



C O R P O R A T E
P R O F I L E



Towngas' Businesses

As our businesses advance, we continue our transformation into a nation-wide and eco-friendly energy supplier, providing piped gas, new energies, water, information technology, telecommunications, engineering services and other related facilities.



Expanding New Horizons



THAILAND





HONG KONG



Vision

To be Asia's leading energy supplier and service provider, with an environmentally-friendly focus.

Mission

To provide our customers with a safe, reliable supply of energy, and the caring, competent and efficient service they expect, while also working to preserve, protect and improve our environment.



MAINLAND CHINA



We are serving
21 million
customer accounts

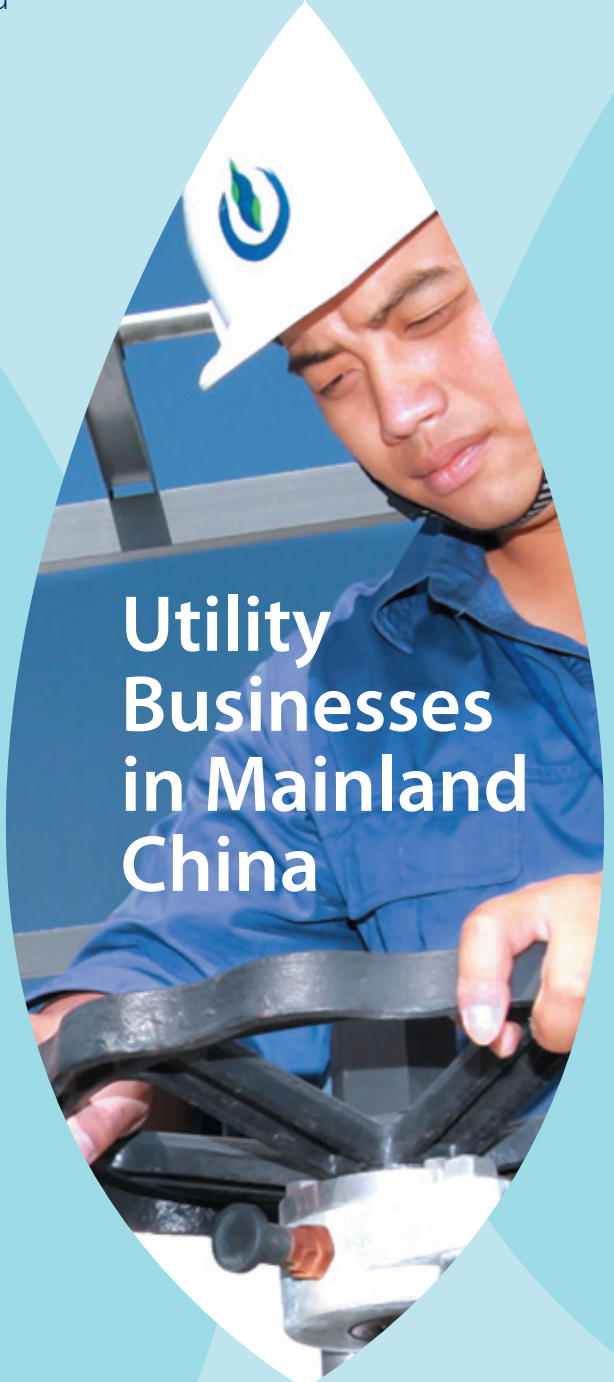
Our customers today enjoy
a supply continuity rate of
over **99.99%**,
one of the best in the world

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**Hong Kong
Business**



**Utility
Businesses
in Mainland
China**



New Energy Business

With an annual production capacity of **320** million m³, our CBM liquefaction plant is the largest of its kind in China

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Diversified Businesses

New smart meters

help reduce unaccounted gas losses

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Growing with Hong Kong

Founded in 1862, The Hong Kong and China Gas Company Limited (Towngas) is one of the largest energy suppliers in Hong Kong, operating with world-class corporate management and leading-edge business practices. For more than 150 years, Towngas has been growing with Hong Kong, evolving from a simple gas company supplying fuel for street lamps to a leader in the energy industry providing an uninterrupted gas supply to the residential, industrial and commercial sectors throughout the territory.

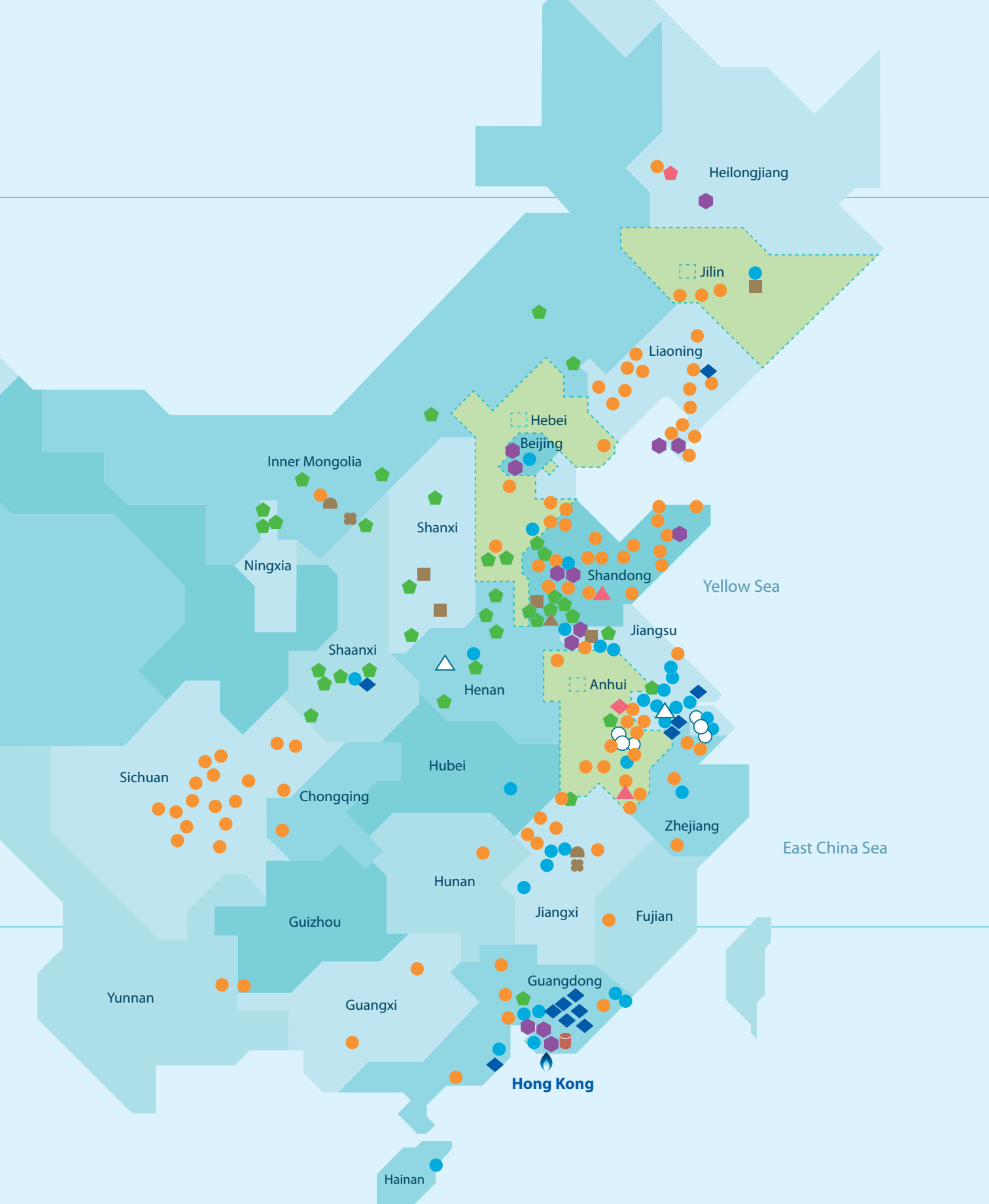
China's rapid economic development has resulted in tremendous demand for clean energy. Fulfilling this need with both determination and enthusiasm, Towngas has not only developed a thriving piped city-gas business in the country in the early 1990s, we have also introduced clean energy and advanced safety and environmental management systems. Our activities are improving living standards on the mainland, while reducing air pollution and protecting the environment.



















