



煤氣  
Towngas

Greening up your life

[Stock code: 3]



SUSTAINABILITY  
SUMMARY REPORT  
**2016**

# IN ACHIEVING SUSTAINABILITY, WE...

Maintain the highest standards of corporate governance

Consider risk governance as the top priority and establish a robust risk management system

Follow strict internal Codes of Conduct on best practices and ethical behavior

Ensure open, accountable and transparent communications

Guarantee efficient, effective and reliable business practices and operational controls

Act in the best interests of our stakeholders

Fulfill our corporate social responsibilities to our stakeholders, the environment and our community

Take the lead in our industry on all of these imperatives

Recognise the importance of our employees and our responsibility to keep them safe, engaged and equipped to undertake our mission

**List of Barrier-free**  
Companies / Organisations  
無障礙友善企業/機構名單 (2016/17)  
Awarded by The Hong Kong Council of Social Service  
香港社會服務聯會頒發

**15 years +**  
商界展關懷  
caring company  
Awarded by The Hong Kong Council of Social Service  
香港社會服務聯會頒發

## Major Corporate Awards and Recognitions in 2016

### Governance

- **The Outstanding Listed Company Award**  
by the Hong Kong Institute of Financial Analysts and Professional Commentators Limited
- **Constituent Company of the Hang Seng Corporate Sustainability Index Series**  
by Hang Seng Indexes Company Limited

### Business and Service

- **Listed Enterprises of the Year 2016**  
by Bloomberg Businessweek / Chinese Edition
- **Hong Kong Service Award – Public Utilities**  
by East Week

### Safety

- **The 15th Hong Kong Occupational Safety and Health Award**
    - Annual Report Award – Gold Award
    - Pointing and Calling Award – Gold Award (ECO Environmental Investments Limited)
    - Safety Performance Award
      - > Other Industries
      - > Construction Industry (U-Tech Engineering Company Limited)
- by the Occupational Safety and Health Council

### Social

- **The 7th Hong Kong Outstanding Corporate Citizenship Awards**
    - Enterprise category – Gold Award
    - Volunteer Team category – Gold Award
    - Special Commendation for Community Care
- by Hong Kong Productivity Council
- **Award of 10,000 Hours for Volunteer Service**  
by the Social Welfare Department

### Environment

- **2015 BOCHK Corporate Environmental Leadership Awards – Gold Award (Manufacturing Sector)**  
by The Federation of Hong Kong Industries and the Bank of China (Hong Kong) Limited
  - **U Green Awards**
    - Public Utilities (Excellence)
    - My Favourite Green Building – Towngas Headquarters
- by U Magazine



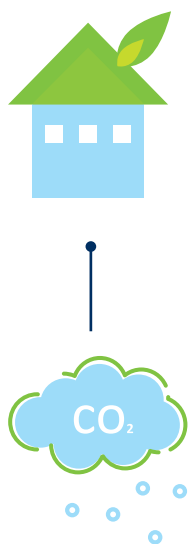
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# ENVIRONMENTAL PERFORMANCE

Towngas is committed to reducing the environmental footprint of the energy services at source and searching for cleaner fuels. We also support innovation, invest in technology and businesses that lessen our environmental impact, stimulate long-term growth and strive for the highest standards of operational efficiency.



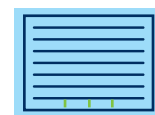
## Key Environmental Performance 2016



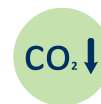
Total GHG emissions  
**1,258,000 tonnes CO<sub>2</sub>-e**

**23% reduction** in GHG emissions of our gas production in Hong Kong compared with 2005

**27 projects** received from operations in Hong Kong and mainland China for our seventh **carbon reduction competition**



**2,700 tonnes carbon emissions** reduced by heat recovery system at our Tai Po gas production plant



**1% reduction** in water use at Towngas headquarters compared with 2015



## Environmental Management Systems and Project Management

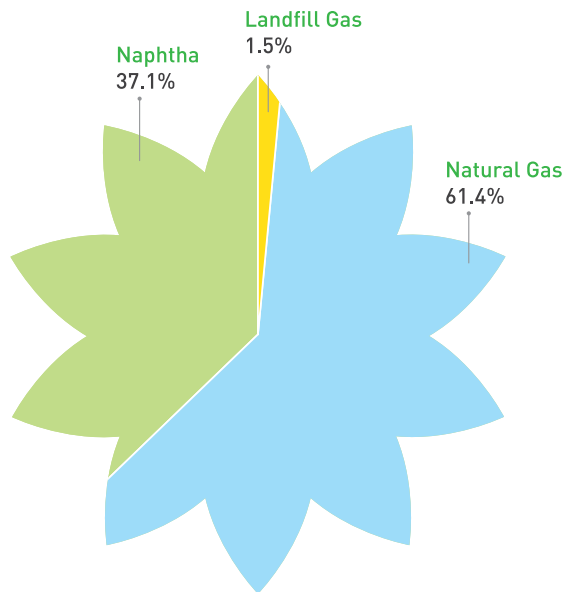
We ensure all our activities follow the most stringent regulatory requirements and benchmark ourselves against the highest international standards and Codes of Practice. Before we develop new infrastructure projects, we undertake an environmental impact assessment in accordance with Hong Kong's Environmental Impact Assessment Ordinance. In 2016, we carried out environmental audits across 98 of our joint ventures (JVs) in mainland China, each focusing on energy conservation, waste and wastewater management and noise control.

## Managing Climate Risks

The changing climate patterns are having an impact on the global business landscape and the company operations. To enhance our resistance to climate change, we incorporated the risk of climate change into our existing practices. In 2016, we started to assess the risks of our operations in mainland China to ensure the infrastructure can withstand the effects of extreme weather, ensuring public safety and gas supply reliability.

