


THE MAINLAND CHINA GAS BUSINESS

# Cementing Our Leadership

100 city-gas businesses in 19 provinces, municipalities and autonomous regions serving **13.2 million** customer accounts

Gas sales rose 21 per cent to **10.3 billion** cubic metres

Over **one million** Bauhinia appliances sold since 2005



Providing preventive maintenance as well as taking the safety message directly into customer homes, our Regular Safety Inspections have greatly helped to drive gas safety.



# 18 The Mainland China Gas Business

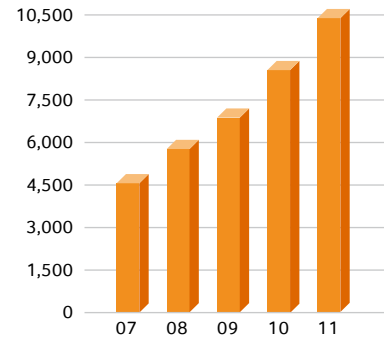
With the number of our businesses increasing at a rate of some 10 – 15 new projects a year, our profit figures continue to see steady improvement as more efficiencies, synergies and economies of scale are gained.



Hand-in-hand with the thriving economy in mainland China, our activities on the mainland enjoyed a year of exceptional growth. During the year, we added 18 new businesses to our mainland portfolio bringing the total number to 138 projects in 21 provinces, municipalities and autonomous regions throughout the country. Ranging from upstream, midstream and downstream city-gas and natural gas operations, telecommunications and water businesses to our new energy facilities, our operations on the mainland generated a total turnover of HK\$47.9 billion, an increase of 38 per cent over 2010.

This satisfactory performance is being driven on a number of levels. Firstly, we are seeing rapid growth – with the number of our businesses increasing at a rate of some 10 – 15 new projects a year, our profit figures continue to see steady improvement as more efficiencies, synergies and economies of scale are gained. With our first city-gas joint venture formed on the mainland in 1994,

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



our long establishment in the market is also paying dividends as we increasingly enter a period of harvest. Coupled with the booming economy as well as the greater supply of natural gas, 2011 was a highly positive year for the Group.

Signalling our leadership and growing stature within the industry, we received a number of awards during the year. Towngas China not only earned a cnA rating on Standard and Poor's Greater China Credit Rating Scale for its solid financial credentials, it also won "The Most Valuable Listed Company during the Twelfth Five-Year Plan Award" in the "2011 Golden Bauhinia Awards". This award is presented by Ta Kung Pao in partnership with a number of financial institutions to give global markets a better understanding of quality listed companies in China. We also won "The Best Model for Public Satisfaction in China's Public Utilities Service" presented by the publication, Economy of China in conjunction with several professional organisations.

## Our City-gas Operations

This sector, which forms the backbone of our operations in mainland China, achieved a significant milestone in 2011, when with the addition of seven new businesses, we reached a grand total of 100 city-gas ventures in our service portfolio. Serving some 13.2 million customers in 19 provinces, municipalities and autonomous regions, gas sales continued their double digit growth, rising a healthy 21 per cent over the previous year to reach 10.3 billion cubic metres. Turnover of all the ventures for the year rose to HK\$41 billion, translating into an increase of 34 per cent.

This positive picture is particularly gratifying in view of the Eurozone crisis and the economic uncertainties that swept the world's financial markets in the second half of the year. While China enjoyed a strong economic performance in 2011, it cannot remain immune to the winds of recession indefinitely and we expect it to experience some economic fallout, particularly in the manufacturing sector. This will be compensated to some extent, however, by the nation's drive to raise domestic consumption.

From our perspective, it will also be redressed by the growing use of

natural gas in the country. Previous restrictions in supply are no longer a problem as major gas pipelines bringing in supplies from western China increasingly come on line. Together with the growing number of liquefied natural gas (LNG) receiving terminals along the eastern seaboard bringing in supplies from the Middle East and Australia, coupled with supplies from our liquefied coalbed methane (LCBM) plant in Shanxi province, which is now in full operation and with priority distribution for our downstream city-gas projects, the supply situation has greatly eased.

In conjunction with the Nation's focus on green energy – according to its Twelfth Five-Year Plan, natural gas usage is expected to rise by

a hefty 136 per cent against the 25 per cent projected growth in total primary energy demand. Industry too is driving demand for natural gas, helping to balance the high usage swings normally experienced between the summer and winter months.

The residential market is also positive. Though the government has invested a great deal of effort to cool the escalating cost of housing, it is also carrying out large-scale public housing development, forecasted to be in the region of 30 million new homes within a three-year period. As the largest and one of the most respected suppliers of piped gas in mainland China, we see ourselves benefitting from this expanding market.



The use of natural gas at this ceramic plant during the firing process not only helps to prevent discolouration, it also improves quality and reduces costs.

## Upstream and Midstream Facilities

Our vision to become Asia's leading energy supplier providing a total spectrum of upstream, midstream and downstream activities also moved forward during the year.

In view of our focus on clean and green energy, our upstream facilities are primarily involved with new and alternative forms of energy. These include our LCBM plant in Shanxi province, which provides a ready supply of easily transportable fuel to wherever it is needed, as well as a liquefied coal-mine methane facility, which will be constructed soon in Shanxi province. Our first clean coal chemical project, producing methanol in Inner Mongolia also came on line in 2011, while a further coal project, to produce coke and coke oven gas, is taking shape in Jiangxi province. The coal for these projects is being supplied by nearby coal mining projects and, providing yet further impetus to our clean coal initiation activities, we acquired an additional coal mine in Inner Mongolia and a coal logistics transportation hub in Shandong province during the year.

Attesting to the strength of the piped gas market, our midstream operations performed exceptionally well during the year. Midstream gas sales rose to 1.9 billion cubic metres, an increase of 32 per cent over 2010. In addition to our

existing midstream projects, which consist of a number of high pressure pipeline joint ventures in Anhui, Hebei, Zhejiang and Jilin provinces feeding gas supplies to our city-gas businesses; a natural gas exploration facility in Jilin province with supply linked to city-gas distribution networks in the vicinity; as well as the LNG Receiving Terminal in Guangdong province; we are in the process of building an underground gas storage facility in Jintan, Jiangsu province. This new facility will help to secure gas supplies for customers, particularly during the peak winter season for our city-gas businesses in the surrounding neighbourhood. Looking forward, we are also actively exploring and negotiating a number of new projects in this expanding business sector.

## Serving Our Customers

With 13.2 million customer accounts, it is essential that our customers can gain easy access to our full spectrum of services. We therefore continue to expand our customer service centre network, which grew by eight new centres in 2011, bringing the total to 127 in 63 cities. At these centres, customers not only can make enquiries and sign up for gas services, but also take a look at our diverse range of Bauhinia appliances, which like our appliances in Hong Kong, provide energy-efficient and cost-effective service while also fostering a modern lifestyle. Our customers also enjoy follow-on maintenance and safety inspections, which are carried out on a regular basis.




  
 港华紫荆 BAUHINIA

顶级尊贵  
 德国肖特微晶玻璃面板  
 港华紫荆 BRB-4060N(C) 嵌入式灶

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 www.towngas.com.cn


  
 港华燃气  
 Towngas

**Safe. Convenient.  
 Cost-efficient.  
 Environmentally-  
 friendly. Building on  
 these strengths, our  
 Bauhinia appliances  
 are being used in  
 more than a million  
 homes in China.**



A technician checking the performance of the more durable stainless steel gas risers, which were installed as part of our anti-corrosion pipeline initiative.

assured of quality, safe and energy-efficient appliances that contribute towards a more convenient and improved lifestyle.

