Inspection Quadcopter can conduct a safety inspection on the service riser of a 30-storey building in an hour.



## Towngas Network in Hong Kong



# NEW ENERGY AND DIVERSIFIED BUSINESSES

Our new methanol upgrading  
process unit in Inner Mongolia





The plant in Inner Mongolia to upgrade methanol to automobile fuel substitute was undergoing commissioning



38 refilling stations now in operation, under planning or construction



Towngas Telecom celebrated 10 years of service and launched a new data centre in Tseung Kwan O

## CHANGING ENERGY FOR GOOD



# NEW ENERGY AND DIVERSIFIED BUSINESSES

In 2014, our new energy business continued to grow as a major pillar of our operations, with a focus on new technology applications. As China's national energy policy and energy mix changes and evolves, we are committed to developing new energy projects that are low in pollutant emissions. We continued to extend our liquefied natural gas (LNG) value chain and also advanced our biomass technology and methanol upgrading capabilities. As we remain focused on "Expanding New Horizons", our solutions will not only drive further growth for Towngas but also meet the challenges of a changing energy economy in the years ahead.

## New ECO Energy

ECO Environmental Investments Limited (ECO) is fundamental to our new energy vision and commitment to environmental protection. It is also a trailblazer in developing and deploying state-of-the-art technology to produce clean fuels.

Haze and air pollution are growing concerns on the mainland, and with the Chinese government binding the country to a 2030 cap in total carbon emissions, we can expect to see a growing migration from conventional land and marine transport fuels, greater recycling of industrial by-products and breakthroughs in converting agricultural waste into useful, eco-friendly energy products.

Drawing on the Group's rich breadth of chemical processing knowledge and engineering experience, ECO's focus is on developing technological innovations based around converting low-grade resources –

such as by-products of industrial and agricultural processes – into high-value products in clean and cost-effective ways.

One key strategy for ECO is to develop its LNG value chain. On the supply side, our pioneering liquefied coalbed methane (LCBM) plant in Shanxi province has been running smoothly and registered a double digit increase in production in 2014, with

continuous process improvement expanding annual capacity to 250 million cubic metres. We are beginning to extend our LNG capabilities to cover other unconventional resources, the near term one being coke oven gas (COG), a by-product of the coke-making industry which can be synthesised into methane and then liquefied into LNG. Our first two such facilities – in Xuzhou, Jiangsu province, and Heze, Shandong province – are now under construction and will each have output capacity of 75,000 tonnes annually. Upon their completion, by the end of 2015, these two facilities will greatly reinforce



ECO's research and development efforts are focused on the conversion of low-grade feedstocks into high-value energy products.



We deployed a new process to convert methanol into a higher value automobile fuel substitute at our methanol plant in Inner Mongolia.

our LNG supply capabilities in central and eastern China.

Our next targeted unconventional resource for LNG purposes is agricultural waste. This requires two innovative technologies developed by our research and development team – one to gasify agricultural waste into syngas, the second to turn syngas into methane for liquefaction. Work on these ground-breaking applications is maturing, and they are expected to be ready for commercial implementation by mid-2015.

On the demand side of our LNG activities, our gas refilling stations either in operation or under planning or construction increased in number in 2014 to 38. ECO's wider network of natural gas refilling stations is gradually taking shape, amongst others, in Shaanxi, Shandong, Shanxi, Henan and Liaoning provinces. We will continue to accelerate the

growth of this network across mainland China. The stations provide clean LNG and compressed natural gas primarily to commercial vehicles as a substitute for the more polluting diesel. This will help mitigate the wide-spread and persistent hazy atmospheric conditions in the country, which are partially caused by pollutants from vehicular emissions.

Another exciting area of development concerns methanol. Our coal-based methanol plant in Inner Mongolia employs clean coal technology to generate syngas, which is then synthesised into methanol. It has been running smoothly and produced 240,000 tonnes of methanol in 2014. De-bottlenecking work at the plant is near completion and will boost the output capacity to 300,000 tonnes per annum. In November, we started commissioning of an

additional clean methanol upgrading process to turn methanol into 140,000 tonnes of natural gasoline (a gasoline substitute chemical product) annually. We envisage this innovative process route will have huge market potential.