Building on these solid foundations in the gas industry, we have diversified our business, moving into eco-friendly energy, water projects, building services engineering, and telecommunications infrastructure, enabling us to grow more vigorously towards a brighter future.

Towngas' Businesses

Based in Hong Kong, our portfolio includes a total of 218 projects on mainland's 25 provinces, municipalities and autonomous regions, and one in Thailand.





- | | | |
|---|---|---|
|  Towngas Group Hong Kong headquarters |  CNG / LNG refilling stations (Towngas) |  Telecommunication projects |
|  Piped city-gas projects (Towngas) |  CNG refilling station (Towngas China) |  Coal mining |
|  Piped city-gas projects (Towngas China) |  Other projects (Towngas) |  Coal-based chemical processing |
|  City high pressure pipeline network / Underground gas storage (Towngas) |  Other projects (Towngas China) |  Upstream projects |
|  City high pressure pipeline network (Towngas China) |  Liquefied natural gas receiving station |  Coal logistic project |
| |  Provincial natural gas pipeline network |  Oilfield project |
| |  Water projects | |

(as at November 2015)

Hong Kong Business



Our core business in Hong Kong consists of the production and distribution of gas, its marketing and sale, the sale of gas appliances, as well as comprehensive after-sales services. Currently, with a more than 3,500 km-long pipeline network, we supply town gas to over 1.8 million customers in the territory.

The Tai Po Plant, covering an area of 11.71 hectares, has a maximum supply capacity of **9.6** million standard cubic metres of gas a day

Our customer service centres not only offer a friendly face and

one-stop services, they showcase our total gas lifestyle concept

Gas Safety

As an energy company, safety is of paramount importance in everything that we do. We are therefore constantly enhancing our safety management to provide a safe and reliable gas supply for our customers.

Currently, we supply town gas to over 1.8 million customers in Hong Kong. Gas is provided through a pipeline network of more than 3,500 km, supported by our Grid Control Centre, which monitors the network 24 hours a day. Regular pipeline inspections ensure a reliable gas supply, and our Emergency Teams are on alert around the clock.

We provide a comprehensive maintenance service for our customers. Additional preventive measures include Regular Safety Inspections, with our dedicated inspection teams calling on all residential customers at regular intervals to carry out routine safety checks on gas risers, installations and appliances.

Innovative Products

Providing one-stop services, we continue to develop a range of innovative gas appliances for the market. At the same time, regular market research helps us learn more about customer requirements, enabling us to introduce efficient products with stylish contemporary designs and innovative functions that meet their evolving needs.

Residential Market

We provide a wide range of quality products for the residential market. Apart from our diverse series of hotplates and water heaters, we provide gas dryers, multi-function cookers, built-in hobs, ovens as well as range hoods to serve the many different needs of modern lifestyles.

We have launched two in-house appliance brands in Hong Kong: TGC, in 2001, and SIMPA, in 2003. TGC, which targets the upscale and mid-scale markets, offers innovative and stylish products tailored for Hong Kong's homes. SIMPA, the second brand, offers more economical products with simpler designs that still feature comprehensive functions meeting different user needs. In our continued quest to make cooking more convenient, we introduced a timer function on several of our TGC built-in hob models.

Our Towngas Cooking Centre, which has promoted flame cooking for 38 years, continues to serve as a platform for cookery lovers to experiment with new cooking techniques and share their enjoyment of flame cooking.

Since their debut, our Towngas Avenue lifestyle concept store has become focal points for people who love to cook and those with a passion for design. This lifestyle shopping concept, blending the pleasures of gourmet dining with modern lifestyle products, has gained wide acclaim.

With over 10 years of experience in supplying stylish kitchen cabinets for new residential projects and our expertise in flame cooking and gas appliances, we expanded our kitchen design business into the retail sector in 2010, launching our own brand, Mia Cucina. Our design team imports top-quality cabinet materials and accessories from Europe for our Mia Cucina kitchen cabinet series. Designs are tailored according to each customer's unique requirements. In line with our customer-oriented service culture, our professional and thoughtful design service focuses on meeting customers' all-round needs.

Commercial and Industrial Markets

To address the needs of Hong Kong's different industries, Towngas has introduced gas products and application systems with comprehensive functions and high energy efficiency. Our aim is to serve as an effective business partner, helping our clients to enhance their competitive edge.