During the year, Bauhinia received its certificate of energy conservation from

As the first gas supplier to provide this one-stop service concept, coupled with our leading reputation in the market, as well as our widespread experience in Hong Kong, the sale of our Bauhinia appliances has consistently done well. Sales have increased by leaps and bounds and 2011 was no exception. Not only did we sell a total of 380,000 units, an increase of 36 per cent over the previous year, we also reached the million mark – cumulatively we have sold over a million units since the brand's launch in 2005. This significant milestone creates win-win benefits both for our customers and ourselves. We cement the leadership of our brand, while our customers are

the Chinese government placing the appliances on the country's official list of energy-efficient products. They were also cited as a "Model for the Industry" at the Gas and Heating China 2011 event held in Chengdu. Cementing this leadership, we continue our ongoing research and development. We are, for example, developing a line of products to meet the needs of the large-scale government-built housing developments which are taking place on the mainland.

Enhancing our services and making sure we always present a caring face to our customers, we launched a "Lead a Happy Life with a Smile" campaign supported by "Service with a Smile" training to promote

a friendly and caring service culture. Elections for "Service with a Smile" ambassadors will also be held across the Group. These initiatives, held in line with our group-wide "Wenxin" programme, also include a "Smiles" photo competition.

While caring customer services provide the "heart" to our extensive customer network, it is our Towngas Customer Information System (TCIS) that provides the "brain", integrating information and standardising procedures, to provide efficient and effective services to our customers. This second generation system is currently being used in around 35 of our mainland businesses and as more and more businesses come on line, we expect this figure to double over the next few years. We are also running a trial among our 15 businesses in Sichuan province, using cloud computing techniques, based on our data centre in Jinan, to run their TCIS systems. With the success of the trial, this new concept will be implemented in other regions.

## Improved Gas Safety and Risk Management

As the leading supplier of piped gas on the mainland, we have taken a strong stand in raising safety standards in the market. Every effort has been made to embed the concept of safety into the consciousness of our employees, our suppliers and contractors as well as our customers and the community.



Driving professionalism and safety throughout our operations, Towngas Engineering Academy completed 83,208 training hours for our mainland frontline technical staff in 2011.

A major step was taken several years ago when we began our yearly safety inspections at customer premises to check both gas appliances as well as the condition of gas piping within the premises. Providing an invaluable opportunity to identify and thus avert possible problems, this move has greatly boosted gas safety. These visits also enable us to take the safety message directly into customer homes and to recommend the replacement of aging and faulty appliances if it is necessary. Enhancing these activities during the year, a special emphasis was placed on customer premises which, due to lack of access, have not been visited for some time. As a result, by the end of 2011, we were able to achieve our target to conduct safety checks on the gas equipment of all our customers within a three-year cycle.

This safety mindset also gained momentum among our people, driven by the direct involvement of the highest levels of management. In addition to holding monthly safety meetings, senior management also conducted inspections in different regions in mainland China. This commitment not only sends the strongest possible message on gas safety throughout the Group, it also provides an excellent example of the priority management places on safety. This safety mindset was further reinforced by our “General Manager Monthly Safety and Risk Management Programme” which continues to prove its effectiveness.

The “Year of Safe Production” campaign, first launched in Xi’an in 2008, is being rolled out throughout our operations on the mainland.

The campaign was introduced to northeastern and southwestern China in 2009 and 2010 respectively, to Shandong province in 2011, and will be extended to three further provinces – Jiangsu, Zhejiang and Anhui in 2012. Under this initiative, an analysis of operations, based on geographical location, climate, operations history, safety awareness and other key factors, is carried out to identify key risk areas and establish Key Performance Indicators to address these risks.

With these ongoing safety initiatives, from our preliminary safety audits to identify the best programmes and measures for our businesses, to our ongoing training and special safety measures, as well as our safety drills and exercises – during the year a corporate emergency table top exercise involving both the Corporate Emergency Management Team and deputy managers was completed while a trial run of the corporate emergency management system was carried out by 12 selected city-gas businesses, we continue to see improvements in our safety performance. A safety and risk management audit conducted during the year showed that improvements in gas safety performance are rising – the 2011 audit achieved a score of 85 out of 100 against 71 just two years earlier in 2009.

## Gas Businesses in Mainland China in 2011

	Year of Establishment	Project Investment Rmb M	Registered Capital Rmb M	Equity Share %
<b>TOWNGAS PIPED CITY-GAS PROJECTS</b>				
<b>Guangdong Province</b>				
Panyu	1994	260	105	80%
Zhongshan	1995	240	96	70%
Dongyong	1998	132	53	80%
Jianke	2002	45	23	100%
Shunde	2004	200	100	60%
Shenzhen	2004	2,316	1,320	26.8%
Chaoan	2007	185	99	60%
Chaozhou Raoping	2011	189	106	60%
<b>Central China</b>				
Wuhan	2003	1,200	420	50%
Xinmi	2009	205	85	100%
<b>Eastern China</b>				
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%
<b>Shandong Province</b>				
Jinan East	2003	610	470	50%
<b>Northern China</b>				
Jilin	2005	247	100	63%
Beijing Economic-technological Development Area	2005	111	44	50%
Hebei Jingxian	2011	186	79	81%
<b>Northwestern China</b>				
Xi'an	2006	1,668	1,000	49%
<b>Hainan Province</b>				
Qionghai	2008	110	50	49%
<b>MIDSTREAM PROJECTS</b>				
Guangdong LNG	2004	7,628	2,289	3%
Hangzhou NG	2005	760	304	10%
Anhui NG	2005	245	200	25%
Hebei NG	2005	1,260	420	45%
Jilin NG	2007	360	220	49%
Suzhou NG	2009	60	40	29%

## TOWNGAS CHINA PIPED CITY-GAS PROJECTS

<b>Guangdong Province</b>	<b>Northeastern China</b>
Foshan	Benxi
Shaoguan	Chaoyang
Qingyuan	Tieling
Yangdong	Fuxin
	Shenyang Coastal Economic Zone
<b>Eastern China</b>	
Nanjing Gaochun	Yingkou
Maanshan	Dalian Changxingdao
Maanshan Bowang	Dalian Economic and Technical Development Zone
Anqing	
Chizhou	Anshan
Tunxi	Lvshun
Huangshan	Kazuo
Huizhou	Changchun
Tongxiang	Gongzhuling
Huzhou	Qiqihar
Yuhang	Beipiao
Changjiu	
Fuzhou	<b>Southwestern China</b>
Jiujiang	Ziyang
Wuning	Weiyuan
Xiushui	Pengxi
	Lezhi
<b>Shandong Province</b>	Pingchang
Jimo	Dayi
Laoshan	Yuechi
Zibo	Cangxi
Zibo Lubo	Chengdu
Longkou	Zhongjiang
Jinan West	Jianyang
Jinan Changqing	Pengshan
Weifang	Mianyang
Weihai	Xinjin
Taian	Xindu
Chiping	Qijiang
Linqu	Guilin
Laiyang	
<b>Hunan Province</b>	
Miluo	



THE HONG KONG GAS BUSINESS

# Enhancing Lifestyles

Gas sales in  
industrial sector  
rose a significant  
**18.4 per cent**

Received **5,226** written  
compliment letters –  
the highest on record

Over **2,000** sets of our  
upmarket home kitchen  
series, Mia Cucina, sold





We work in close partnership with our customers to meet their needs with the most efficient, cost-effective as well as environmentally-friendly solutions.