ECO's two major businesses in Hong Kong – an aviation fuel facility servicing Hong Kong International Airport, and dedicated liquefied petroleum gas (LPG) vehicular refilling stations – are operating smoothly. The ECO Aviation Fuel Facility supplied 5.8 million tonnes of fuel to the Hong Kong International Airport in 2014 and contributes steadily growing returns of investment. Our five designated LPG refilling stations serve 18,000 taxis and most of Hong Kong's minibuses round the clock, with sales accounting for roughly 30 per cent of the city's automobile LPG market.

In terms of our upstream oil business, our onshore oilfields in Thailand had a remarkable year, with several high yield wells successfully hit. Its crude oil production increased significantly to reach 6,000 barrels a day and an annual record of 1.4 million barrels,

ECO's pioneering LCBM plant in Shanxi province has been operating smoothly.



bringing substantial additional revenues despite the sharp fall in international crude price since the middle of the year.

Looking ahead, ECO will continue to be a leader in unconventional energy focusing on developing and employing cutting-edge technology to produce clean fuels to feed growing demand in mainland China and beyond.

## Telecommunications

With global use of data increasing exponentially, there is great demand for data processing and cloud computing services, and Towngas Telecom (TGT) has expanded in response to that demand with robust infrastructure and services. Leveraging the Company's vast gas pipe network by deploying advanced Glass-In-Gas technology, TGT has made the most of its competitive advantage in terms of cost and speed of underground fibre-optic deployment. We have provided fibre links and dedicated bandwidth service to large corporations, SMEs, telecommunications carriers and international network service providers.

In December 2014, TGT celebrated its 10th anniversary with the opening of a data centre in Tseung Kwan O, our second centre in Hong Kong. The state-of-the-art Tier 3+ data centre has a floor space of 22,000 square metres and is able to accommodate 3,000 server racks, half of which have been reserved since the centre's launch. By the second quarter of 2015, two data centres will be opened in Dongguan, Guangdong province, and Dalian, Liaoning province. TGT plans to expand its data centres to 10 in total in Hong Kong and mainland China in the coming three years.

In 2014, TGT also launched various new cloud computing services. Most notably, ACT, launched in collaboration with Aliyun, Alibaba's cloud computing subsidiary, provides a secure, cost-effective cloud platform for SMEs and software developers in Hong Kong, mainland

China and further afield. Given the continuing trend towards outsourcing of hosting and telecommunications services to third-party operations, we expect TGT to experience significant growth in the years ahead.

## Information Technology

In 2014 we launched S-Tech Technology Holding Limited (S-Tech), a wholly-owned subsidiary whose principal operations include product development, solution implementation and system integration.

S-Tech hosts SMEs' infrastructure and software, from financial systems to point-of-sales, billing and corporate management solutions, offering cloud computing applications and other IT products as well as consulting services to companies both inside and outside of the Towngas Group.

Providing a one-stop-shop service for SMEs, S-Tech is headquartered in Hong Kong, with a mainland China branch in Zhuhai, Guangdong province. Its Towngas Customer Information System Integrated Cloud Solution won a Gold Award at the Hong Kong ICT Awards, in the Best Business Solution (Application) category. The award winning system is now being widely used among our city-gas project companies in mainland China via a cloud platform, which helps reduce system capital outlay and operating costs, in addition to a much shorter implementation time.

### Civil and Building Services Engineering

Our wholly-owned subsidiary U-Tech Engineering Company Limited (U-Tech) enjoyed another excellent year, providing consultancy services and engineering contractor works on utilities installation, infrastructure and building services for public and private projects in Hong Kong and Macau.

During the year, U-Tech completed an electrical installation project covering 2,000 flats across phases two and three of a residential development in Lok Wo Sha, Shatin.

Located in Tseung Kwan O, our state-of-the-art TGT Hong Kong Data Centre 2 is able to accommodate 3,000 server racks.

Our construction of a large scale box culvert and a sewage pumping station for the Kai Tak Development Area also progressed well, as did a 60 km water supply pipeline replacement and rehabilitation project in the New Territories. The project was started in 2011 and is due to be completed in 2015, while another project, involving the laying of 1.9 km of water main in Tai Po, is on course for completion towards the end of 2016.