We have launched an array of energy-efficient gas appliances for restaurants, including steam cabinets, food steamers, cooking ranges, and stock pots. We have obtained patents for some of our technologies such as the residual heat recovery technology adopted in our energy-efficient food steamers.



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

Towngas Hall of Innovation opened in September 2015, depicting the **innovative** achievements by Towngas in the past years



Popular among customers ever since their launch, our condensing water heaters are 30% more energy-efficient than traditional water heaters. The heaters are installed in premises that require large quantities of hot water, such as hotels, hospitals and indoor swimming pools.

Our gas dehumidifiers are widely used in shopping malls, commercial kitchens and wet markets to improve indoor air quality. Major customers include the Hong Kong Convention and Exhibition Centre and the Hong Kong Film Archive.

In addition, the Towngas Green Kitchen was set up at Towngas Showcase in North Point to serve as another channel of communication between the company and the catering industry. Industry practitioners are able to experience the state-of-the-art, labour-saving automated functions of Towngas' business cookers and exchange ideas on energy conservation and environmental protection.

Regular Safety Inspection entered into its **20th** anniversary in 2015, which is a good example of “Growth = Innovation x Implementation”



Customer Services

“Customers Come First” is a core principle at Towngas. We provide caring and competent services to meet customer needs and offer greater convenience. Our “Six-star Service” provides a 24-hour hotline while installation and maintenance services are provided within one working day.

Bringing customers greater flexibility in time management, we have increased the number of maintenance service time slots available from Monday to Saturday to 11 time slots per day since 2012. The earliest of these one-hour time slots is 8am-9am.

Direct communication with customers and prompt responses to their feedback help us enhance our services. In addition to commissioning regular customer surveys, our Customer Focus Team visits public and private housing estates regularly, gathering customer opinions on our products and services, while also promoting gas safety.

Every year, we receive a large number of compliment letters from customers on our quality services. In 2014, we received more than 5,800 such letters, driving us to provide even better services.

Environmental Protection

Towngas fully supports environmental protection, seeking to ensure a better living environment and to promote the sustainable development of our planet. We apply a sound environmental management system that plans, coordinates and supervises all work systems to ensure that our operations proceed smoothly, efficiently and with minimum impact on the environment. We also support and sponsor different activities held by green organisations to raise the environmental awareness of our employees and the public.

Making sure that we operate to the highest global standards, our production plant has been certified to the internationally acclaimed ISO 14001 standard. The use of clean feedstock is essential in the production of town gas. In the early 1970s, we made the switch to producing town gas from cleaner naphtha fuel instead of heavy oil and coal. In 2006, we moved forward again, introducing natural gas as part of the feedstock in our production of town gas. This dual use of natural gas and naphtha as feedstock has significantly reduced carbon dioxide, nitrogen oxide and sulphur oxide emissions.

We also now utilise landfill gas from the Shuen Wan and North East New Territories landfill sites as heating fuel in the production of town gas. Using landfill gas as an energy source not only conserves natural resources, it also reduces the emission of greenhouse gases and thus improves air quality. Extending the landfill gas utilisation project to the South East New Territories landfill sites, an agreement was signed with the landfill operator in December 2014. The plant is expected to be operational in the third quarter of 2016.

Maintaining our commitment to conserve resources and manage waste, we put the 5R concept – Reduce, Replace, Recover, Recycle and Reuse – into practice in our daily operations. Our “Used Gas Appliance Recycling Programme” recycles the metal from discarded appliances, conserving natural resources. We use the revenue raised through this programme to support green educational initiatives.

In 2008, we became one of the first of the Hong Kong Government’s Carbon Audit Green Partners to endorse its Carbon Reduction Charter. As a Green Partner, we pledge to audit our carbon emissions within the Company, while at the same time taking measures to reduce these emissions. We have already completed the first carbon audit for our Hong Kong operation. Our carbon inventories were verified under ISO 14064-1 specifications.



Contributing to the Community

We encourage our employees to participate in voluntary social services, and provide resources and support for our Towngas Volunteer Service Team which was formed by our employees to care for the community. Extending these services, Towngas customers and retirees are invited to join our Towngas Customer Volunteer Team.

In 1995, we launched our “Elderly Concession Scheme” offering special benefits for qualified senior citizens. These benefits include a waiver of their account deposit, monthly maintenance charge and monthly minimum charge, together with a 50% discount on the first 500 megajoules of gas consumed as well as free maintenance services for their gas appliances. Since then we have expanded the programme, launching further concession schemes for people with disabilities as well as single-parent families and low-income families, to help lighten their economic burden.



Since 2013, Towngas volunteers donated the produce from Farming For Fun activity to 76 NGOs in order to help the needy.

617,000 hours of community service have been completed by our volunteers since 1999



Since 2000, we have organised an annual charitable event, Rice Dumplings for the Community during the Dragon Boat Festival. Towngas Volunteer Service Team members are joined by students, legislative councillors, district councillors and other members of the community to wrap healthy rice dumplings for the elderly and people in need, bringing them warmth and care while also raising funds for charity.

We also visit elderly people who live alone during important Chinese festivals, such as the Mid-Autumn Festival, to deliver mooncakes and share the festive spirit. On a more day-to-day level, we show our care for the elderly through free photo-taking and hair-cutting services, free installation of safety rails at their homes, and free check-up services for their Personal Emergency Link which "links" them to emergency services in case of need. Our volunteers also deliver long-boiled soup to the elderly who live alone. In 2014, we started a charity project by donating intelligent electrical toilet seats to elderly care homes to enhance the ability of the elderly to take care of themselves and lessen the workload of the staff.



Committed to the needs of Hong Kong's children, we launched the Cooking for Fun English learning workshop in 2006. Towngas volunteers organise workshops for children from underprivileged families throughout the territory, to learn English through cooking.

We also offer assistance and support to social enterprises. In conjunction with the Tung Wah Group of Hospitals, we unveiled the first of its kind COOK EASY food pack delivery service in 2007. Based on special recipes created by our Towngas Cooking Centre, Tung Wah's "Take a Break" catering service creates COOK EASY food packs for customers. The service provides employment opportunities for the mentally handicapped and others with special needs.

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".