## 26 The Hong Kong Gas Business

With the prosperity in the catering and hotel trades, we gained a stronger foothold in this market as a number of new clients, both in the catering industry as well as the food processing industry, made the switch from diesel fuel to the use of cleaner and more convenient town gas.



Buoyed by the economic boom in China, the large number of inbound visitors as well as the cooler winter weather, our Hong Kong gas business too performed well. Gas sales rose by a positive 2.1 per cent, while customer numbers increased by a further 26,237, bringing our total customer base in the territory to 1,750,553 accounts.

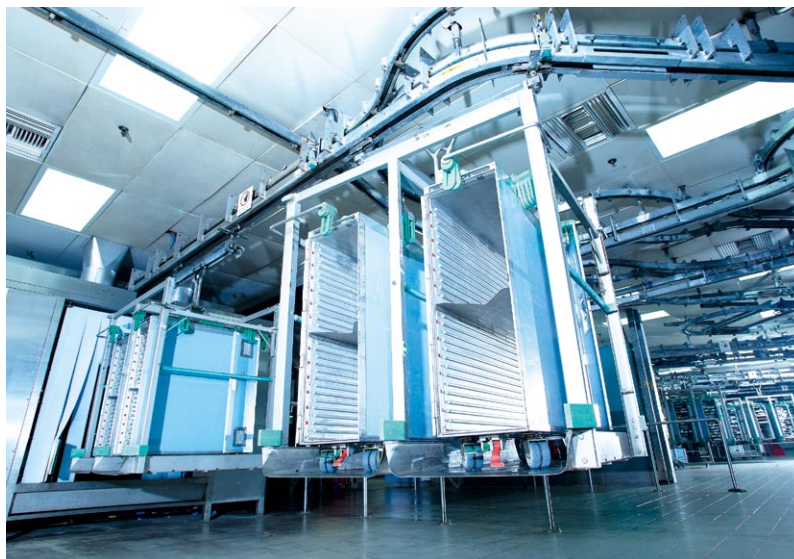
Our appliance sales also performed positively – we sold 234,000 units during the year, showing an improvement over 2010, despite the slowdown in the property market in the second half of the year. Customer satisfaction levels are also rising. Tracking studies consistently indicate high levels of customer satisfaction while the number of compliment letters received over the years has risen steadily. In 2011, we received 5,226 written letters, an increase of 3 per cent over the previous year, praising us for our services.

Reflecting our recognition in the community, the Towngas Group received the highest cAAA rating on Standard and Poor's Greater China Credit Rating Scale and we were listed in the leading business magazine, Yazhou Zhoukan's "Global Chinese Business 1000 – Outstanding Performance Award" for the third year running, ranking eighth among

Hong Kong's companies. We were named "The Best Listed Company" in Ta Kung Pao's "Golden Bauhinia Awards 2011" and honoured with "The Excellence of Listed Enterprise Awards" by Capital Weekly. In the customer service sector, we received the "Excellent After-sales Services Award" in Sing Tao Daily's "Excellent Services Brand".



See the stunning flame effects, powered by town gas, when the Fire Dragon and Water Dragon clash at the exciting Symbio show at Ocean Park.



Cathay Pacific Catering Services uses gas-powered steam washers and dryers to clean and dry the utensils, meal carts and meal trays used on flights.

## Growing Our Commercial and Industrial Activities

China's strong financial growth has not only helped to drive Hong Kong's economy, the large number of mainland visitors also benefitted Hong Kong's tourism industry. With the prosperity in the catering and hotel trades, we saw strong gas sales growth in this sector. In the course of the year, we successfully convinced a number of restaurants and food processing facilities to switch from diesel fuel to town gas, which is a cleaner and more convenient fuel.

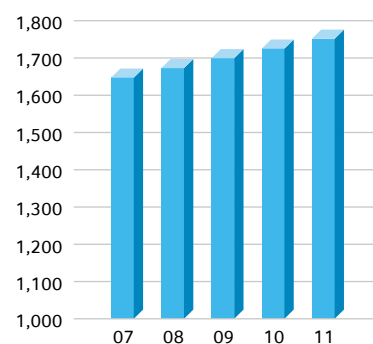
On the industrial front, we won a key new contract in the aviation catering business and also made strong inroads into the laundry industry, converting a number of

diesel boilers to gas. Gas usage at Hong Kong's theme parks is also growing as more attractions are fuelled by gas and patronage continues to rise. As such our commercial and industrial activities performed strongly during the year, with the industrial sector in particular, seeing an increase in gas sales of 18.4 per cent.

With rising oil and electricity prices, town gas offers a competitive energy alternative. Business managers are thus finding that it makes economic sense to switch to gas. At the same time, a number of businesses, particularly those in the food processing industry, are also making the move back to Hong Kong as production costs rise on the mainland. These are benefitting our local gas sales.

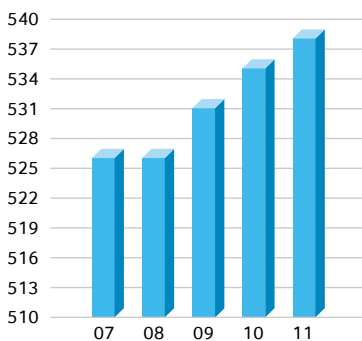
## Number of Customers

Company (Thousand)



This positive trend is further advanced by the comprehensive range of commercial gas appliances tailored for the Hong Kong market. In addition to their high efficiency, they create a cooler and more comfortable working environment – recovering flue gas for example, not only saves energy, it also creates cooler surroundings and improves air quality. Highlighting our successes in this direction, our self-developed “Cool Kitchen Four Treasures” series, consisting of a steam cabinet, a food steamer, a wok range as well as a stockpot, won the “Machinery and Machine Tools Design Award” in the prestigious “Hong Kong Awards for Industries” in 2011. Just as significantly, we are currently conducting a number of indoor air quality studies at various restaurants and hotels.

**Number of Customers per km of Mains** Company



Tailored to meet the specific needs of our customers, our Mia Cucina kitchens are helping to enhance the quality of life in Hong Kong.

### Serving Our Residential Customers

Further extending our Quality Living philosophy into the local community, we expanded the coverage of Towngas customer centres by opening further outlets in popular locations and unveiling our flagship Towngas Showcase at our headquarters in North Point. The new showcase, based on an all-in-one concept, displays our full range of gas appliances in simulated settings, featuring demonstration kitchens for both commercial and residential sectors.

We sold some 234,000 appliances during the year and achieved satisfactory sales for our stylish

Mia Cucina kitchen series. Offering total kitchen solutions tailored to meet individual customer requirements both in a cost-efficient and environmentally-friendly manner, we have sold more than 2,000 Mia Cucina kitchen units in Hong Kong.