U-Tech was also awarded a number of new contracts during the year, including a contract from the Highways Department to construct a pedestrian link at Tsing Yi Station and a coach lay-by at Sai Kung. It also won a contract to undertake electrical installation work for phases four and five of the Lok Wo Sha residential development, as well as electrical and MVAC (air-conditioning) installation contracts for a hotel development at Wo Yi Hop Road, Kwai Chung.

### Manufacturing Facilities

As part of our commitment to maintaining the highest standards of safety across the supply chain, we design and manufacture polyethylene (PE) piping and jointing parts for both gas and water systems.

G-Tech Piping System (Zhongshan) Company Limited (G-Tech), our wholly-owned subsidiary, continues to supply piped gas operators with quality PE pipes manufactured under stringent quality control. It has expanded its distribution coverage with new logistics hubs and warehouses in Liaoning, Jilin and Shandong provinces. The business has been supported by GH-Fusion Corporation Limited, our joint venture with the British Fusion Group, which specialises in PE fittings.

In 2014, G-Tech's overall sales increased by about four times compared to 2013, with production





G-Tech's manufacturing plant in Zhongshan supplies gas operators with PE pipes manufactured to the highest standards.

capacity now surpassing 4,000 tonnes. Production capacity will be further increased in 2015.

M-Tech Metering Solutions Company Limited (M-Tech) strives to develop and bring to market the latest smart gas meter solutions. M-Tech's smart

gas meters using Micro-Electro-Mechanical Systems (MEMS), are not affected by the temperature or pressure of the gas they measure and therefore provide more accurate readings. M-Tech is now developing a series of new MEMS models to replace traditional diaphragm gas meters.

In 2014 the subsidiary achieved High-Tech Enterprise status – a national level qualification in mainland China that comes with tax advantages. A total of 89 Towngas China's companies have now purchased M-Tech's smart gas meters. We are looking into supplying smart gas meter solutions to all our city-gas businesses, as well as to other gas operators in mainland China and overseas.

## New Energy and Other Projects in 2014

### NEW ENERGY PROJECTS

#### Coal Mining

Jiangxi Fengcheng	2008	1,100	236	25%
Inner Mongolia Erdos Xiaoyugou	2009	447	120	70.1%
Inner Mongolia Erdos Kejian	2011	450	150	100%

#### Coal-based Chemical

Jiangxi Fengcheng	2009	1,250	350	40%
Inner Mongolia Erdos	2009	1,170	400	70.1%

#### CNG/LNG Refilling Stations

Shaanxi Xianyang	2008	12	12	100%
Shaanxi Huitai	2010	54	27	100%
Anhui Maanshan	2006	15	11	30%
Shanxi Yuanping	2008	40	20	42%
Dalian DETA	2010	40	20	49%
Shandong Chiping	2010	30	15	100%
Shandong Jining	2010	11	8	100%
Shandong Dongping	2010	43	26	91%
Henan Xinmi	2010	29	15	100%
Shandong Jiaxiang	2012	50	28	70%
Henan Anyang	2012	29	14	100%
Shanxi Lingshi	2013	25	20	75%
Guangdong Guangzhou	2013	26	13	100%

## NEW ENERGY PROJECTS

### CNG/LNG Refilling Stations

	Year of Establishment	Project Investment Rmb M	Registered Capital Rmb M	Equity Share %
Henan Kaifeng	2013	29	15	100%
Henan Linzhou	2013	30	20	100%
Shanxi Pinglu	2014	27	14	100%
Shandong Weishan	2014	58	29	100%
Shandong Shanxian	2014	28	14	100%
Hebei Shijiazhuang	2014	65	31	80%
Shaanxi Lueyang	2014	21	13	100%
Inner Mongolia Huhhot	2014	28	14	90%
Shandong Linqing	2014	22	13	100%
Xingtai Ningjin	2014	20	17	80%
Shaanxi Fengxiang	2014	30	15	100%

### Upstream Projects

Shanxi LCBM	2006	600	200	70%
Jilin Tianyuan	2007	140	5	50%
LCMM Project	2010	520	180	50%
Xuzhou COG	2014	453	151	80%
Heze COG	2014	450	150	70%
Jiexiu COG	2014	480	250	60%

