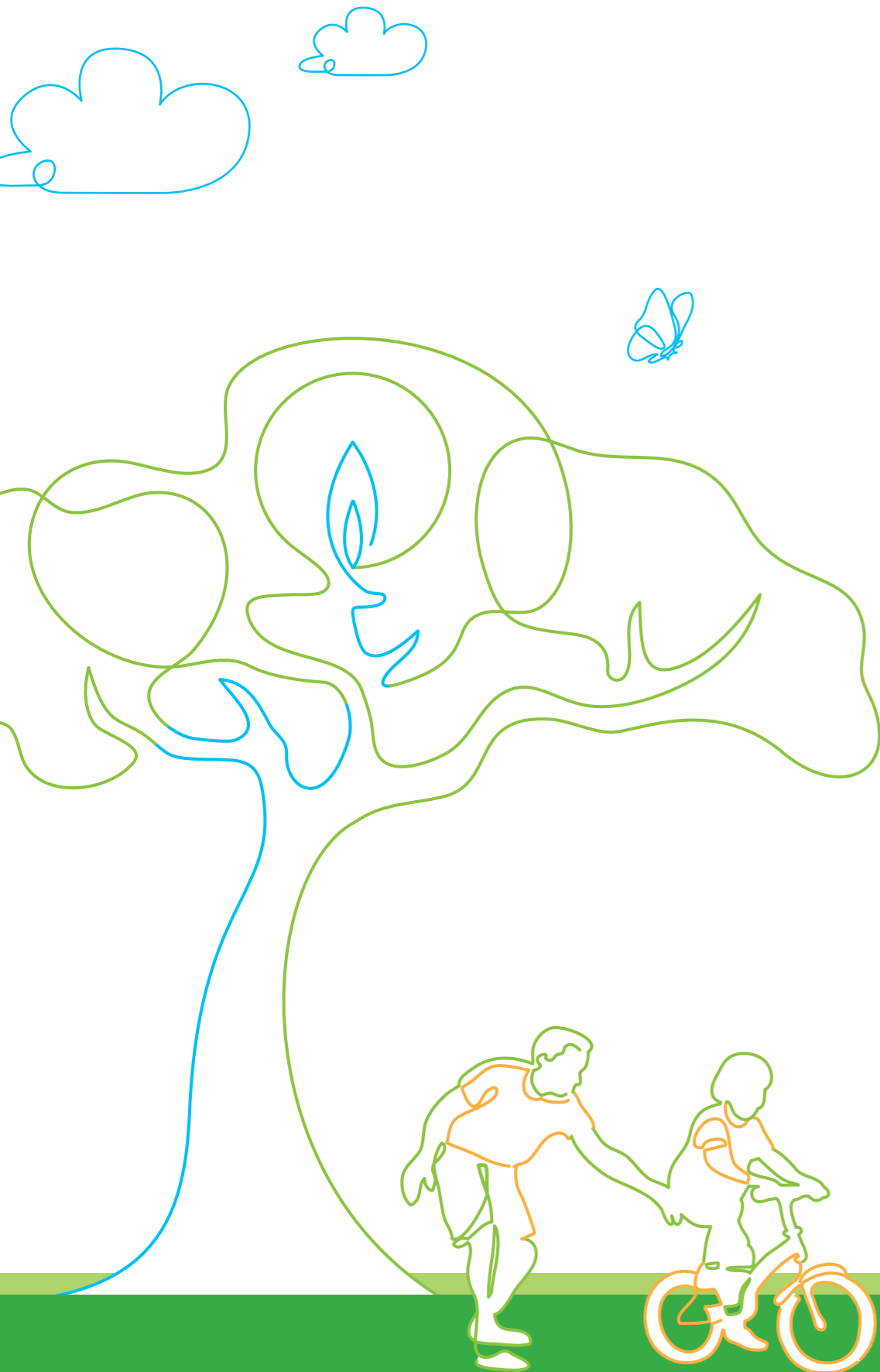




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**Environmental,  
Social and Governance  
Report  
2019**





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## 01 MANAGING DIRECTOR'S MESSAGE



We believe that moving towards a sustainable future is good not only for the environment and society but also for creating economic value.

Alfred Chan Wing-kin  
Managing Director

The year 2019 was one of the most difficult periods in our recent history, particularly in Hong Kong where we experienced one of the warmest winters on record and contended with the social disturbances that erupted in June. Both had the effect of lowering gas consumption and reducing our revenues.