Dedicated to continuous improvement in product design to bring customers ever greater convenience and comfort, we launched a new timer function for our TGC built-in hob series. Our TGC brand received a “Platinum Award” in the “Reader’s Digest Trusted Brand Award 2011 – Kitchen Appliance category”, confirming the quality and innovation of our products.

When conducting our Regular Safety Inspections (RSIs) at customer homes during the year, we paid particular attention to premises which have not been visited in the past five years due to lack of access. RSIs not only enhance safety, but also provide an ideal opportunity to encourage customers to upgrade their appliances. Confirming the value of this strategy, not only is the number of appliances sold through our service technicians and customer call centre staff growing, the number of on-demand service requests is also falling due to the growing use of more up-to-date appliances – dropping a significant 6.3 per cent in 2010, the figure fell by a further 13.4 per cent in 2011.

We also work with the government and a range of service organisations to take the safety message into the community. During the year, we carried out a number of gas safety briefings for major property management companies and housing estates to help them recognise how to prevent gas leaks and keep gas installations in sound condition.

### Enhancing the Gas Infrastructure

Despite our service supply continuity rate of 99.99 per cent, one of the highest international standards, we ensure the ongoing improvement of our

gas infrastructure, including our two production plants at Tai Po and Ma Tau Kok and a gas network consisting of some 3,500 kilometres of pipeline, covering about 86 per cent of homes in Hong Kong. In line with our vision to provide services with an environmentally-friendly focus, natural gas, probably the cleanest fossil fuel available today, accounts for about 57 per cent of our production fuel while landfill gas (LFG) accounts for about 2 per cent and naphtha makes up the balance.

Our use of LFG, a by-product in the decomposition of city solid waste, is particularly noteworthy. Its use not only captures an otherwise unwanted energy source, it also



Bake this mouthwatering confection for your loved ones. Find the recipe under our “Cook for Love” initiative, which provides over a thousand recipes on our website, Facebook page and smartphone app.

Our smartphone app, providing recipes and other online services, won both the “Top 10 Favourite Hong Kong Apps Awards 2011” and the “2011 Top Ten Healthy Mobile Phone/Tablet Apps”.



## Results of Towngas Service Pledge 2011

### RELIABILITY

Uninterrupted gas supply (over 99.99%)

**99.992%**

Three days prior notification in case of supply interruption on account of maintenance or engineering work

**100%**

Restoration of gas supply within 12 hours

**100%**

### SAFETY

Emergency Team arrived on site within 30 minutes at 95% of the times<sup>1</sup>

**96.18%**

### APPOINTMENTS

Availability of maintenance and installation services within two working days

**Average 1.03 day**

### SPEED AND CONVENIENCE

Customer Service Hotline calls answered within four rings

**95.33%**

Connect or disconnect gas supply within one working day

**100%** upon customer's request

Deposit refunded at Customer Centres two hours after disconnection of gas supply

**100%** upon customer's request

### SERVICE QUALITY

Efficiency<sup>2</sup>

**8.77**

Courteous and friendly attitude<sup>2</sup>

**8.79**

### HANDLING SUGGESTIONS

Reply within three working days

**100%**

Resolution, or a statement of when the matter will be resolved, within two weeks

**100%**

1. Average 19.82 minutes.

2. The result was based on monthly surveys conducted from January to December 2011 by an independent research company. Our target is to exceed a score of 8 out of 10.

reduces the emission of both methane, a greenhouse gas, as well as vast amounts of carbon dioxide, caused by flaring off the LFG into the atmosphere.

Efforts to increase our use of natural gas are also continuing. The laying of a 15 km pipeline to bring natural gas to our production plant in Ma Tau Kok is nearing completion. We are also extending the gas mains from Kowloon Bay to the new cruise terminal in South East Kowloon, together with further network improvements to cater

for several large food processing factories at the Tai Po Industrial Estate and a number of seafood restaurants in Lei Yue Mun.

Work is also progressing on the 9 km ring-feed pipeline that will enhance supply reliability in the Northwest New Territories. A twin submarine pipeline of around 3.3 km between Ma Tau Kok and North Point is also planned for relocation to facilitate the building of the new cruise terminal as well as the strategic Central Kowloon Route.

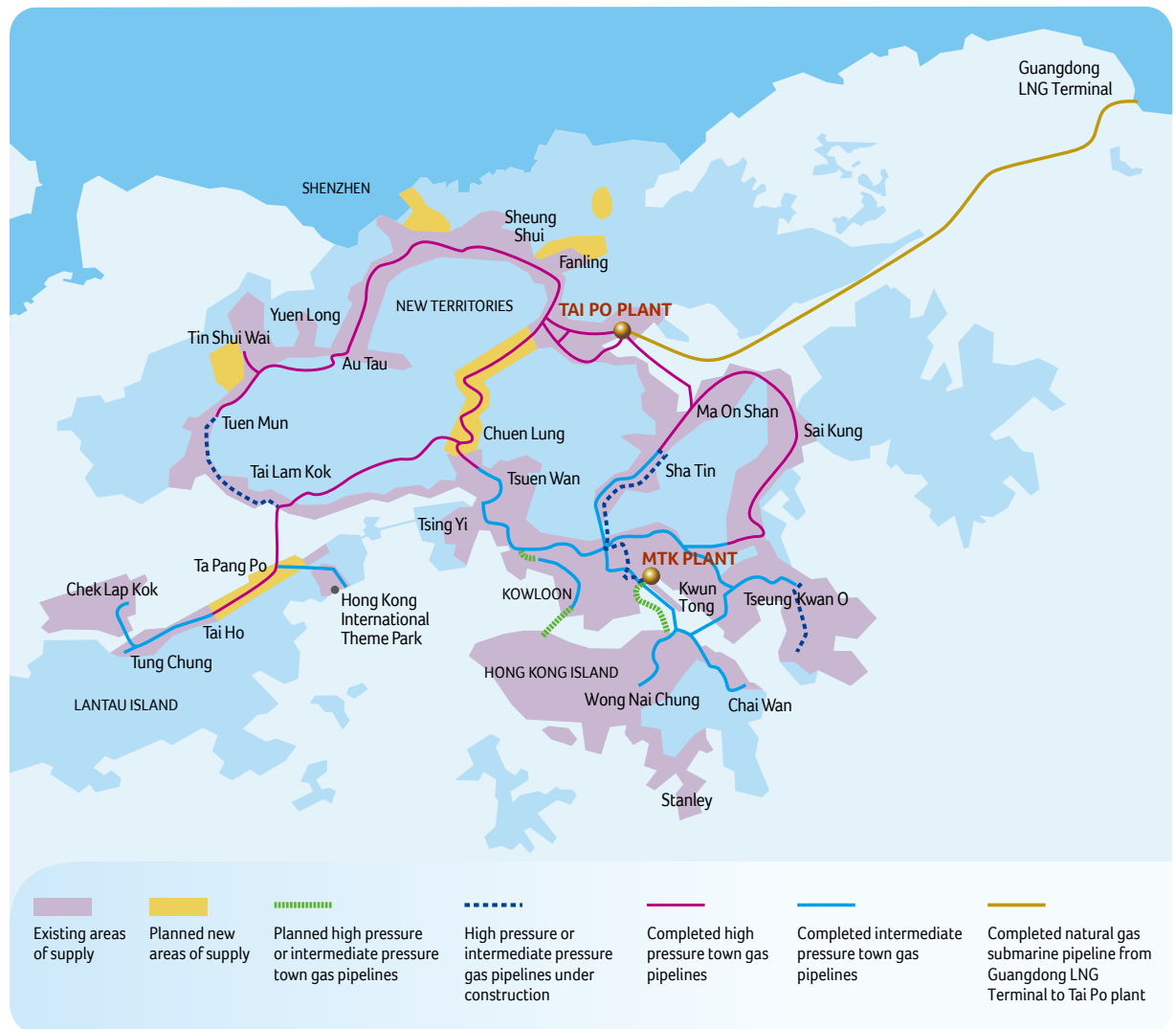
Ensuring the safety of our network, our proactive monitoring and preventive maintenance programme is aided by our advanced Supervisory Control and Data Acquisition (SCADA) system, Remote Control System and Geographic Information System. The SCADA system has proven to be so successful that it has been widely adopted by our joint-venture businesses on the mainland, in addition to also serving several city-gas operators outside the Group.