### Coal Logistic Project

Shandong Jining Jiexianggang Logistic Port	2011	540	180	55%
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## TELECOMMUNICATION PROJECTS

Shandong Jinan	2008	80	40	90.1%
Shandong Jinan Chibo	2009	170	68	65.5%
Liaoning Dalian DETA	2010	14	10	49%
Dalian Yida	2011	190	76	90%
Shandong Laiyang	2011	14	10	90%
Xuzhou Fengxian	2011	11	8	100%
Xuzhou Peixian	2013	13	9	100%
Harbin	2013	158	63	80%
Dongguan	2013	240	80	60%
Shenzhen	2014	59	29.5	100%
Beijing Zhongjing	2014	14	10	49%
Beijing Chibo	2014	14	10	90%

## OTHER PROJECTS

Shenyang Sanquan Construction Supervisory	2011	4	3	60%
M-Tech	2011	30	30	100%
GH-Fusion	2002	87	43	50%
Towngas Technology	2011	30	21	90.1%
Suzhou Industrial Park Broad Energy Services	2012	170	71	25%
G-Tech	2013	27	13.5	100%
GH Yixing Ecology	2013	184	184	100%
S-Tech (Zhuhai)	2014	7	5	100%
Zhangjiagang (Chemical)	2014	610	205	100%
ECO Engineering Management (Shenzhen)	2014	30	15	100%
ECO Engineering Management (Xi'an)	2014	13	9	100%

## OILFIELD PROJECT

Phetchabun Province in Thailand	2012	181	12,000	100%
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Year of Establishment	Project Investment Rmb M	Registered Capital Rmb M	Equity Share %
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Year of Establishment	Project Investment USD M	Registered Capital USD	Equity Share %
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# CORPORATE SOCIAL RESPONSIBILITY



Towngas volunteers actively participate in our organic farming activities



Agreement signed on SENT landfill gas utilisation project to turn waste gas into energy



Launched Fun Living Series campaign to promote work-life balance among employees



Introduced a new initiative to install toilet washlets in elderly hostels

# DRIVING SUSTAINABILITY FORWARD



# CORPORATE SOCIAL RESPONSIBILITY

As a leading supplier of low carbon emission energy in Hong Kong and mainland China, we consider that the sustainability of our business is people-focused and people-driven. As we look to provide the environmentally-friendly energy solutions of tomorrow, our success depends on the trust of our employees, customers, business partners and the general public. As such, we make a total commitment to conduct our business in an ethical and responsible manner. This is the foundation of our promise to care for our employees, the communities we serve and our planet.

## Caring for the Environment

As a responsible company committed to sustainable business practices and a greener future, we aim to provide our customers with quality products and services while minimising our environmental footprint. As such, we put great

emphasis on developing and nurturing a culture of caring for the environment both in our day-to-day operations and in our community initiatives.

A major milestone in the Company's green endeavours came in December 2014, when we signed an agreement with the operator of

the landfill site at Tseung Kwan O, for work to begin on the South East New Territories (SENT) landfill gas utilisation project. We will build a landfill gas treatment facility to turn landfill gas into synthetic natural gas, which will be integrated into the gas supply network. The project will reduce the emission of carbon dioxide by 56,000 tonnes a year,



The SENT landfill gas utilisation project is one of the largest energy conservation and emission reduction environmental projects in the territory.



We delivered 250,000 rice dumplings and 260,000 mooncakes to the less fortunate in 2014.

equivalent to the planting of 2.4 million tree seedlings. Construction work will begin in the second quarter of 2015 and the project is expected to be operational by mid-2016.

We also continued to support green groups' activities locally, including the WWF's annual "lights out" Earth Hour initiative, Conservancy Association's Green Leaders Bloc training programme, Friends of the Earth's Tree Planting Challenge and Green Sense's No Air-Con Night. In addition, we sponsored Greeners Action's Zero Food Waste at Campus programme through which primary school students are taught about food waste reduction and food recycling.

On the mainland, we continued to promote a culture of sustainability throughout 2014, with a series of

activities under the banner "Limited Resources, Infinite Recycling".