Since 2006, we have used natural gas as an effective feedstock option to produce town gas for households in Hong Kong. We also modified our plant at Ma Tau Kok to replace naphtha with natural gas.

**2016 Fuel Mix for Town Gas Production**



### Harnessing Landfill Gas

-  **1999** • Began harnessing landfill gas from the Shuen Wan landfill site for small-scale use
-  **2007** • Landfill gas generated at the North East New Territories (NENT) landfill site was treated and transmitted to our Tai Po production plant and replaced some of the naphtha used as heating fuel in our town gas production
-  **2016** • The construction of South East New Territories (SENT) Landfill Gas Treatment Plant was completed by end of 2016 and will be commissioned in the first half of 2017. Landfill gas is treated to synthetic natural gas that has impurities removed, and is transported to a regulating station in Tseng Lan Shue where it is injected into the towngas supply network
- **Environmental Benefits:** Reduce naphtha consumption by 13,000 tonnes per year, offset 56,000 tonnes of carbon emissions per year (equivalent to planting 2.4 million trees)

- Towngas launched the first commercially viable Combined Heat and Power (CHP) project in Hong Kong: The treated landfill gas from the NENT site was brought by Towngas to fuel the CHP system at the Alice Ho Miu Ling Nethersole Hospital. This project reduces carbon emissions by an anticipated 2,000 tonnes per year, equivalent to planting 87,000 trees. It also improves overall efficiency to more than 80%.



## New Energy Developments and Unconventional Energy

### Clean Vehicular Fuel

In 2016, our five liquefied petroleum gas (LPG) refilling stations in Hong Kong together sold approximately 61,000 tonnes of fuel, and served more than 18,000 LPG taxis and minibuses. In mainland China, we continued to promote liquefied natural gas (LNG) as a fuel alternative to diesel for heavy duty trucks.

### Coalbed Methane (CBM) and Coke Oven Gas

As of 2016, our liquefied CBM plant in Shanxi province has a designed production capacity of 250 million cubic metres of liquefied CBM per year. We also completed the construction of a project in Xuzhou, Jiangsu province, to produce LNG by the methanation of coke oven gas.

### Methanol and Gasoline

Our coal-based methanol production plant in the Inner Mongolia Autonomous Region operated smoothly and produced a yield of approximately 312,000 tonnes of methanol. Our plans are afoot to enable methanol conversion to natural gasoline.

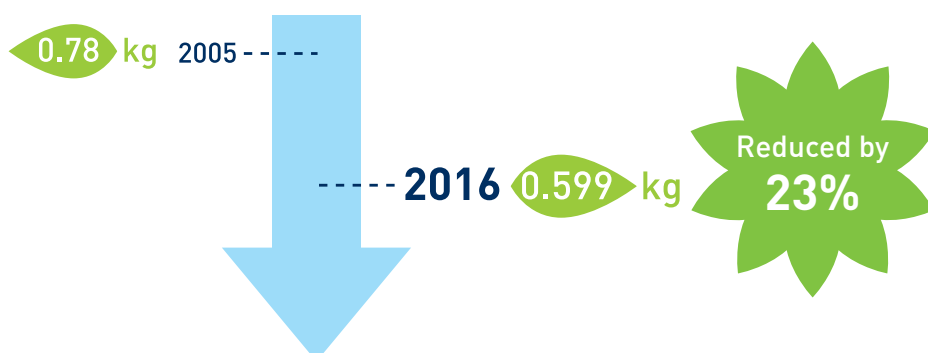
### Turning Waste into Energy

We constructed a plant at Suzhou Industrial Park under our brand Hua Yan Water which will convert 500 tonnes of food waste, green waste and landfill leachate into natural gas, oil products, solid fuel and fertiliser every day.

## Greenhouse Gas (GHG) Emissions

Towngas conducted a company-wide carbon audit aligned to ISO 14064-1 standard to quantify and report our GHG emissions. Towngas operates two town gas production facilities in Hong Kong and over 240 projects in mainland China. We are continually exploring and alleviating the impacts associated with these operations, and searching for opportunities to reduce GHG emissions.

### Carbon Emissions per Unit of Town Gas





## Carbon Reduction Competition 2016

In 2016, we received a total of **27 entrants** from our Hong Kong and mainland China operations, which resulted in annual savings of **64,500 tonnes** of carbon emissions.

## Water Conservation

To produce gas, we require a reliable water supply. We try to reduce our water consumption and wastewater discharge by enacting a range of measures at our plants.



Rainwater  
harvesting system

**4,125 m<sup>3</sup>**

water collected in 2016



Reverse  
osmosis facility

Around

**118,000 m<sup>3</sup>**

effluent reduced in 2016



Wastewater discharge  
(m<sup>3</sup> per million MJ of  
Town Gas)

**4.10**

decreased by 30%  
compared with 2011

## Green Partnerships

In 2016, Towngas continued to develop partnerships with an array of Hong Kong's green groups by supporting and participating in a range of their programmes to reinforce environmental protection.



Friends of the Earth (HK)  
**Capturing Green Living –  
GREENFIE**



The Conservancy Association  
**Eco Rangers 2016**



World Green Organisation  
**Green Walk Campaign**

Green Power  
**5riday Green Challenges  
Programme**

WWF  
**Earth Hour**

Greeners Action  
**Lai See Packet Reuse and  
Recycle Programme**

Green Sense  
**No Air-Con Night**

Clean Air Network  
**AirMazing Race**

Green Council  
**Hong Kong Green Day**

## SAFETY PERFORMANCE

All operations of Towngas are underpinned by an unwavering commitment to safety. Our HSE policy, which conforms to ISO 9001, ISO 14001 and OHSAS 18001 standards, ensures our operations do not risk the health, well-being and safety of our people, contractors, customers or the public. We aim at a record of zero accidents and comply fully with all relevant health and safety legislation.