A major maintenance project during the year was the completion of the “fingerprint” inspection of the 34 km twin natural gas high pressure pipeline that links the Guangdong LNG Terminal to our production plant in Tai Po. The inspection showed that the pipeline is in an excellent condition.

Our “Pay for Safety, Quality and Environmental Appraisal System” seeks to motivate excellence in these attributes at work through an appraisal and monetary reward scheme. The system is unique in that 50 per cent of the incentive

payments are paid to the workers themselves. The quarterly presentation ceremony also provides managers with the opportunity to get to know and interact directly with the frontline workers.

### Towngas Network in Hong Kong





OUR NEW ENERGY AND DIVERSIFIED BUSINESSES

# Brightening the Future

ECO's portfolio  
consists of  
**20 new energy  
businesses**

**Clean coal  
methanol facility**  
in Inner Mongolia now  
fully operational

M-Tech established to  
provide **smart gas  
metering solutions**  
for the gas industry



Ensuring the transfer of both knowledge and experience from Hong Kong, our engineers work in close collaboration with our colleagues on the mainland.



# 34 Our New Energy and Diversified Businesses

Heightening our commitment to the development of new energies, we are **looking for newer and more diverse ways to produce clean fuel**. We are actively exploring the use of biomass energy, for example, with a focus on using renewable resources and waste materials.



During the year, our new energy and diversified businesses gained significant momentum contributing to the Group's revenues and overall profit. With more and more new projects coming on line, not only are we establishing a reputation as a leader in this still very young industry, this new business sector is also providing major impetus for our future business growth.

## New Eco-energy

ECO Environmental Investments Limited (ECO)'s pioneering commitment to the alternative and clean energy sector is reaping tremendous dividends. With its move into this infant industry, ECO has established a number of firsts in the field. More significantly, the knowledge and experience gained enables the company to look further afield at ever newer and more diverse opportunities. Commencing with just two projects little over 10 years ago, ECO is now involved in 20 ventures – 18 on the mainland together with the liquefied petroleum gas (LPG) filling stations and the ECO Aviation Fuel Facility (EAFF) in Hong Kong.

## Energy-related Logistics and Infrastructure Activities

Taking our first steps into this business in 2000 with the provision of five dedicated LPG filling stations and related services in Hong Kong, these activities have not only expanded into compressed natural gas (CNG) and liquefied natural gas (LNG) filling stations on the mainland, but also into the construction and operation of the EAFF to serve the needs of

Hong Kong International Airport at Chek Lap Kok.

The launch of the aviation fuel facility represented our first steps into a totally new direction – the fuel tank farm business. Taking advantage of our experience in the storage of naphtha for gas production, ECO won the 40-year franchise to build and operate this facility in Tuen Mun. Commissioned in 2010 in two



This new coal resource facility in Inner Mongolia is the first open-pit coal mine in the Group's operations.

phases, 2011 represented the EAFF's first full year of operation.

Consisting of eight large tanks capable of storing up to 264,000 cubic metres of aviation fuel in total, operations proceeded smoothly with a throughput of more than 5.5 million tonnes of fuel during the year. The EAFF also gained its OHSAS 18001 and ISO 14001 accreditations in 2011.

Our five LPG filling stations in Hong Kong provide clean energy to Hong Kong's taxis and public light buses, accounting for some 30 per cent of this market. On the mainland, ECO operates CNG and LNG filling stations in Shaanxi, Shandong, Shanxi, Liaoning, Henan and Anhui provinces with a total of nine stations. These facilities, which meet fuel requirements for trucks and other heavy duty vehicles, will expand further as new technology makes it possible to power other forms of transportation, boats and marine vehicles for example, with gas.

During the year, boosting our burgeoning activities in the clean coal energy business as well as our logistics network, we acquired a logistics hub, the Jiaxianggang Logistic Port in Shandong province, for the transportation of coal. Currently under construction and expected to be operational in 2012, this facility is connected to upstream suppliers by rail and while downstream, it extends all



Our coalbed methane plant in Shanxi province was fully commissioned in 2011 with a production capacity of 250 million cubic metres a year.

the way to Shanghai and the Yangtze River region by canal.

### Pioneering the Use of Renewable and Waste Resources

An area into which we have made significant inroads is the use of waste resources as a fuel. Starting on this journey as far back as 1999, when we began the use of landfill gas as a fuel in the gas production process in Hong Kong, we have extended these activities both into the use of coalbed methane (CBM) and coal-mine methane (CMM) on the mainland. These greenhouse gases, traditionally seen as waste materials were flared off on site, adding to the release of carbon

emissions into the atmosphere. We make good use of these resources, contributing to environmental protection.

Our CBM and CMM activities commenced with the opening of our liquefied coalbed methane (LCBM) plant in Shanxi province in December 2008. Employing cryogenic technology, the plant liquefies the CBM, making it 600 times more concentrated in energy intensity. As a result, the LCBM can be economically transported in bulk by road tankers to wherever it is needed. With the commissioning of the phase-two facility in March 2011, the plant, the largest of its

kind in China, now has an annual production capacity of 250 million cubic metres. Together with our CMM project, which will begin construction soon in Shanxi province, we expect to produce 320 million cubic metres of liquefied gas a year.

The extraction and use of this methane provides a host of benefits – firstly it makes use of a waste material, reducing the use of traditional fossil fuels. Secondly it prevents the release of methane, a potent greenhouse gas, or carbon dioxide – if the methane is flared off, into the atmosphere. The extraction of this highly flammable gas also provides a safer working environment in the mines. Together with China's abundant methane resources, which is found in coal seams, we see tremendous scope for the further development of these services.

### Clean Coal Utilisation Techniques

Despite China's huge coal reserves, the use of coal in its traditional form, burning it directly for its energy, while convenient, is also highly polluting. ECO has therefore been focusing on clean coal utilisation techniques, based on the gasification of coal, to create synthesis gas. This gas in turn can be modified chemically into a range of useful products. One of these is methanol – a highly efficient and clean burning fuel. Not only can it be turned into automobile fuel, it can also be used as a chemical feedstock.

Turning vision into reality, our coal-based methanol plant in Inner Mongolia is now at the pilot production stage. Due to be fully commissioned in mid-2012, it is well on track to achieving its capacity of 200,000 tonnes of methanol a year. A further coal

chemical project is taking shape in Jiangxi province and expected to come on stream in 2012. Besides producing coke from coking coal, the coke oven gas, a by-product, will be fed into our city-gas network for industrial use nearby. Coking coal from a nearby mine will feed this coke-oven plant.