Activities included tree planting, essay and photography competitions and low carbon awareness events to call on our employees and customers to reduce resource consumption and alleviate pollution. We also once again organised a successful carbon reduction competition for our mainland companies and received 20 entries, with a combined estimated reduction of 20,202 tonnes carbon emissions.

During the year, Towngas China published its first corporate social responsibility report, in accordance with the Hong Kong Exchanges and Clearing Limited's Environmental, Social and Governance Reporting Guide and the Global Reporting Initiative's Sustainability Reporting Guidelines.

## Supporting Our Communities

2014 was another significant year for Towngas in terms of its community and volunteer programmes, as we continued to look outwards towards serving those most in need and fulfilling our commitment to good corporate citizenship.

In our annual Rice Dumplings for the Community programme, 250,000 rice dumplings were wrapped for donation, during the Dragon Boat Festival, to those in need in our communities, taking the total dumplings distributed since the programme's inception to over 2 million. On the mainland, we also donated over 100,000 rice dumplings during the festival.

During the year, we continued our Warmth and Care Fresh Food Aid Programme, aimed at providing food to low-income and single-parent families. In conjunction with Salvation Army and Tung Wah Group of Hospitals' social enterprise CookEasy, we provided fresh food packs twice a week to 150 needy families in Hong Kong.

Our Farming For Fun programme involved Towngas volunteers, accompanied by friends and family members, taking part in organic farming activities during weekends. Their produce was then donated to NGOs, who distribute it amongst the needy. The programme, earned the Outstanding Award in the Social Welfare Department's 2013-2014 Best Corporate Volunteer Service Project Competition.

Our newly launched initiative – Toilet Washlets for the Elderly programme was well-received by elderly beneficiaries and their carers. The programme enhances the independence of senior citizens – particularly those with limited mobility or poor eyesight – in their daily lives, through installing electrical toilet washlets with washing functions in elderly hostels. A total of 100 washlets had been installed by the end of 2014, bringing convenience to the elderly.

Towngas was involved in wide-ranging outreach schemes across mainland China in 2014. In the Companionship for Resident Children Programme, our volunteers visited the impoverished mountain areas in Chongqing for half a year. There they provided homework tutorials and gave everyday assistance to

children at the Home of Happiness and Peace, launched by the Beijing Global Village Environmental Education Centre to care for the rural children there and remould their village community.

Under the campaign of Gentle Breeze Movement, launched in 2013, we organised community activities in Xuzhou, Weifang and Jinan in 2014, donating stationery and daily supplies worth around RMB 720,000 in total to 13 primary schools.

### Caring for the Well-being of Our Employees

We believe the key to retaining talents and driving success is to care for the overall health and happiness of staff. By building a pleasant and harmonious corporate culture, we are rewarded with a motivated workforce.

Around HK\$200,000 raised through our "Mad Dog Café" programme has helped us deliver smart electrical toilet washlets in elderly hostels.





An indoor rowing competition was part of our Fun Living Series campaign aimed at enhancing employees' overall health and work-life balance.

In 2014, our Fun Living Series campaign was launched, with the theme of encouraging employees to cultivate a positive mindset and spirit as regards their health, work and family lives. Activities organised included: workshops on positive psychology, yoga at work, organic farming, rowing competition, health talks, and seminars about harmonious working relationships and children's emotional intelligence.

The Towngas Buddy Club, established in 2012 to provide opportunities for our retirees to get together and have fun with former colleagues, organised a number of activities in 2014, including day trips, buffet lunches, dinners and seminars.

Specific initiatives launched in 2014 by Towngas China included a health hotline, a scholarship programme for the children of staff, an Employee Assistance Programme and themed events including My Healthy Life, My Low Carbon Life and My Happiness.

### Developing Our People

In our continued efforts to ensure we are equipped with a sustainable and skilled workforce to meet the challenges of an ever-developing and expanding business, we allocate significant resources towards ongoing management, leadership and technical training. To support "Expanding New Horizons", our management theme since 2013, last year we continued to invest in our people to enhance their capabilities and provide opportunities for career development.