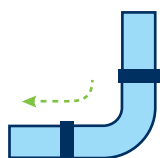


### Key Safety Performance 2016

#### HONG KONG



**24,094** safety training hours



Number of trench inspections  
**12,606** sites



**12** reportable accidents

Number of network inspections  
**176,925**



#### MAINLAND CHINA



**906,691** safety training hours

**99** JVs of city-gas business completed safety audit and achieved an average score of "Excellent"



**13** serious gas-related incidents

## Infrastructure Safety

In Hong Kong, we work closely with the Electrical and Mechanical Services Department to create strategic plants which include a facilities utilisation framework and a preventative maintenance index to guarantee optimum safety standards. In mainland China, we adopt bowtie analysis to identify potential risks arising during operational stages at our chemical plants, and ways to offset them systematically.

### Network Safety Performance 2016 (Hong Kong)

Area	Results	Target
Gas Supply Reliability	<b>99.991%</b>	>99.99%
Gas Incidents Reported by the Public per 10 km of Gas Pipes	<b>0.18</b>	<=0.15
Third-party Damage Incidents	<b>13</b>	<=7
Emergency Team Average Arrival Time within 25 minutes	<b>Achieved</b>	

### Key Safety Statistics (Hong Kong)

	2016	2015	2014	2013	2012
Number of Accidents – all industrial injuries	<b>13</b>	19	14	15	10
Accident Frequency Rate	<b>0.19</b>	0.29	0.22	0.24	0.19
Number of Reportable Accidents	<b>12</b>	15	12	12	7
Accident Incidence Rate	<b>4.1</b>	5.3	4.4	4.9	2.5
Fatal Accidents	<b>0</b>	0	0	1	0
Number of Industrial Injury Person – days lost	<b>576</b>	596	132	194	111

Remarks:

- Accident – an accident that results in injury for one or more days
- Accident Frequency Rate – the number of accidents per 100,000 person-hours worked
- Reportable Accident – an accident that results in incapacity for more than three days
- Accident Incidence Rate – the number of reportable accidents per 1,000 employees
- Towngas employees and the employees of its subsidiaries only

## Activity Highlights in 2016

### HSE Month

### Stay Healthy Programme

### Fire Safety Training







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## SOCIAL PERFORMANCE

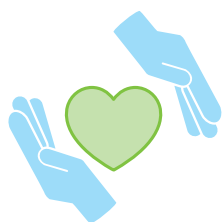
Towngas puts social responsibility at the heart of everything it does. Underpinning our duty is our belief in inclusion – not just for our employees, contractors and customers – but for those in society who are most in need of help. Our inclusive approach is defined by how we develop the well-being of our people, pursue a high standard of product responsibility and strive to improve society.



### Key Social Performance 2016



#### HONG KONG



**248 voluntary activities** in which Towngas volunteers took part



**133 programmes** supported through active participation, donation or in-kind sponsorship

**830 employees** registered for voluntary services



**488,755 people** who benefited from our volunteer services



**75,588 voluntary service hours** (including employees and customers)



**4,717 Personal Emergency Link Services** checked



**45,719 households** benefiting from all Towngas Concession Schemes



#### MAINLAND CHINA



**RMB2.9 million** donated through our Gentle Breeze Movement since 2013



**More than 93,000 voluntary service hours** worked for local communities



**More than 2,500 trees** planted, covering over **6,600m<sup>2</sup>**

## Our People

Towngas acknowledges the importance of diversity and inclusion to our business. Recently, Towngas hired more disabled people for different roles across a range of departments, and will continue to provide them with training to realise their talents fully. Harnessing our philosophy of “Growth = Innovation x Implementation”, we ran a series of programmes on change and innovation, aiming at different employees in mainland China and Hong Kong.

### Towngas Engineering Academy Training in 2016

	Training Man-hours	Employees Trained
Continuing Professional Development Seminars	1,967	1,483
Technical Training (Hong Kong)	45,497	3,098
Technical Training (Mainland China)	143,612	6,934



**189,109** Technical Training Hours  
were reached by OUR  
EMPLOYEES

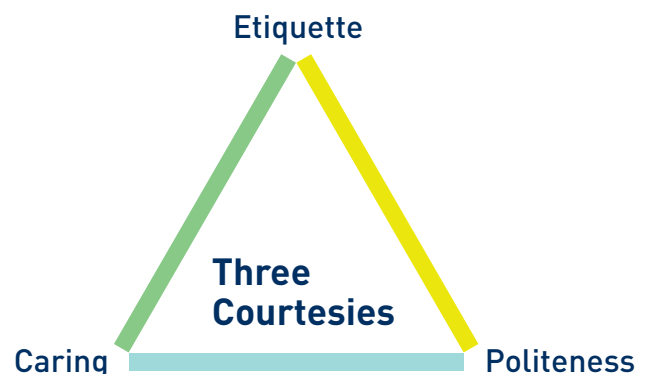


## Our Customers

“Customers Focus” is an innate philosophy at Towngas. Across Hong Kong and mainland China, we manage more than 23 million customer accounts, including businesses and residential households. The experience we give our customers is key to our success as a service provider and how we uphold our corporate responsibility pledges.

**Ran 79 new staff courtesy programme sessions in Hong Kong with 1,400 attendees**

**Engaged more than 40,000 employees through our Etiquette, Politeness, Caring Programme**



## Our Community

Towngas is committed to good corporate citizenship and carrying out our operations responsibly so we benefit our local communities and society at large. In 2016, our CSR events focused on social integration, diversity and inclusion and achieved a great success.