Further strengthening our ties with the community, we established a District Council Focus Team in 2000. By participating in and organising activities in local districts, we are able to communicate directly with members of the community, enabling us to better understand their needs and provide more direct and thoughtful services.

Utility Businesses in Mainland China



Hong Kong
Business

Utility Businesses in
Mainland China

New Energy
Business

Diversified
Businesses

Since 1994, The Hong Kong and China Gas Company Limited (Towngas) has started businesses in mainland China, and its first project was started in Guangzhou Panyu. The Group is now one of the largest city-gas enterprises on the mainland.

We are serving **21** million
customer accounts

All-round safety
and risk management audits are also
regularly conducted

Towngas China

In mainland China, we mainly invest and engage in piped city-gas projects. Our mainland gas business operates under Towngas China. We made our first foray into the mainland market in 1994, investing in several piped city-gas projects in southern China's Pearl River Delta region. With the launch of national clean energy policies favouring natural gas, the Group moved on to develop piped city-gas business in the Yangtze River Delta in eastern China, and later extended its reach to central, southwestern, north and northeastern China.

Towngas China now has more than 130 city-gas joint ventures, eight mid-stream projects, six water projects in cities including Nanjing, Wuhan, Xi'an, and Jinan. Our operations spread across 23 provinces, municipalities and autonomous regions in eastern, central, northern, northeastern, northwestern, southwestern and southern China.

Regular Safety Inspections

Towngas China always regards safety as its top priority and to provide reliable energy supply to customers.

Due to the outstanding performance in the aspect of safety, the Group has been invited to involve in developing multiple Codes of Practice for the country or the industry such as "Code for Construction and Acceptance of City and

Town Gas Distribution Works", "Pressure Piping Code – Public Piping", etc. Moreover, the Group is also responsible for developing and publishing a series of guidelines related to safety and risk management. We have published guidelines like "Towngas Mainland Joint Venture Network Design, Construction and Maintenance Guidelines (DM11)", "Plant and Station Equipments and Facilities Maintenance Guidelines (DM50)" etc, to enhance the standard of corporate safety management.

In terms of operation, all round safety and risk management audits are conducted regularly to ensure all joint ventures meet our safety standards. We keep on implementing Monthly Safety Inspection by the General Manager and we are improving the inspection from time to time. Annual Regional Safety Campaigns are launched to enhance the management quality of work safety.

Regarding Customer Safety Management, the Group has strengthened the implementation of Indoor Safety Inspection for customers. In 2014, we have achieved the goal of completing Safety Inspection for all existing customers within three years and rectifying all top priority safety issues. In addition, we have launched the "Safety Installation Guidelines for Households" to ensure the safety of all households. In this case, customers are able to enjoy the gas supply at a safe, satisfactory and pleasant environment.

Customer Service

Towngas employees' guiding principle is "Customers Come First". In addition to regular customer surveys, our Customer Focus Team meets customers periodically to seek their opinions on our products and services and promotes gas safety in the community.

Towngas is committed to providing gas appliances that suit the most stylish lifestyles. In Hong Kong, we have launched our TGC and SIMPA brands, while our Bauhinia brand targets the mainland market. All our appliances feature modern, innovative functions and superior performance besides being energy-efficient. Our "Six-star Service" is all-inclusive and available around the clock. In addition to a 24-hour service hotline and same-day installation and maintenance services, our Customer Centres and Cooking Centre provide the latest information to help our customers enhance their quality of life.

Towngas China has established more than 230 modern Customer Centres across China. These centres provide a wide range of services such as consultation, bill payment, account opening, repair and maintenance as well as selling gas appliances. In 2012, the Group has carried out an upgrade for all Customer Centres. A design concept of "Sunlight, Happiness & Home" was adopted to provide warm and convenient one-stop-shop service to customers.



Our 237 customer service centres offer customers a truly inviting one-stop experience



To enhance safety of customers and the surrounding environment, Towngas China has launched our Bauhinia gas appliance brand on the mainland in 2005. In adherence to the brand's mission – "Rendering a Peaceful Mind at Home with Professional Services", we provide a series of outstanding gas appliances which are advanced and effective. Up to now, the accumulated sales of our Bauhinia appliance has reached over 3.5 million units.

Accumulated sales of gas appliances has reached over **3.5** million units



All products of Bauhinia gas appliance are inspected by both China's quality assurance authority and the Towngas Technology Centre, which adheres to international inspection standards. Launched in 2014, the product series of "Firewall" enable immediate disconnection of gas supply in case of emergency. Furthermore, Towngas China has attained the honours of "Product of Energy Conservation and Environmental Protection", "Government Purchase Catalogue of Energy Conservation Product" and "Best Energy Conservation Products in China" in the industry.

Clean Energy

As a socially and environmentally responsible energy supplier, we are committed to protecting and improving the environment while promoting the sustainable development of our energy business and expanding our clean energy business. According to international research, natural gas is the cleanest fossil fuel given its low emissions. In 1994, the Group began its development in



mainland China. Since natural gas has higher calorific value with lower emissions, we started to actively promote using natural gas to replace coal as feedstock in large-scale industrial and manufacturing business. This helps improve air pollution and enhance corporate efficiency as well as product quality.

Starting from 2009, the Group has started the implementation of Carbon Audit. Every year, "Annual Summary of Greenhouse Gas Emissions" is established and distributed to all subsidiary companies. Subsidiary companies are required to report the annual consumption of tap water and feedstock for gas production, electricity and cold-producing medium. This practice is in favour of the development and implementation of all kinds of environmental protection measures. At the same time, the Group upholds the principle of Green Procurement. If all the necessary requirements are fulfilled, environmentally friendly products will be on our top purchasing priority

The Group has issued "Green Declaration of Towngas China" in 2011 and has motivated all subsidiary companies to plant more than 80,000 trees until now. Total afforested area has expanded to over 390,000 square metres. We keep launching different green activities such as "Greening the World", "Green Journey for Smog Reduction", "Unlimited Recycling of Limited Resources". We aim at advocating staff, customers and even the public to take green actions for environmental protection.