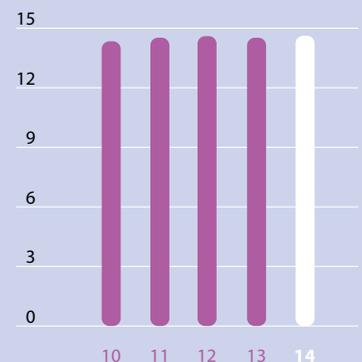
### Revenue per Employee

Company (HK\$ thousand)



### Town Gas Sales per Employee

Company (million MJ)



Our volunteers visited mountain areas in Chongqing and provided mentoring to local children under the Companionship for Resident Children Programme.



Having started in 2008, last year saw the launch of the third round of TLC+, our Corporate Leadership Development programme. A total of 20 good performing and high-potential middle management level employees from different business units were selected by a panel of senior executives to join this intensive 18-month fast-track development programme, which allows us to develop talents from within the group. The programme helps create a solid management foundation for the future, with management succession across all group ventures a key strategic priority.

In April 2014, Towngas co-operated with the Hong Kong Management Association to offer a series of leadership training workshops for

22 of our mainland managers, demonstrating our commitment to standardising the quality of management across the Group.

We ran a two-day in-house management programme targeted at helping middle-level technical managers transition into more senior managerial roles. Six classes were offered, involving 125 participants from across all pillars of the Group and from all regions. A Train-the-Trainer programme has been initiated for 2015 in order to roll out this core management skills programme to all our mainland companies. We also initiated a new general manager training programme on the mainland, with high-potential employees identified and provided with appropriate training.

Our Leading Others series was launched in 2012 with the aim of enhancing the people management and leadership competencies of our supervisory and managerial employees. In 2014, the programme offered a total of 12,000 training hours, representing another huge commitment to nurturing leaders within our ranks.

Our Graduate Trainee programme was accredited by the Institution of Gas Engineers and Managers, a UK-based professional engineering institution, as suitable for Initial Professional Development for Chartered Engineers. In 2014, Towngas hired 13 Graduate Trainees in Hong Kong who are now attached to various streams and departments in order to strengthen their technical knowledge and skills. Similar training schemes are being launched across our mainland businesses.

The Towngas Engineering Academy (TEA) – which strives to develop a competent workforce that drives the Group to excel in delivering safe operations, serve our customers and grow our business – is now implementing an internationally recognised engineering training system of its own for engineers both in Hong Kong and mainland China. TEA completed a total of 168,480 training hours in 2014.