### Hong Kong

**Donated cooking appliances to individuals and families in need**

**Distributed around 640 kg of vegetables to 2,093 beneficiaries**

**Donated HK\$100,000 to SAHK via sports initiatives**

**Raised more than HK\$330,000 through our annual fundraising event with Mad Dog Café**

**Delivered out 330,000 rice dumplings and 100,000 mooncakes**

**Distributed 49,430 soup servings**

In 2016, 830 people joined the Towngas Volunteer Service Team to undertake community service activities in the city. This team was established in 1999 and, to date, a total of 697,594 volunteering hours have been logged.



Games of Friendship



Rice Dumplings and Mooncakes for the Community

### Mainland China

**Donated RMB200,000 to a school in Shandong province**

**Handed out 46,000 rice dumplings**

**Approximately 90% of our city-gas and water JVs have their own volunteer service teams with 93,700 volunteering hours logged**



Gentle Breeze Movement

## Achievements and Targets



### Environment

Achievements in 2016	Targets for 2017	Medium-term Targets (Two to Three Years)
<b>Green Certification</b>		
<ul style="list-style-type: none"> <li>Achieved a Wastewi\$e Certificate for the 15th consecutive cycle</li> <li>Recognised as "Finalist" at the Green Building Award 2016</li> </ul>	<ul style="list-style-type: none"> <li>To achieve a Wastewi\$e Certificate for the 16th consecutive cycle</li> <li>To explore and apply for other global and local environmental certifications and awards</li> </ul>	<ul style="list-style-type: none"> <li>To prepare gap analysis of Building Environmental Assessment Method (BEAM) Plus new version and Towngas headquarters</li> </ul>
<b>Gas Production Plant Modifications</b>		
<ul style="list-style-type: none"> <li>Completed materials procurement of the second rainwater collection system. The system will be substantially completed in the first quarter in 2017</li> </ul>	<ul style="list-style-type: none"> <li>To recirculate water used for warming ammonia drums and transfer blow-down water from air compressor station cooling towers to the make-up water for the Phase 2 cooling tower. These projects aim to save 1,500 m<sup>3</sup> of water per year</li> </ul>	<ul style="list-style-type: none"> <li>To convert the Phase 1 ions-exchange type water treatment plant to a Reverse Osmosis plant in order to reduce effluent generation and chemical usage</li> </ul>
<b>Waste Management</b>		
<ul style="list-style-type: none"> <li>Completed a study on the carbon footprint of different hand-drying methods</li> </ul>	<ul style="list-style-type: none"> <li>To replace existing hand dryers with more energy efficient models to reduce paper towel usage and save energy</li> </ul>	<ul style="list-style-type: none"> <li>To implement measures to enhance waste reduction and recycling at headquarters</li> </ul>
<b>Climate Change Adaption</b>		
<ul style="list-style-type: none"> <li>Reviewed the findings from the climate change risk assessment and implemented adaption measures</li> </ul>	<ul style="list-style-type: none"> <li>To extend the climate change risk assessment to our operations in mainland China and to conduct workshops about climate change for our projects in different regions</li> </ul>	<ul style="list-style-type: none"> <li>To monitor continuously the progress of the adaptation measures across different departments</li> </ul>

Achievements in 2016	Targets for 2017	Medium-term Targets (Two to Three Years)
<b>Carbon and Environment, Social and Governance (ESG) Data Management</b>		
<ul style="list-style-type: none"> <li>Completed the seventh mainland carbon reduction project competition. The scope of the competition was extended to cover projects in Hong Kong</li> <li>Launched a corporate ESG data management system for operations in Hong Kong</li> <li>Enhanced the collection of environmental key performance indicators for operations in mainland China</li> </ul>	<ul style="list-style-type: none"> <li>To organise the eighth carbon reduction project competition</li> <li>To develop a corporate ESG data management system for operations in mainland China</li> </ul>	<ul style="list-style-type: none"> <li>To upgrade our corporate ESG data management system to cater for the increased demand for ESG data and information disclosure</li> <li>To identify and explore new initiatives relating to emissions reduction and resource conservation</li> <li>To study the latest development of carbon reduction policies in Hong Kong and mainland China</li> <li>To explore ways to improve transparency about carbon reporting</li> </ul>
<b>Other Environmental Initiatives</b>		
<ul style="list-style-type: none"> <li>Carried out rooftop organic farming at headquarters</li> <li>Adjusted the chilled water supply temperature to improve energy saving at headquarters</li> <li>Replaced lighting in lift lobbies, pantries and warehouses with LED lights at headquarters</li> <li>Completed a feasibility study on lift system modernisation at headquarters</li> </ul>	<ul style="list-style-type: none"> <li>To provide green and healthy cooking tips</li> <li>To provide environmental seminars and workshops for employees and contractors</li> <li>To explore new partnership programmes with green groups</li> </ul>	<ul style="list-style-type: none"> <li>To study and develop environmental best-practice guidelines for the Towngas cooking centre, restaurant and gas refilling stations</li> <li>To study the feasibility of increasing the greening of off-take stations and gas production plants</li> <li>To improve the energy efficiency of the lift system at headquarters</li> <li>To carry out lift modernisation of the freight lift system</li> </ul>