Towngas China Volunteer Service Teams Care for the Communities

Based in mainland China, Towngas China do not only commit to providing customers with quality products and services, but also actively contribute to the community and help people in need in the community. Currently, more than 70% of the enterprises set up volunteer service teams, comprising over 7,000 members in total, building 36 Towngas China Charity Libraries for the children in poor areas, as well as four Firefly Programmes. Our annual welfare initiative Towngas Rice Dumplings for the Community donated over 380,000 rice dumplings to the orphans, senior citizens and people in needs across the country.

In 2013, we founded our flagship charitable campaign named Gentle Breeze Movement. The aim of this movement is to benefit the public by bringing warm and care to the community through the implementation of the Group and its enterprises' corporate social responsibility activities. Since its establishment, Breeze education project has invested more than RMB2.2 million in Xiushui, Jiangxi province, Maanshan in Anhui province, Xuzhou in Jiangsu province, Chizhou in Anhui province, Weifang and Jinan in Shandong province, Xingyi in Guizhou province,



Hua Yan Water has served
over **1.1** million customers
by the end of 2014



Pingli in Shaanxi province for renovating 29 school buildings, building classrooms, as well as donating teaching equipment, learning material and stationery. In early 2015, the target recipients of Gentle Breeze Movement extended to the less-privileged group in cities. A total of RMB150,000 was contributed to provide rice, cooking oil and blankets, as well as other household items to the poor families in Hannan county of Wuhan in Wubei province.

In other aspect, the Group donated HK\$16 million and organised volunteers of Towngas China to assist the rescue in Sichuan earthquake. In 2014, the Group began to participate in a charitable project China Guangcai Loving Home – Home of Happiness and Peace, which was jointly

The market for **clean energy** is buoyed by economic development, urbanisation and infrastructure investment

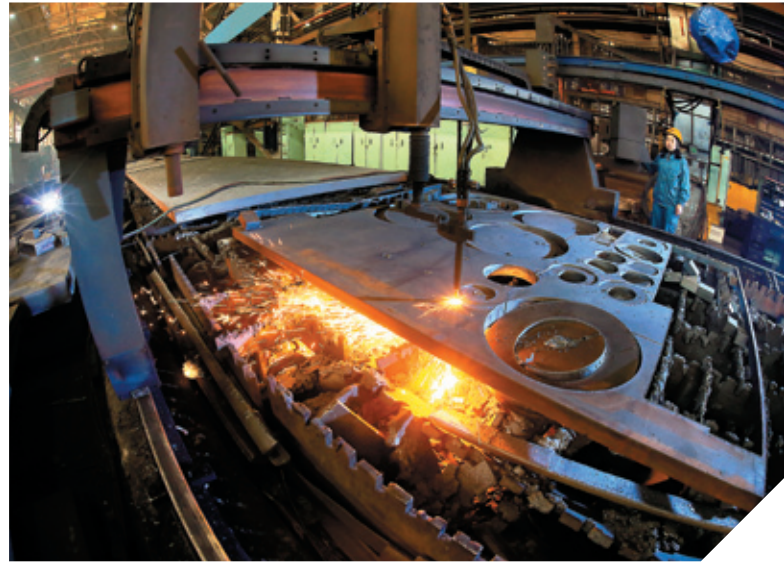


organised by the China Guangcai Program Foundation and Beijing Global Village. Volunteers were regularly sent to visit the impoverished mountain areas in Wuxi county, Chongqing province to provide homework tutorials, music, art and sports activities, as well as both physical and psychological guidance to the resident children.

With the full support of the Group, many joint ventures are very supportive and also actively take part in the Gentle Breeze Movement.

Hua Yan Water

In 2005, Towngas Group started its water business on the mainland market and established its own brand, Hong Kong & China Water Limited (Hua Yan Water). The Group has invested six water projects in Wujiang and Suzhou Industrial Park in Jiangsu province, Zhengpugang Xin Qu



in Maanshan, Jiangbei Concentration Zone and Wuhu in Anhui province, covering water production and distribution, wastewater treatment, industrial wastewater treatment, water reuse and network construction services. With the boosting economic development in mainland cities, Hua Yan Water has served over 1.1 million customers, providing high quality drinking and industrial and commercial water. Hua Yan Water has a daily water supply capacity of 2.4 million tonnes, a daily wastewater treatment capacity of 400,000 tonnes, and a daily water reuse capacity of 50,000 tonnes by the end of December 2014.

Hua Yan Water is committed to provide customers with safe and reliable drinking water. It carries out detailed analysis and testing on raw water, processed water and piped water network. Its enterprises have passed ISO 9001:2008 quality control system, ISO 14001:2004 environmental management system, OHSAS 18001:2007 occupational health and safety management system certification. In 2013, Hua Yan Water launched the Hua Yan • Source project to raise public concern on water shortage and how to protect water resources. Hua Yan Water was awarded Corporate Citizen Social Responsibility Report for four consecutive years in recognition of the contribution the company have made to the society.

New Energy Business



Established in 2000, ECO Environmental Investments Limited (ECO), a wholly-owned subsidiary of The Hong Kong and China Gas Company Limited (Towngas), is engaged primarily in developing new energy business and technology innovation. ECO focuses on exploring business opportunities in clean and efficient energies and turning them into viable businesses in line with its goal of becoming a leader in the green industry.

38 refilling stations now in operation, under planning or construction

Landfill gas currently accounts for about 2% of our fuel consumption in Hong Kong

In support of China's energy policies and consolidation in the energy sector and in response to the rapid growth in global demand for energy and the challenges posed by climate change, ECO's business focus in China is the development of new energy projects that minimise emissions and pollution. In many cases, scientific innovations are involved to turn low grade resources into high value energy. Examples are liquefaction of coalbed methane; development and application of non-conventional energy sources; development of coal chemicals; biomass conversion, as well as provision of eco-friendly logistics services and energy infrastructure development. In Hong Kong, ECO's businesses include liquefied petroleum gas (LPG) vehicular filling stations, landfill gas utilisation projects and an aviation fuel storage facility while in Thailand, ECO expanded its business to an onshore oilfield exploration project.

Committed to environmental protection and continuous innovation, ECO works persistently to expand its green energy portfolio and invests in the development of new technologies. ECO collaborates with Chinese and overseas research institutions to develop clean energy technologies and extend their applications, contributing relentlessly to society's sustainable development by offering an ever wider choice of clean energies.