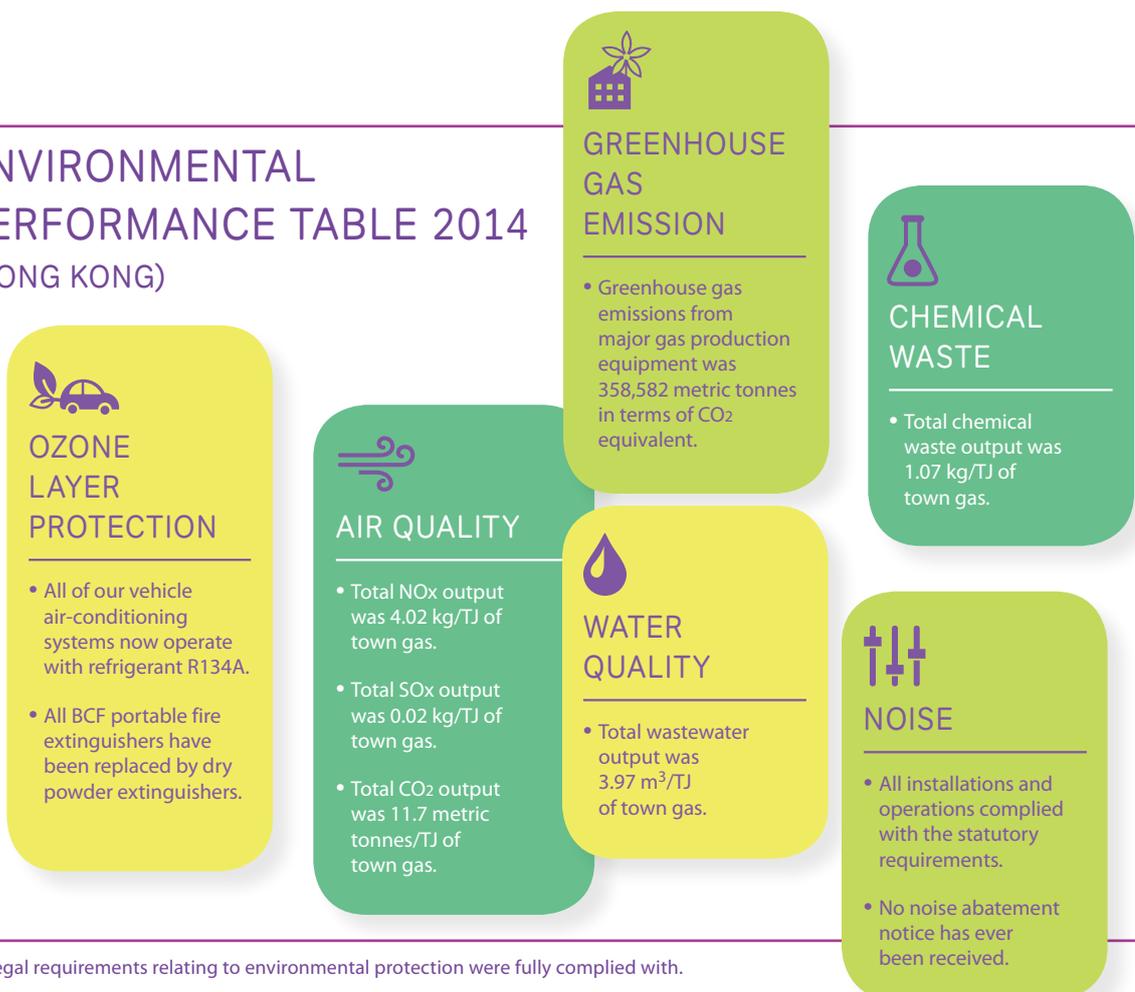
Rigorous yet efficient recruitment processes are essential to ensure that we hire talented people with the skill sets required to continue to develop our business in the right direction, and in 2014 we piloted a workshop on Competency-based Interviewing Skills for our senior executives. Additional programmes will be launched in 2015 to enhance the expertise of managers in this area.

## Putting Safety First

The health and safety of our employees, contractors, customers and the wider public has always been our highest priority.

In our ongoing commitment to improving safety performance, in 2014 we developed and implemented a Senior Management Regular Health, Safety and

## ENVIRONMENTAL PERFORMANCE TABLE 2014 (HONG KONG)



Environment (HSE) Inspection Programme to establish direct communication between management and frontline staff on HSE matters and collect site information for planning HSE resource needs.

In April 2014, three Towngas employees were honoured in the government’s Hong Kong Outstanding Employees in Occupational Safety and Health Award Scheme. Towngas also won 10 awards in the Hong Kong Occupational Safety & Health Awards, including Safety Enhancement Programme Award, Safety Culture Award and Occupational Safety and Health Annual Report Award.

In our ECO business, in 2014 we established guidelines on the inspection of fire services installations in mainland operations and reinforced safety management systems in mainland construction projects. Fire Safety and Risk Management Training courses were organised for our mainland employees to introduce the guidelines and management systems.

**Driving Growth and Building Long Term Value**

The bedrock of our success is a commitment to providing a safe

and reliable supply of energy, as well as the caring, competent and efficient delivery that customers expect of us. As a result, the Towngas brand has come to stand for acclaimed service and safety standards, thriving and expertly-managed business operations, and a promise to work responsibly in and for our communities.

Building on these strong foundations, our management theme “Expanding New Horizons” articulates how we are approaching the next stage of our growth. This multidimensional and multifaceted strategy is driving a future that is sustainable, flexible and diversified.

As a Group, we are inspired by the enormous potential of new technology and engineering innovations and the economic benefits these can bring. Our investments in new energy and diversified upstream and downstream projects are fundamental to our overall strategy and our response to global energy trends. In the year ahead, we will continue to focus on organic growth, expansion into new markets and providing forward-thinking solutions that make sense in an ever-evolving energy economy.