## Achievements and Targets



### Safety

Achievements in 2016	Targets for 2017	Medium-term Targets (Two to Three Years)
<b>Safety and Health Training and Promotion</b>		
<ul style="list-style-type: none"> <li>Held the highly successful 2016 HSE Month and Stay Healthy promotion programme to enhance occupational safety and health, fire safety and environmental protection awareness for colleagues and contractors</li> <li>Organised a number of process safety training courses for ECO mainland employees</li> <li>Organised several HSE workshops to enhance mainland employees' safety awareness further, attracting 450 attendees</li> <li>Worked with the Hong Kong Fire Services Department to deliver a five-day practical firefighting training course for 21 safety and risk management staff, predominantly from our mainland joint ventures</li> </ul>	<ul style="list-style-type: none"> <li>To organise quarterly occupational health and safety promotional activities to enhance safety awareness</li> </ul>	<ul style="list-style-type: none"> <li>To develop key performance indicators for occupational health and safety</li> </ul>
<b>Safety Audit</b>		
<ul style="list-style-type: none"> <li>Conducted safety audits at 11 ECO mainland gas refilling stations, yielding satisfactory results</li> <li>Conducted the third scored ECO mainland chemical plant safety audit, which gave good results</li> <li>Established process safety KPIs for ECO mainland chemical plants. KPI monitoring made good progress</li> </ul>	<ul style="list-style-type: none"> <li>To conduct safety inspections at no less than 20 ECO mainland gas refilling stations</li> <li>To review the safety audit scheme for ECO mainland chemical plants and launch a post-audit enhancement programme</li> </ul>	<ul style="list-style-type: none"> <li>To promote further safety awareness and culture among mainland employees through education, training and experience-sharing visits</li> <li>To enhance our ECO mainland chemical plants' safety performance by implementing an effective process safety management system and monitoring process safety KPIs</li> </ul>
<b>Safety Procedures and Guidelines</b>		
<ul style="list-style-type: none"> <li>Carried out the Corporate Emergency Table-top Exercise for TGT to improve our response to emergencies</li> </ul>	<ul style="list-style-type: none"> <li>To conduct internal safety audits for TGT and improve performance further</li> </ul>	<ul style="list-style-type: none"> <li>To study the transfer from OHSAS 18001 to ISO 45001 standard</li> <li>For all managerial staff in our mainland companies' risk management departments to earn the Safety Engineer certificate</li> </ul>

## Achievements and Targets



### Social

Achievements in 2016	Targets for 2017	Medium-term Targets (Two to Three Years)
<b>Employees</b>		
<b>Career Development</b>		
<ul style="list-style-type: none"> <li>Continued to strengthen career path and development for employees with high potential at different levels in Hong Kong and China. This included the successful completion of TLC+, a two-year programme for high-potential middle managers. Expanded recruitment channels, including NGOs and our disabled workforce, as well as enhanced employer branding by participating in various media interviews and awards</li> </ul>	<ul style="list-style-type: none"> <li>To continue strengthening initiatives conducive to talent attraction, retention and engagement</li> </ul>	<ul style="list-style-type: none"> <li>To develop a competent workforce with the right mindset to manage the changes and transformation of the businesses and the Group</li> </ul>
<b>Knowledge Management</b>		
<ul style="list-style-type: none"> <li>Held sessions on gas safety, customer service, operational excellence, warehouse management and quality improvement to enhance the quality of work and standardise processes. They were conducted in the corporate office for JVs from the mainland. Also held regular meetings, collaborative projects, exchanges and mobility programmes among cross-location corporate offices and business units to share knowledge and best practice</li> </ul>		
<b>Learning and Development (L&amp;D)</b>		
<ul style="list-style-type: none"> <li>Offered the 3-Courtesy Training Series in Hong Kong and mainland China to equip our frontline staff with the skills and strategies necessary to deal with customer situations positively</li> <li>Offered a series of programmes focusing on change and innovation in different regional hubs in Hong Kong and mainland China to enhance the multi-perspective and strategic-thinking capabilities of our employees at all levels</li> <li>Ran a series of workshops focusing on driving change, igniting team innovation and enhancing customer service in different regional hubs including Qingdao, Jinan, Suzhou and Shenzhen in mainland China</li> <li>Adopted a real-time online discussion forum, instant polling during workshops, e-learning course materials, post-course assessments and online evaluation to make the overall learning process more effective and dynamic</li> </ul>	<ul style="list-style-type: none"> <li>To provide learning and development activities which reinforce change awareness and the mindset to prepare for the transformation and re-engineering of our business process</li> </ul>	