Landfill Gas Utilisation

When organic substances in landfills decompose, they produce significant amounts of landfill gas. If emitted directly into the air, landfill gas (in which methane is the major component) aggravates the greenhouse effect, which is already a serious environmental threat. Treated landfill gas, on the other hand, can be converted into clean energy and used as heating fuel in town gas production.

In 2004, ECO designed and constructed a landfill gas treatment plant at the North East New Territories Landfill in Hong Kong and commissioned in 2007. The treated landfill gas, or synthetic natural gas, is transported to Towngas' production plant in Tai Po, Hong Kong via a pipeline and used as heating fuel in town gas production. The treatment plant now supplies 8,000 cubic metres of synthetic natural gas per hour. It enables our production plant in Tai Po to curtail naphtha consumption by 40,000 tonnes while reducing emissions of carbon dioxide by up to 135,000 tonnes annually.

Another landfill gas treatment plant located at South East New Territories in Hong Kong was under construction starting from July 2015 and target to be commissioning in mid-year 2016. This project can further reduce the emission of carbon dioxide by 56,000 tonnes per year. The Landfill Gas Utilisation Project will be one of the largest energy conservation and emission reduction environmental projects in the territory.

Liquefaction of Methane

Coalbed methane (CBM), predominantly composed of methane, exists in coal mines. The gas is formed when biochemical pyrogenation takes place in the coal under high temperatures and high pressure. By extracting CBM before mining activities commence, we can help prevent gas incidents, enhancing the safety of coal miners and also reducing pollution.



With an annual production capacity of **320** million m³, our CBM liquefaction plant is the largest of its kind in China



Using the latest cryogenic technology, the extracted CBM can be liquefied on site. Liquefied coalbed methane (LCBM) has a temperature of about -162°C and the application of constant pressure reduces its volume to 1/625th of the original size. The resulting LCBM is a new form of safe, clean energy with high energy density that is easily transportable, cleaner burning and less expensive to produce.

Taking advantage of the abundant CBM supplies in Shanxi province, ECO, in cooperation with the Shanxi Jincheng Anthracite Mining Group, established a liquefaction plant in Jincheng, Shanxi province, to convert CBM into LCBM. The plant is currently the largest CBM liquefaction plant on

Clean chemical energy

ECO methanol upgrading project in Erdos, Inner Mongolia, MTG Phase 1 plant.



the mainland with an annual production capacity of 320 million cubic metres of LCBM. Phases I and II of the plant were completed in late 2008 and March 2011 respectively, boasting a combined daily production capacity of up to 900,000 cubic metres. This project was not only a major milestone for ECO, it was also a pioneering initiative for the industry, as the first project on the mainland not only to utilise CBM on a commercial scale but also help satisfy energy needs in surrounding communities. Furthermore, the project provides an additional source of gas for the ongoing development of ECO's vehicular fuel supply network. In addition, ECO accelerated the development of coke oven gas factories to refrigerate liquefied natural gas (LNG). A new coke oven gas comprehensive utilisation project in Xuzhou, Jiangsu province enables to produce 80,000 tonnes LNG per year. It will be commissioning in early 2016. ECO will continue its efforts in sourcing low grade resources and turning them into high value energy.



Upgrading Methanol

As China's domestic supply of petroleum and natural gas is insufficient to meet its needs, the country has to rely heavily on imported resources to meet demand arising from the rapid pace of development. However, given its abundant coal resources, China can compensate for the inadequate supply of petroleum and natural gas by speeding up the development of coal chemical technology, laying the foundation for the development of a petroleum-substitute fuel industry in the long term.

ECO is currently engaged in a coal chemical upgrading projects in Erdos, Inner Mongolia. A coal-based methanol plant in Inner Mongolia was fully operated in early 2013 reaching an annual capacity of 200,000 tonnes. Its capacity will be further increased after the plant expansion in 2015. With the use of coal resources to produce high value methanol, it could be used as vehicular fuel and chemical feedstock.

Meanwhile, ECO explore methanol upgrading projects in Erdos, Inner Mongolia. Methanol To Gasoline (MTG) Phase 1 plant produced 140,000 tonnes clean gasoline-type chemical products from methanol. It has been in commissioning since November 2014 and now under steady production. The production quality is welcomed by the market and ECO is preparing to further expand the scope of this project.

Vehicular and Marine Fuel

In support of the Hong Kong Government's initiative to improve air quality, ECO has designed, constructed and operated LPG filling stations in Hong Kong since 2000. The five LPG filling stations run by ECO provide 18,000 LPG taxis and most LPG minibuses in Hong Kong with a 24-hour service. The stations sell approximately 65,000 tonnes of LPG a year, accounting for about 30% of Hong Kong's auto LPG market.

With a wealth of operational and safety management experience, technical expertise and a reputation for excellent customer service, ECO has extended its gas filling station business to the mainland market. In the first half of 2015, we have 17 gas filling stations in operation, 23 are under design or construction in Shandong, Shanxi, Shaanxi, Henan, Guangdong provinces, as well as Ningxia Hui and Inner Mongolia autonomous regions. There will be 38 stations in total to be commissioning by the end of 2015.



Our AFF consists of eight tanks with a gross aviation fuel storage capacity of **264,000 m³**



ECO's Aviation Fuel Facility

In 2002, ECO signed a 40-year franchise agreement with The Airport Authority Hong Kong to design, construct and operate an Aviation Fuel Facility (AFF) supplying fuel for aircraft at the Hong Kong International Airport. The project consists of eight tanks with a gross aviation fuel storage capacity of 264,000 cubic metres and a jetty with two berths. Berth No.1 accommodates vessels from 10,000-80,000 dwt while Berth No.2 accommodates vessels from 10,000-50,000 dwt. The aviation fuel is transported from Tuen Mun to the island where the airport is located via two undersea pipelines. The project commenced operation in 2010 and is now a major logistics base for aviation fuel in Hong Kong, supplying approximately 6 million tonnes of fuel a year.

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



Thailand Oil Field Project

In Asia, ECO operates an onshore oil field project in Thailand. In July 2012, ECO acquired a 60% effective stake in the development of onshore oil field, located conveniently about 250 km north of Bangkok in Thailand. It was the first overseas project in Towngas Group. The experience gained from this project will enrich our upstream oil and gas capabilities. By mid of 2015, we have achieved the output of 6,500 barrels per day and in 2014, we have achieved a record high of 1,400,000 barrels a year.