Construction of our coal mine in Xiaoyugou, Inner Mongolia was also completed and pilot production commenced in early 2012. When fully operational, it will supply 1.2 million tonnes of coal a year to our methanol plant in the vicinity. Seizing the opportunities in this developing industry, ECO also invested in a number of coal-mining and coal infrastructure projects during the year. This includes an operating coal mine in Inner Mongolia – the Group's first open-pit coal mine, its coal resources are being used for the Group's clean coal activities.



Supplying coal to our methanol plant in the vicinity, the construction of the Xiaoyugou mining facility was completed in Erdos, Inner Mongolia.

Heightening our commitment to the development of these new energies, we are looking for newer and more diverse ways to produce clean fuel. In addition to our own research and development facilities in Hong Kong, we are also working in partnership with a number of research institutes and technology entities in mainland China and also overseas in the development of more visionary clean coal utilisation techniques. We are actively exploring

the use of biomass energy, for example, with a focus on using renewable resources and waste materials.

Aware that mine safety is of the utmost importance, comprehensive safety systems and processes are being established for ECO's new businesses in China. These include safety management systems both for the coal mine as well as the methanol plant in Inner Mongolia.

## Telecommunications

Our telecommunications services, managed and operated by Towngas Telecommunications Company Limited (Towngas Telecom), experienced heightened growth and increased activity. Providing high-end telecommunication infrastructure services and quality network solutions for telecom carriers, service providers and large corporations, our optical fibre network, which rides on our gas networks using either glass-in-gas (GIG) or glass-along-gas (GAG) techniques, offers substantial synergies and economies of scale.

The data centre business, providing management and operations for computer equipment housed at the centre, coupled with rising demand for cloud computing services, witnessed exceptional growth. As such, our facilities in Hong Kong, which virtually doubled in size in 2010, reached saturation point



Our 16,000 square metre data centre in Jinan, Shandong province, not only offers the highest standards of service, it also supports the government's development plans to improve outsourcing services for the industry.

in 2011. To meet this growing demand, both for cloud computing and outsourced IT services, we are establishing a new, world-class Internet Applications Centre, with an area of 22,000 square metres at the Tseung Kwan O Industrial Estate. This area, with the encouragement and support of the Hong Kong government, is rapidly evolving into a data centre hub for the Asian region.

Our telecommunication-related activities on the mainland currently include a number of projects. In addition to various GAG projects in Liaoning, Shandong and Jiangsu provinces, we are also operating a top level data centre, consisting of over 16,000 square metres in Jinan, Shandong province, while a further data centre is being built in Dalian, Liaoning province.

## Water Supply and Wastewater Operations

Our water businesses, managed and operated by Hong Kong & China Water Limited (Hua Yan Water), continued to prosper. Water sales in our three projects grew by 8 per cent to reach 371 million tonnes during the year.

A major achievement was the addition of a new project, the China-Singapore Suzhou Industrial Park Environmental Technology Company Limited, to Hua Yan Water's existing business portfolio. The project, specially established to treat wastewater generated by an electronic component production plant in the Suzhou Industrial Park, is significant as it not only marks a further step forward in our mainland water portfolio, it also highlights the increasing bonds we enjoy with

the local authorities. Beginning with the supply of LPG to the Industrial Park in the early days some ten years ago, these activities subsequently spread to the supply of a pipeline network, followed by the provision of water supplies and sewage treatment, while more recently, it resulted in this industrial wastewater treatment project.

A further achievement has been the implementation of the secondary water supply in the Suzhou Industrial Park. Under this new policy supported by the local authorities, we are now responsible for the management of the entire water processing and distribution system, all the way from the headstream to the taps of local residences, leading to improved water quality and enhanced service in the provision of cleaner, safer and more reliable drinking water to our customers. Over the next few years, we expect the growth in water supply to be higher than originally envisioned as more and more industrial facilities are being established in these regions.

Attesting to the innovation, commitment and high team spirit prevalent in our water businesses, Hua Yan Water won the grand prize in our Carbon Reduction Programmes on the mainland yet again. The winning proposal came from the Suzhou water project to prevent rainwater from entering the wastewater system. This



U-tech participated in a greening project along the 550-metre promenade linking Tsim Sha Tsui to Hung Hom. The results provide a pleasant and relaxing harbourfront venue.

simple idea reduced the amount of wastewater to be processed by 3 million tonnes in 2011 alone.

### Civil and Building Services Engineering

During the year, U-Tech Engineering Company Limited (U-Tech) cemented its leading role in Hong Kong in the use of trenchless technology, working on several projects both within the Group and externally, in a number of waterworks and drainage contracts. In 2011, we gained a water mains replacement and rehabilitation contract for the Water Supplies Department, and the construction of a salt water service reservoir was also in good progress. The completion of these projects will pave the way towards a confirmed Group C contractor status, which will help expand our scope of work for the local government.

### Manufacturing Facilities

GH-Fusion Corporation Limited was formed in 2000 to manufacture and supply polyethylene (PE) pipe fitting products and jointing equipment for gas and water piping systems. In addition to providing us with a supply of PE piping, the manufacturing of our own product ensures that they meet the highest standards of safety and quality required. Extending this strategy, M-Tech Metering Solutions Company Limited (M-Tech) was established during the year to develop and manufacture advanced electronic gas meters, using the Micro-Electro-Mechanical System (MEMS) gas mass-flow measurement technology pioneered in Silicon Valley in the United States. M-Tech meters will provide both more advanced and accurate smart gas metering solutions for the gas industry both in China and beyond.

## New Energy and Other Projects in Mainland China in 2011

	Year of Establishment	Project Investment Rmb M	Registered Capital Rmb M	Equity Share %
<b>NEW ENERGY PROJECTS</b>				
<b>Coal Mining</b>				
Jiangxi Fengcheng	2008	1,100	236	25%
Inner Mongolia Erdos Xiaoyugou	2009	447	120	70.1%
Inner Mongolia Erdos Kejian	2011	450	150	100%
<b>Coal-based Chemical</b>				
Jiangxi Fengcheng	2009	1,250	350	40%
Inner Mongolia Erdos	2009	1,170	400	70.1%
<b>CNG/LNG Filling Stations</b>				
Shaanxi Xianyang	2007	4	4	60%
Shaanxi Huitai	2010	54	27	60%
Anhui Maanshan	2006	15	11	30%
Shanxi Yuanping	2008	34	20	42%
Dalian DETA	2010	40	20	49%
Shandong Chiping	2010	30	15	70%
Shandong Jining	2010	30	15	51%
Shandong Dongping	2010	20	14	91%
Henan Xinmi	2011	29	15	100%
<b>Upstream Projects</b>				
Shanxi LCBM	2006	600	200	70%
Jilin Tianyuan	2007	140	8	50%
LCMM Project	2010	520	180	50%
<b>Coal Logistic Project</b>				
Shandong Jining Jiexianggang Logistic Port	2011	540	180	55%
<b>TELECOMMUNICATION PROJECTS</b>				
Shandong Jinan	2007	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%
<b>WATER PROJECTS</b>				
Wujiang	2005	2,450	860	80%
Suzhou Industrial Park	2005	3,685	2,197	50%
Wuhu	2005	700	300	75%
Suzhou Industrial Park (Industrial Wastewater Treatment)	2011	828	300	49%
<b>OTHER PROJECTS</b>				
Shenyang Sanquan Construction Supervisory	2011	4	3	60%
M-Tech	2011	28	14	100%
GH Fusion	2002	87	43	50%
Towngas Technology	2011	10	7	70%



CORPORATE SOCIAL RESPONSIBILITY

# Building Trust

Won the **American Society for Training and Development's "BEST Award"** for our corporate culture and employee development programmes in China

**"Wenxin"**, our internal employee engagement programme, was launched

Our accident figures in Hong Kong fell to 7 cases, **the lowest** on record

Our social and volunteer services seek to brighten the life of those around us.