Achievements in 2016	Targets for 2017	Medium-term Targets (Two to Three Years)
<b>Talent Development</b>		
<ul style="list-style-type: none"> <li>Recruited 10 graduates from Hong Kong and overseas, and 16 graduates from mainland China into our Towngas Group Graduate Trainee Programme to cope with business development</li> <li>Held talent review discussions across business units and functions. We identified high-potential future leaders to enrich the management succession pipeline. We also put in place career development action plans supported by learning and development programmes</li> <li>Arranged company visits to different JVs and external companies in Hong Kong and mainland China to enable our middle-level managers to gain a comprehensive view of Towngas's businesses and learn innovative practices from other companies</li> </ul>	<ul style="list-style-type: none"> <li>To continue launching the high-potential talents programme to prepare young managers for future leadership roles for the purpose of strengthening our talent pipeline and for the Company's talent succession planning</li> </ul>	<ul style="list-style-type: none"> <li>To strengthen our employer brand further and to become the employer of choice for new talent who wish to join our diversified business portfolio</li> </ul>
<b>Creating an Inclusive Workplace</b>		
<ul style="list-style-type: none"> <li>Improved barrier-free facilities in different public areas. Conducted workshops, sign language classes and activities to foster communications with disabled people and promote an inclusive culture</li> </ul>	<ul style="list-style-type: none"> <li>To continue communication programme to foster inclusive culture</li> </ul>	
<b>The Community</b>		
<b>Community Projects</b>		
<ul style="list-style-type: none"> <li>Distributed a grand total of 330,000 rice dumplings, 100,000 mooncakes and 49,430 servings of hot soup</li> <li>Held our first Social Harmony Cooking Contest in collaboration with The Hong Kong Society for the Deaf</li> <li>Continued the programme to donate gas appliances to the community</li> <li>Participated in the CARE programme and other events of the Community Chest to raise HK\$1.5 million</li> </ul>	<ul style="list-style-type: none"> <li>To continue installing toilet washlets in elderly care centres</li> <li>To maintain Towngas Concession Schemes to help those less fortunate</li> <li>To support fundraising programmes organised by The Community Chest</li> <li>To support or sponsor events held by major non-profit organisations</li> </ul>	<ul style="list-style-type: none"> <li>To work with non-profit organisations to identify impactful community programmes benefitting the society</li> </ul>
<b>Volunteer Programmes</b>		
<ul style="list-style-type: none"> <li>Organised a series of events with non-profit organisations for people with disabilities and ethnic minorities, aimed at promoting an inclusive culture</li> <li>Held the Reading x Experiential Learning Programme for a group of 50 primary school students</li> </ul>	<ul style="list-style-type: none"> <li>To collaborate with SAHK and other non-profit organisations over the long term</li> <li>To establish a child volunteer team to perform during variety shows for the elderly or needy</li> </ul>	<ul style="list-style-type: none"> <li>To develop new volunteer programmes for people with disabilities</li> <li>To explore community programmes for young people</li> </ul>

## KEY STATISTICS

### Economic Performance

	Unit	2016	2015	2014	2013	2012
<b>Operating</b>						
Customers (Hong Kong gas business)	Million	1.86	1.84	1.82	1.80	1.78
Customers (City-gas business)	Million	23.1	20.9	19.0	17.3	14.8
Customers (Water business)	Million	1.19	1.12	1.04	0.97	0.92
Town gas sales (Hong Kong)	Million MJ	28,814	28,404	28,835	28,556	28,360
Gas sales (mainland China)	Billion cubic metres	17.1	15.5	15.2	13.4	11.8
Water sales (mainland China)	Million tonnes	455	433	424	414	393
<b>Financial</b>						
Revenue	HK\$ million	28,557	29,591	31,615	28,246	24,923
Manpower costs	HK\$ million	2,955	2,844	2,706	2,282	2,013
Capital expenditure	HK\$ million	6,257	6,356	6,365	5,984	6,438
Taxation	HK\$ million	1,576	1,727	1,771	1,655	1,485
Dividends	HK\$ million	4,451	4,047	3,680	3,346	3,042
Profit attributable to shareholders	HK\$ million	7,341	7,302	7,109	6,854	7,712

### Hong Kong



### Safety Performance

	Unit	2016	2015	2014	2013	2012
<b>Inspection and Training</b>						
Trench inspections	Number (sites)	12,606	14,044	16,390	13,675	17,599
Regular safety inspections – home visits	Number	1,312,275	1,236,796	1,247,727	1,021,089	1,114,409
Community safety exhibitions	Number	12	13	12	12	12
Community safety talks	Number	10	14	10	5	6
In-house staff safety training	Hours	19,482	17,558	19,726	17,822	20,254
External staff safety training	Hours	4,612	4,991	6,385	6,181	6,720

	Unit	2016	2015	2014	2013	2012
<b>Occupational Safety and Health<sup>1</sup></b>						
Accidents – all industrial injuries	Number	13	19	14	15	10
Reportable accidents	Number	12	15	12	12	7
Accident frequency rate	Number of accidents per 100,000 man-hours	0.19	0.29	0.22	0.24	0.19
Occupational diseases rate	Number of incidents per 100,000 man-hours	0	0	0	N/A	N/A
Accident incidence rate	Number of reportable accidents per 1,000 employees	4.1	5.3	4.4	4.9	2.5
Traffic accident injury rate	Number of traffic accident injuries per 100 vehicles	3.36	1.68	1.68	1.47	3.74
Industrial injury man-days lost	Number of man-days	576	596	132	194	111
Fatal accidents	Number	0	0	0	1	0

## Employees

	Unit	2016	2015	2014	2013	2012
<b>Total Headcount</b>						
Hong Kong gas business	Number	2,019	1,999	1,972	1,966	1,943
<b>All Hong Kong staff<sup>2</sup></b>						
Full-Time	Number	2,392	2,380	2,331	2,310	2,266
Part-Time	Number	116	110	79	61	77
<b>By gender</b>						
Male	Number	1,887	1,882	1,847	1,825	1,800
Female	Number	505	498	484	485	466
Ratio of male to female – Senior management	Ratio	3.4	3.2	3.5	3.5	3.9
Ratio of male to female – Middle management	Ratio	3.2	3.3	3.6	3.7	3.4
Ratio of male to female – General staff	Ratio	4.3	4.3	4.0	3.9	4.3
<b>By age group</b>						
<26	Number	126	118	106	116	109
26-35	Number	372	385	388	364	330
36-45	Number	487	491	499	563	632
46-55	Number	909	940	947	915	876
>=56	Number	498	446	391	352	319
<b>By employee category</b>						
Senior management	Number	239	239	230	225	219
Middle management	Number	831	820	768	744	792
General staff	Number	1,322	1,321	1,333	1,341	1,255