Research and Development

Established in September 2009, the ECO Environmental Energy Research Institute is ECO's research subsidiary. The institute underpins ECO's clean energy business development on the mainland and overseas by providing technological consultations and service support. It develops ECO's core technologies, technical feasibility analyses and technology development planning. With an open and innovative research model, the institute maintains close contact with domestic and foreign scientific research organisations and academic institutions, with which it cooperates extensively. The institute is



engaged in several collaborative projects on the mainland and in Hong Kong, involving clean energy, eco-friendly new energy and energy efficiency. Some of the technological initiatives have been granted patent rights by the Trademark Office of the State Administration for Industry and Commerce in China, and they are now going through middle stage experiments.

Corporate Social Responsibility

ECO's LPG filling stations in Hong Kong and its compressed natural gas filling stations on the mainland which provide vehicular fuel for heavy duty trucks can help reduce vehicular emissions of suspended particulates by 6% and nitrogen oxides by 25%. This can significantly improve air quality and protect the environment.

ECO utilises landfill gas as fuel for the production of town gas. The project can reduce naphtha consumption for town gas production by 40,000 tonnes and mitigate the emission of carbon dioxide by 135,000 tonnes a year, equivalent to the amount removed by 5.8 million trees annually. Furthermore, ECO has built a LCBM plant in China's Shanxi province, which can reduce emission of coalbed methane by 250 million cubic metres per annum.

Diversified Businesses





Hong Kong
Business

Utility Businesses in
Mainland China

New Energy
Business

Diversified
Businesses

The Hong Kong and China Gas Company Limited (Towngas) provides our customers with safe and reliable gas and quality service, as well as actively expands our business. In addition to the production of gas and marketing of gas appliances, Towngas' business also covers telecommunications, civil and building services engineering, manufacturing operations, and information technology.

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

Towngas Telecom has established
14 Joint Ventures to provide
telecommunications infrastructure
and data centre services

Towngas Telecom

Towngas Telecommunications Company Limited (TGT), a wholly owned subsidiary of Towngas, is one of the premier fixed telecommunications network operators in Hong Kong. As a carrier-neutral telecommunications service provider, by leveraging on Glass-In-Gas (GIG) and Glass-Along-Gas (GAG) technology, TGT has created a fibre network providing high-end telecommunication infrastructure services and quality network solutions offering substantial synergies and economies of scale for telecom carriers, service providers and large corporations.

TGT focuses on three core businesses, including network connectivity, data centre and cloud computing. We have expanded our business on the mainland since 2007 and have now founded 14 joint ventures. TGT seizes business opportunities under the big data era, we have established seven networked data centres in Jinan, Shangdong province, Dalian, Liaoning province, Dongguan, Guangdong province, Harbin, Heilongjiang province, Shanghai, etc., accommodating up to 14,000 server racks. TGT data centres are in accordance with TIA 942 Tier 3+ international standard and has obtained several international standard certifications, such as CSA Star, ISO 14001, ISO 20000-1, ISO 27001, etc. We strive to uphold eco-friendly concept by incorporating innovative green initiatives. Our effort has been recognised by the

world-renowned Green Building Council for LEED Gold Certification. In order to meet the great demand for speed and stability in communication, we will continue to strengthen our development in data centres and telecommunications projects.

By integrating reliable and high-speed connectivity with advantages such as outstanding infrastructure, TGT has been able to build flexible and reliable cloud computing platforms in the form of private cloud, public cloud, hybrid cloud, etc., to meet with the needs of different customer groups. We expand our footprint in the market of cloud computing by creating corporate synergy with our strategic partners, like Aliyun, Sina, etc. We are also devoted to facilitating business application development on cloud technology, for instance financial cloud, gas cloud, etc.

U-Tech

U-Tech Engineering Company Limited (U-Tech) employs mainly trenchless technology in its operations in Hong Kong. Since U-Tech does not need to excavate roads when laying underground pipelines, it greatly reduces the environmental impact and the inconvenience to the general public. The Company's business and areas of expertise have steadily expanded, and it now undertakes a variety of projects, including building services, liquefied



petroleum gas projects, civil engineering works, water works and other pipeline infrastructure projects for government departments, developers and utility companies.

During the year, the completed salt water service reservoir for Water Supplies Department at Magazine Gap Road and sewage treatment plant for Drainage Services Department at Tai Lam were in service. We also completed the electrical installation project covering 2,000 flats across phases two and three of a residential development in Lok Wo Sha, Shatin. The new electrical and air conditioning installation project for Manulife Insurance Tower at Hoi Bun Road, Kwun Tong also made good progress. Furthermore, we participated in new roads and public utilities installation projects include engineering inspection of underground sewers for Drainage Services Department, construction of a pedestrian lift at Chung Fu Light Railway station for Highways Department, construction of underground water mains at Yuen Long for MTRC and construction of chilled water pipelines at Kai Tak Development Area.



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



G-Tech

As part of our commitment to maintaining the highest standards of safety across the supply chain, we design and manufacture polyethylene (PE) fittings and jointing parts for both gas and water systems. This year, G-Tech Piping System (Zhongshan) Company Limited, our wholly-owned subsidiary, began to supply piped gas operators with quality PE pipes manufactured under a stringent quality control system. We also established logistics hubs and regional warehouses in Jiangsu and Liaoning provinces to support the expansion of the business and supply to our customers across a diverse geographical network. The business has been supported by GH-Fusion Corporation Limited, our joint venture with the British Fusion Group, which develops additional PE fittings to more comprehensively serve the mainland China gas market.

M-TECH

In 2011, we established M-TECH Metering Solutions Company Limited (M-TECH) to develop and offer new smart metering solutions that have been well received in the market. In the past year, over 90 of our mainland ventures have purchased the Micro-Electro-Mechanical Systems meters, the first of its kind in the gas metering industry. These smart meters can help reduce

S-Tech's TCIS Integrated
Cloud Solution won a
Gold Award at
the Hong Kong ICT Awards 2014



unaccounted gas losses due to ambient temperature and pressure fluctuations. M-TECH will also release a new series of products including MFACT Mass Flow Meter to replace the traditional diaphragm meters currently used by small commercial business, and NFC Residential Smart Meter to meet the trend of smart metering in mainland China. At the same time, we are looking for every business opportunity to enter into the European market to capture the vast markets abroad.