While all our activities must be based on sound business practices, they must also have the interests, not only of our stakeholders but also of our communities, at heart.

The success of our business can only be sustainable if we have the trust of our employees, customers, business partners and the general community. As such, while all our activities must be based on sound business practices, they must also have the interests, not only of our stakeholders but also of our communities, at heart. Therefore, in addition to providing quality, efficient and cost-effective services to our customers, our focused commitment, to our people, the communities that we serve and our planet, forms the backbone of our corporate social responsibility programme.

## Environmental Sustainability

In recent years, there has been growing debate on environmental sustainability as higher populations, greater industrialisation and increasing pollution take their toll. Fully aware of these global concerns, we have always made every attempt to treat our environment with respect.

In line with this philosophy, we introduced landfill gas into the gas production process in 1999 and natural gas, probably the cleanest fossil fuel available, in 2006. Together they account for about 60 per cent of our total production today.

On the mainland, our 100 city-gas operations are almost entirely based on the use of natural gas. Our new and alternative energy activities, from the use of liquefied coalbed and coal-mine methane to our clean coal pursuits, are also driving the use of clean energy to new highs.

Enhancing our green programmes in Hong Kong, we established a Green Development Steering Committee, which apart from developing environmental key performance indicators, will be looking into carbon footprint studies of a typical gas appliance. In mainland China, building on the tremendous success of our carbon reduction competition in 2010, the exercise was repeated in 2011. Receiving a total of 47 submissions against 38 in the previous year, these projects reduced carbon emissions by 10,000 tonnes in 2011, equivalent to the carbon dioxide removed by 430,000 trees annually.

We supported activities organised by green groups both in Hong Kong and on the mainland. These ranged from Friends of the Earth (HK)'s tree planting challenge to Hong Kong



With the enthusiastic support of our employees, 16,139 trees were planted in a 69,477 square metre area under our tree planting activities on the mainland in 2011.



At our “Low-carbon Mid-Autumn Fun” workshops, children created their very own graffiti eco-lanterns, while also learning how to make fun and creative cupcakes x mooncakes.

Green Sense’s “No Air-con Night” and the WWF’s “Earth Hour” initiative. We also sponsored the Conservancy Association’s “Green Leaders Bloc” which recruits and trains university students to help protect the environment as well as Green Power’s “World Environmental Day – Let’s Go Low Carbon” campaign seeking to publish a storybook about Emperor Penguins targeted at primary students. Driving low-carbon development in the commercial sector, we participated in “Eco Expo Asia 2011”, organised by the Hong Kong Trade Development Council.

A “Low-carbon Mid-Autumn Fun” campaign was also held to promote environmental awareness whilst celebrating the Mid-Autumn Festival. In addition to an exhibition of over 200 graffiti Chinese lanterns, workshops were held enabling participants to design their own eco-friendly graffiti lanterns.

These efforts are widely recognised in the community. We received the “WasteWi\$e Label – Class of Excellence” yet again and we also won the Green Council’s “Green Management Award – Silver Award”. Following our winning of the Grand Award in the “Hang Seng Pearl River Delta Environmental Awards” last year, we were once again named as a “Green Medalist” in the awards this year.

### Social Sustainability

Reaching out to our communities, our aim is to improve the quality of life for the less fortunate and the financially disadvantaged. Our Towngas Concession Schemes provide the foundations for this commitment – offering concessionary rates for our town gas services, these schemes are available to the elderly, people with disabilities as well as single-parent families. In 2011, low-income families were added to this list.

Integrating our focus on cookery together with our commitment to enhance the quality of life in Hong Kong, we continue our annual Rice Dumplings and Mooncakes for the Community initiatives. These activities not only bring the holiday spirit and festive cheer to the elderly and people living on their own, they also help to keep old traditions alive as they teach participants, and the young in particular, how to make these festive and traditional delicacies.

In addition to teaching about 100 primary students how to make special low-carbon dumplings, during the year, some 220 legislative councillors and district councillors together with various local voluntary groups gathered to wrap 230,000 rice dumplings for distribution in the community. Similarly, we distributed 100,000 mooncakes with the support of 50 NGOs, employees and volunteers.

A new initiative, our “Cook for Love” campaign was launched in partnership with the Social Welfare Department (SWD). Our volunteers and their families provided mentoring services to needy single-parent families, helping to improve their communication and social skills through interaction and group activities such as cookery classes, games, rock-climbing and sports.

These community service programmes are organised, managed and operated by our Towngas Volunteer Service Team, who received the Championship in the SWD’s “Highest Service Hour

Award in 2010, Private Organisations – Best Customer Participation” for the fourth year running. Since this team was founded in 1999, it has racked up over 326,000 volunteer service hours for the community.

As in Hong Kong, our mainland businesses have established volunteer teams to serve the community. Programmes, from our rice dumpling and mooncake activities to book donation campaigns, continue apace earning us a host of awards. These included the “Enterprise with Outstanding Community Service in China”, “Most Influential Enterprise in Corporate Social Responsibility Affairs” as well as “China Best Corporate Citizenship”.

During the year, we expanded our “Book Donation with Love and Care Programme”, collecting up to 15,000 books for distribution to schools in 10 different provinces. We also continued our association with

the Shanghai Soong Ching Ling Foundation – Bank of East Asia Charity Fund, helping to establish another “Firefly Playground”, a voluntary learning programme for primary students, and we also extended the activities of our “Jingqi Mentoring Scheme” to Hunan province. Launched in 2010 in collaboration with the Virya Foundation, this scheme provides a one-year mentoring scheme for university students.

**Corporate Sustainability**

In building a sustainable and quality Towngas workforce, which currently consists of more than 38,000 skilled and experienced professionals both in Hong Kong and on the mainland, we not only offer competitive salaries and benefits, we also make every effort to ensure employee well-being and ongoing career advancement with comprehensive training and development.

**Empowering Our People**

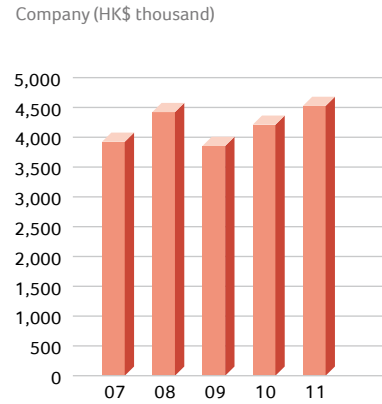
Training and development is crucial to our activities, both from a professional and a cultural viewpoint. Professionally it guarantees a pool of talented and able employees who will help us to achieve our business goals. Culturally it ensures that our people not only share our goals but that we do so with mutual respect as well as with like-minded expectations and standards.