	Unit	2016	2015	2014	2013	2012
<b>Turnover Rate</b>						
Average turnover of workforce (Hong Kong gas business)	%	5.8	4.8	6.4	5.1	4.6
Average turnover of workforce (all Hong Kong staff) <sup>2</sup>	%	6.7	5.8	7.5	6.0	4.9
<b>By gender</b>						
Male	%	6.0	4.9	6.6	4.6	4.0
Female	%	9.0	9.4	10.9	11.4	8.8
<b>By age group</b>						
<26	%	21.3	26.8	22.5	33.8	23.9
26-35	%	14.8	14.0	18.6	10.4	14.9
36-45	%	6.1	3.6	6.6	4.5	2.6
46-55	%	3.4	2.4	3.4	2.7	1.9
>=56	%	3.4	2.9	3.2	3.6	1.3
<b>New Recruitment</b>						
Total	Number	200	203	182	174	169
<b>By gender</b>						
Male	Number	144	145	140	111	113
Female	Number	56	58	42	63	56
<b>By age group</b>						
<26	Number	56	48	37	50	55
26-35	Number	71	64	73	70	63
36-45	Number	34	36	37	22	33
46-55	Number	22	21	25	26	16
>=56	Number	17	34	10	6	2
<b>Employee Performance and Career Reviews<sup>2</sup></b>						
Total	%	85.6	85.8	85.5	86.1	83.2
<b>By gender</b>						
Male	%	87.1	88.8	87.1	89.0	85.5
Female	%	79.8	74.5	79.8	75.3	74.2
<b>By employee category</b>						
Senior management	%	82.0	82.8	83.9	85.3	80.8
Middle management	%	92.4	90.1	91.8	93.4	86.7
General staff	%	81.9	83.6	82.2	82.2	81.4
<b>Training Hours (HSE training excluded)<sup>2</sup></b>						
Total	Hours	15,753	19,069	22,611	32,186	31,349
Average	Hours	6.6	8.0	9.7	13.9	13.8
Anti-corruption	Hours	200	300	155	128.75	93.75
<b>By gender (Average training hours and percentage of employees received training)</b>						
Male	Hours (%)	5.8 (43.3)	7.6 (40.3)	8.4 (65.7)	13.4 (66.0)	13.9 (92.8)
Female	Hours (%)	9.6 (70.3)	9.4 (44.6)	14.7 (67.9)	15.8 (63.1)	13.7 (94.3)
<b>By employee category (Average training hours and percentage of employees received training)</b>						
Senior management	Hours (%)	9.5 (73.2)	12.6 (75.1)	14.1 (87.5)	32.6 (96.4)	33.0 (97.7)
Middle management	Hours (%)	10.7 (63.4)	8.7 (53.7)	12.8 (67.6)	21.9 (75.4)	16.4 (94.2)
General staff	Hours (%)	3.5 (35.6)	6.8 (27.7)	7.1 (62.1)	6.4 (54.2)	8.9 (94.6)

## Environmental Performance

### Energy and resource consumption<sup>3</sup>

	Unit	2016	2015	2014	2013	2012
Towngas Headquarters						
Electricity	GJ	21,383	21,277	21,696	22,934	24,889
Town gas	GJ	2,217	1,477	1,353	1,586	4,135
Water <sup>4</sup>	Cubic metres	15,631	15,791	16,735	14,006	13,470
Gas Production Process (Heating fuel, electricity and water used)						
Electricity	GJ	150,251	145,797	141,937	132,257	131,568
Naphtha	GJ	616,538	598,935	602,016	785,476	715,625
Natural gas	GJ	5,069,673	4,934,059	4,973,358	4,862,842	4,708,134
Synthetic natural gas and landfill gas	GJ	481,963	550,926	527,790	519,401	681,392
Town gas	GJ	168,086	156,196	164,020	168,868	154,368
Diesel	GJ	1,365	1,452	1,458	1,304	1,498
Water <sup>4</sup>	Cubic metres	1,162,611	1,091,897	1,041,582	1,058,641	1,065,243
Vehicle fleet <sup>5</sup>						
Unleaded petrol	GJ	14,518	15,662	17,254	17,569	19,418
Diesel	GJ	10,172	9,420	8,144	7,003	5,718
Packaging Material Use						
Carton	Tonnes	822	866	824	798	N/A
Wood	Tonnes	29	25	24	23	N/A
Plastic	Tonnes	0.9	1.0	1.0	1.0	N/A

## Resource Conservation

	Unit	2016	2015	2014	2013	2012
Naphtha saved (Gas Production) <sup>6</sup>	GJ	449,349	519,160	492,844	477,459	639,480
Town gas saved (Gas Production) <sup>6</sup>	GJ	32,614	31,766	34,945	41,942	41,912
Effluent water saved (Gas Production) <sup>8</sup>	Cubic metres	118,187	112,159	121,504	127,379	114,113
Amount of raw water collected by the rainwater harvesting system (Tai Po Plant)	Cubic metres	4,125	3,663	N/A	N/A	N/A
Grid electricity saved through PV Panels	GJ	311	312	313	312	311
Electricity saved (Towngas Headquarters and Ma Tau Kok office) <sup>6</sup>	GJ	19,919	19,557	18,581	17,396	15,316

## Emissions

	Unit	2016	2015	2014	2013	2012
Carbon dioxide (CO <sub>2</sub> )	Daily average in metric tonnes (Metric tonnes per million MJ of town gas)	907 (11.55)	898 (11.82)	904 (11.70)	931 (12.09)	904 (11.92)
Nitrogen oxides (NO <sub>x</sub> )	Daily average in kg (Kg per million MJ of town gas)	314 (4.00)	292 (3.84)	310 (4.02)	353 (4.59)	318 (4.20)
Sulphur oxides (SO <sub>x</sub> )	Daily average in kg (Kg per million MJ of town gas)	1.4 (0.02)	1.3 (0.02)	1.4 (0.02)	1.2 (0.02)	1.5 (0.02)
Greenhouse gases (Production equipment) <sup>9</sup>	Tonnes CO <sub>2</sub> -e	359,300	357,845	358,582	365,981	360,634
CO <sub>2</sub> reduction equivalent to electricity saved (Towngas Headquarters and Ma Tau Kok office) <sup>7</sup>	Tonnes	3,873	3,803	3,613	3,376	2,981