S-Tech

S-Tech Technology Consulting Limited (S-Tech) is a wholly-owned subsidiary of Towngas. Its principal businesses include provision of IT strategic planning and IT solutions such as software development, system integration, system implementation and post implementation follow-up service. Being an expert in cloud computing, S-Tech provides IT business solutions and consulting services beyond the Towngas Group. S-Tech is headquartered in Hong Kong with its PRC management arm in Zhuhai.

S-Tech's flagship product is Towngas Customer Information System (TCIS). It is a standardised, efficient, simple and convenient cloud based solution for



managing customer relationship and billing. TCIS provides one-stop customer information solution and is currently used by over 90 gas companies, serving almost 10,000,000 customers in mainland China. TCIS also provides total solution including customer service hotline system and a suite of mobility apps to be used in regular safety inspections, meter readings, and other maintenance services. In 2013, the Cloud TCIS won the Asia IT Excellence Award – Best Deployment of Emerging Technology.

Other star products of S-Tech include SCADA (Supervisory Control And Data Acquisition), GIS (Geographic Information System), CPIM (Corporate Project Information Management System), Corporate Safety Operation System, Company Portal, etc. It also provides services related to the business process change in system implementation, consulting service and IT hardware and software provision.

S-Tech is strong at formulating and providing the Towngas Group IT solutions and services, harnessing the IT resources and competence in the Towngas Group to enhance business operation, foster innovation with the aim to be a leading IT professional company specialising in public utilities.

Major Awards

- ▼ The Hong Kong Institute of Financial Analysts and Professional Commentators: Outstanding Listed Company Award 2014 (2014)



- ▲ Family Council: 2013/14 Distinguished Family-Friendly Employers – Corporations Category (2014)

- ▶ 14th Hong Kong Occupational Safety & Health Award: Safety Management System Award (Other Industries) – Gold Award (2015)



- ▲ Environmental Protection Department and Environmental Campaign Committee: Hong Kong Awards for Environmental Excellence (Public Organisations and Utilities) Gold Award (2012)



- ▲ Towngas has been one of the seven current constituents in the Hang Seng Index for 50 years (2014)



◀ The Hong Kong Council of Social Service: Caring Company – Outstanding Partnership Project Award 2014/15 (2015)



▲ Hong Kong Awards for Industries: Innovation and Creativity Grand Award (2013)



▲ Institution of Gas Engineers and Managers and The Energy and Utilities Alliance: Gas Industry Leadership Award (2015)



▲ Institution of Gas Engineers and Managers and The Energy and Utilities Alliance: Company of the Year Award (2014)

◀ Hong Kong Awards for Industries: Productivity and Quality Grand Award (2008)



▲ Hong Kong Awards for Industries: Customer Service Grand Award (2009)

▼ Hong Kong Green Awards 2014: Environmental, Health and Safety Award (Corporate) Platinum (2014)



◀ Social Welfare Department: Champion of Highest Service Hour Award (Private Organisations – Best Customer Participants) (2007-2014)

▼ The Hong Kong Council of Social Service: Total Caring Award (2008)



▲ Towngas China was awarded the Hong Kong Corporate Governance Excellence Awards 2013 – Category for Hang Seng Composite Index Constituent Companies (2013)

Business Management Awards

- ▶ Harvard Business Review: Managing Director Alfred Chan ranked the 77th in the Best Performing CEOs in the world (2015)
- ▶ Capital Weekly: The Listed Enterprise Excellence Awards (2015)
- ▶ Yazhou Zhoukan: 1000 Worldwide Chinese Companies and Awards of Oil and Energy (2014)
- ▶ The Knowledge Management and Innovation Research Centre of The Hong Kong Polytechnic University: Top winner of the Hong Kong Most Admired Knowledge Enterprise Award, Asian Make Award and the Best in Knowledge Culture Award (2014)
- ▶ Office of the Government Chief Information Officer: Hong Kong ICT Awards – Best Business Solutions (Application) Award – Gold Award (2014)
- ▶ Yazhou Zhoukan: Global Chinese Business 1000 ranking at number 38 (2013)
- ▶ CIO Summit: IT Excellence Awards 2013 – The Best Deployment Emerging Technology Award (2013)
- ▶ QQ.com, Quamnet and Hong Kong Economic Journal: Top 100 Hong Kong Listed Companies (2013)
- ▶ Financial Times Global 500, United Kingdom (2012)
- ▶ QQ.com and Quamnet: Top 100 Hong Kong Listed Companies (2012)
- ▶ Economic Digest: Towngas China was awarded Hong Kong Outstanding Enterprise Award (2011)
- ▶ Institution of Gas Engineers and Managers, United Kingdom: Company of the Year (1999, 2006)

R E C O G N I S I N G V A L U E S

Environmental Awards

- ▶ U Magazine: U Green Awards – Public Utilities (Excellence Category) (2014)
- ▶ MetroBox: Prime Awards for Eco Business (2014)
- ▶ CAPITAL Entrepreneur: Green Enterprise Awards (2013)
- ▶ Federation of Hong Kong Industries: Hang Seng Pearl River Delta Environmental Awards – Silver Award (2013)
- ▶ Wen Wei Po: Green China Environmental Achievement Award – Distinguished Enterprises (2011, 2013)
- ▶ Hong Kong Green Awards 2012: Corporate Green Governance Award – Grand Award and Corporate Green Governance Award – Corporate Leadership (2012)
- ▶ Hong Kong Awards for Industries: Environmental Performance Grand Award (2004, 2007)

Social Service Awards

- ▶ Hang Seng Management College: Junzi Corporation (2015)
- ▶ Employees Retraining Board: 5th ERB Manpower Developer Award Scheme “Manpower Developers” (2014)
- ▶ The Home Affairs Bureau and the Social Enterprise Advisory Committee: Friends of Social Enterprise (2013)
- ▶ Steering Committee on Promotion of Volunteer Service of the Social Welfare Department: Volunteers with 10,000 Service Hours Award (2011, 2013, 2014)
- ▶ The Community Chest: President’s Award (2001-2015)



The Hong Kong and China Gas Company Limited
363 Java Road, North Point, Hong Kong
www.towngas.com