We were thus delighted to receive the American Society for Training and Development (ASTD)’s “BEST Award” for our well-established corporate culture and employee development programmes in our China operations. ASTD is one of the world’s most well-known associations dedicated to workplace learning and the development of professionals. Winning this recognition is all the more rewarding as it is the first time that we have participated in the award.

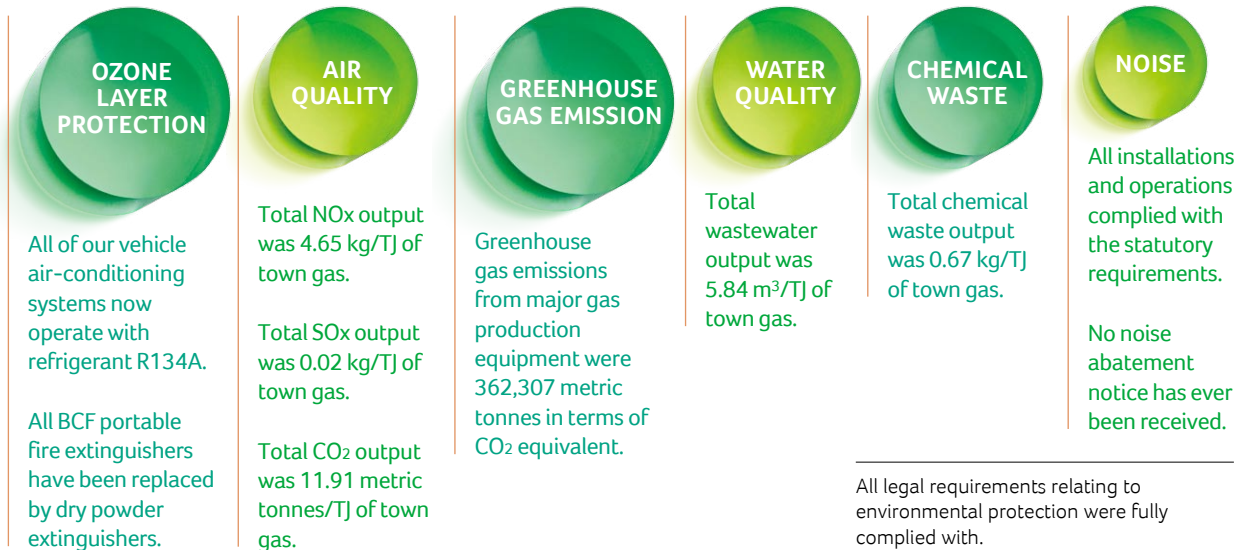


We have expanded our “Book Donation with Love and Care Programme” from Sichuan province to several other regions. The children here enjoy our 20th Book Corner located in Henan province.

**Revenue per Employee**



## Environmental Performance Table (Hong Kong)



On a professional level, our training programmes provide our employees with the necessary skills and expertise to carry out their jobs. To this end, our Towngas Engineering Academy (TEA) carries out a number of trainee and apprenticeship schemes, helping to add new blood into the gas industry. In addition to the centre in Hong Kong, training centres in Shandong, Sichuan and Changchun also provide training to our frontline technical staff, not only ensuring their technical competence but also certifying their professionalism when training has been completed. Together with refresher training both for our employees and contractors, train-the-trainer programmes as well as continuing professional development talks and seminars, which promote a lifelong learning culture, TEA completed some 123,700 man-hours of training during the year.

A highlight during the year was the “Leading Others” programme introduced to strengthen leadership competencies among our supervisors and managers in Hong Kong. Based on our vision, mission and values, some 56 frontline managers and supervisors completed this course in its first launch.

Our “Graduate Trainee Scheme” is set to celebrate its 30th anniversary in 2012. Commending us for our achievements in this direction, we received an award from the Hong Kong General Chamber of Commerce for the scheme. A further 10 graduate trainees were recruited for our businesses both in Hong Kong and China in 2011, and in view of its growing management needs, ECO launched its own 18-month management trainee scheme on the mainland, hiring around 18 graduates a year, to build a pool of talent for the future.

In August 2011, we launched the second round of our “Corporate Towngas Leadership Competencies” scheme for 19 executives chosen from our various operations. This 18-month talent acceleration scheme aims to stretch the abilities, not only of participants but also of the people around them, as colleagues, supervisors and mentors are also invited to join in some of the courses and activities.

Enhancing their leadership competencies, 153 general managers and senior managers from our mainland companies participated in our “Executive Development Programme” that was organised with mainland universities such as Tsinghua University, Nanjing University, Dalian Polytechnic University and Southwestern University of Finance and Economics.



Our senior managers visited over 1,300 frontline employees working outdoors in the blistering August heat. Our Managing Director, Alfred Chan (fourth from left, second row), is seen here on a visit to a network site.

### Promoting Employee Well-being

In building a sustainable workforce, the well-being of our employees is critical to establishing loyalty and trust. During the year, we launched our internal corporate culture promotional campaign, “Wenxin” programme – “Wenxin” translates into “warmth and care” in English, not only to show our appreciation and thank our people for their help and support, but also to increase their involvement in the company and strengthen their ties in our Towngas family.

As part of this programme, members of our Executive Committee and management visited staff working outdoors in summer, distributing towels and cooling herbal tea prepared by a social enterprise. We also launched a 24-hour hotline, “Warmth Express”, providing professional and confidential

counselling services to help employees deal with stress and other emotional or personal issues that they may need to resolve. A song-writing competition was held, looking for new lyrics for our Towngas theme song, to highlight our warm and caring corporate culture.

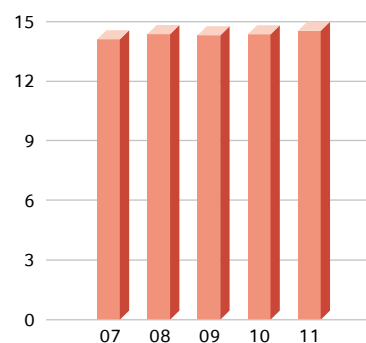
These family-friendly policies as well as our commitment to family core values won us yet another award during the year. In addition to our rankings in the past as one of the top ten most preferred employers in Hong Kong, we were honoured with the “Distinguished Family Friendly Employer Award”, presented by the Family Council.

### Ensuring Employee Work Safety

During the year, we won various awards in the Occupational Safety and Health (OSH) Council’s “Hong Kong OSH Awards”, including gold awards in two categories – Safety

### Town Gas Sales per Employee

Company (million MJ)



Management System and OSH Annual Report, as well as the “Safety Performance Award”.

We completed a combined audit programme, covering four of our quality management systems – ISO 9001, ISO 14001, OHSAS 18001 and PAS 55, in one go. We also became the first utility in Hong Kong to receive our “International Safe Workplace Programme” designation under the framework of the World Health Organisation Safe Community.

These ongoing efforts continue to reap dividends. Industrial accident figures have been falling both on the mainland and in Hong Kong, bringing us closer to our zero accident goal. In Hong Kong, we achieved our lowest accident rate on record – the figure fell from 12 accidents in 2010 to just 7 cases, with no serious injuries, during the year.