## Effluent and Waste

	Unit	2016	2015	2014	2013	2012
Treated wastewater discharged to marine water bodies	Daily average in cubic metres	79	47	N/A	N/A	N/A
Wastewater discharged to sewage	Daily average in cubic metres	241	239	N/A	N/A	N/A
Total wastewater discharged	Daily average in cubic metres (Cubic metres per million MJ of town gas)	321 [4.10]	287 [3.77]	307 [3.97]	323 [4.20]	435 [5.74]
Non - hazardous waste landfilled <sup>10</sup>	Tonnes	150.4	123.6	129.5	126.7	N/A
Non - hazardous waste recycled <sup>11</sup>	Tonnes	125.7	210.0	N/A	N/A	N/A
<b>Hazardous waste<sup>12</sup></b>						
Chemical waste generated	Daily average in kg (Kg per million MJ of town gas)	167 [2.10]	49 [0.64]	83 [1.07]	150 [1.94]	93 [1.23]
Spent catalyst collected for metal recovery	Tonnes	18.5	11.7	23.6	39.7	35.3
Spent lube oil recycled	Tonnes	45.6	13.2	25.2	46.7	25.3
<b>Others</b>						
Metal chemical drums reused	Number	41	18	15	90	318
Plastic chemical drums reused	Number	1,021	1,927	1,030	914	969
Scrap metal recycled – old gas appliances	Tonnes	1,218	1,265	1,229	1,278	926
Scrap metal recycled – from construction and maintenance of plant and pipelines	Tonnes	34	77	23	28	35
PE pipe recycled	Tonnes	30.9	23.6	17.8	12.6	10.7
Gas appliances polyfoam packaging materials avoided	Tonnes	1.56	1.56	1.29	1.31	1.52

## Environmental Training

	Unit	2016	2015	2014	2013	2012
In-house staff environmental training	Hours	1,653	865	1,012	1,420	1,951
External staff environmental training	Hours	431	386	349	818	1,120

## Social Performance

### Customer Service

	Unit	2016	2015	2014	2013	2012
Customer compliments	Number	6,930	6,766	5,894	6,026	6,090
Customer complaints	Number	13	6	8	16	7

### Community Involvement

	Unit	2016	2015	2014	2013	2012
Employees participating in voluntary services	Number	830	859	994	918	1,079
Voluntary service hours (including employees and customers)	Hours	75,588	75,369	79,551	72,025	68,508
Charitable donations made by the Group	HK\$ million	7.1	7.1	34.2	58.6	7.9

#### Remarks:

- 1) Towngas's employees and the employees of its subsidiaries only.
- 2) A revised scope was adopted in 2016. The scope includes the hired employees of companies with business in Hong Kong (i.e. Towngas, Towngas Enterprise Limited, ECO Stations, TGT and U-Tech). The figures have been adjusted accordingly.
- 3) The following conversion factors are used to standardize the units to gigajoules (GJ): Town gas (0.048GJ/unit), electricity (0.0036GJ/kWh), petrol (0.033GJ/L), diesel (0.036GJ/L). For the conversion of naphtha and landfill gas to energy term, they are calculated by multiplying individual monthly fuel volumetric data by their corresponding monthly average calorific value.
- 4) All water is purchased and distributed by the HKSAR Water Supplies Department.
- 5) Tankers and ECO Aviation Fuel Services (EAFS) vehicles are excluded.
- 6) These figures are the savings achieved compared with the data of a reference year before implementing the respective environmental initiative.
- 7) The default value to account for the GHG Emission Factor of electricity sold to customers in Hong Kong is 0.7kg/kWh. Reference: Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings of Commercial, Residential or Institutional Purposes in Hong Kong (by EPD & EMSD).
- 8) The indicator 'Water saved' was replaced by 'Effluent water saved' in 2016. The figures have been adjusted accordingly.
- 9) The emission factors of greenhouse gas emissions due to electricity consumption are obtained from the sustainability reports of the two local electricity companies, which are released one year prior to our reporting year.
- 10) Non - hazardous waste landfilled refers to the refuse, wood pallets and construction waste collected from Towngas Headquarters and the Tai Po Plant.
- 11) Non-hazardous waste recycled refers to the plastics, papers, paper cartons and metals collected to recycling contractors. Apart from these waste categories, we also recycle other non-hazardous waste, such as used red packets and cartridges, on a regular basis.
- 12) All chemical waste handling procedures comply with the [Waste Disposal Ordinance \(Cap. 354\)](#). We also collect other hazardous waste, such as rechargeable batteries, fluorescent tubes and obsolete electronic products to licensed recyclers on a regular basis.

For the key statistics on the operations outside Hong Kong, please refer to the full version of our Sustainability Report 2016.





The Hong Kong and China Gas Company Limited  
香港中華煤氣有限公司



## YOUR FEEDBACK

If you have any questions or feedback, we would very much like to hear from you.  
Please fill the [online questionnaire](#) or contact us:

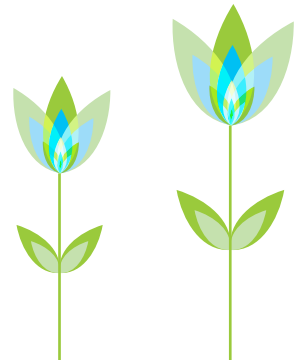
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