Despite these challenges, we continued to maintain our commitment to environmental, social and governance (ESG) development in terms of environmental performance, corporate governance, social good, community works, and equal opportunity. To reinforce this commitment, in 2019 we developed an ESG Framework that focuses on five key areas: Creating Business Opportunities, Ensuring Health and Safety, Protecting the Environment, Contributing to Stakeholders, and Strengthening Corporate Governance.

In the year ahead, we will remain focused on these five key areas and will set targets so that we can monitor our performance and achieve long-term sustainability. We will also continue to focus on innovation in order to drive our ESG performance and the development of our business.



We will also continue to focus on innovation in order to drive our ESG performance and the development of our business.

### Building a Culture of Innovation

At Towngas, we understand that a culture of innovation is critical for the future of our Company. Hence, we have established various platforms and initiatives to encourage creativity among our employees, instil an innovative mindset and promote the growth of our business.

One of these initiatives, the Innovation Funding programme, was established to encourage creative solutions by our staff. Following its successful launch in Hong Kong in 2016, the fund was extended to mainland China in 2019.

The Water Heater Hydropower Generator Module developed by our staff is an excellent example of how this fund promotes creativity at Towngas. By generating electricity from the normal water flow in a water heater, the generator module eliminates the need for batteries in flame ignition. In recognition of the ingenuity that went into this first-of-its-kind invention, it was honoured in 2019 with the Innovation and Creativity Grand Award at the Hong Kong Awards for Industries.

I look forward to seeing even more innovative initiatives with the support of the fund and in the spirit of our philosophy of "Growth = innovation x implementation".

## Making the Transition Towards Sustainable Energy

As an energy supplier that enjoys great esteem for taking responsibility for the wellbeing of mankind, we are helping to shape a future in which a greater portion of energy demands are met with sustainable sources, including renewable energy.

A key element in our approach to a low-carbon future is the concept of a recycling economy, in which waste is considered to be a resource that can be utilised in creating new value. This has been a major feature of our business for the past 20 years, as demonstrated by initiatives such as our landfill gas utilisation projects in Hong Kong and our recent project in Suzhou to convert food waste into biogas.

We believe that moving towards a sustainable future is good not only for the environment and society but also for creating economic value. As we continue to develop even more innovative energy solutions, we are confident that we can be a leader in the global energy transition towards a sustainable future.

## How We Address Climate Change

In 2019, Hong Kong's average temperature was the highest in recorded history, confirming that climate change is an issue of overriding concern.

To address this challenge, we have begun to look into the **Recommendations of the Task Force on Climate-related Financial Disclosures** (TCFD). We have also undertaken a study on transition risks and opportunities across our portfolio under various climate change scenarios, with the aim of making Towngas' assets and operations more resilient in the face of climate change. For more details, please refer to [Climate-related Financial Disclosure](#).

At the same time, we believe that climate change presents tremendous opportunities for business growth. A case in point is our hydro-treated vegetable oil (HVO) plant in Zhangjiagang city, Jiangsu province. In 2019, this plant produced over 24,000 tonnes of HVO for sale to customers in Europe who wish to achieve reductions in carbon emissions. During the year, we began constructing the second phase of the plant to meet the anticipated growing demand.

## Safety — The Cornerstone of Our Business

Towngas has a strong record of safety and reliability. Yet we are continuously striving for higher targets.

To further improve our safety performance, in early 2019 we attained ISO 45001 certification, the international occupational safety and health standard for reducing occupational injuries and diseases. Following the certification of our Hong Kong gas-related operations, we started helping our subsidiaries and joint ventures in mainland China to bring their occupational safety and health management systems up to the ISO 45001 standard.

In addition to ISO 45001 certification, we have been introducing innovative solutions that enhance safety performance. One example is the development of the Riser Jacketing Robot, which helps to eliminate gas supply interruptions while minimising the risks associated with repairing gas pipes at height.

## Building a Workforce for the Future

In Hong Kong, we have been dealing with the challenge of replacing our ageing workforce with younger people who might not have previously considered a career in the gas industry.

To attract new talent to Towngas, we have been making a concerted effort to enhance the image of a career in the gas industry as well as our own brand. We also started to engage the younger generation by launching the Career in a Nutshell programme for secondary school students, as well as offering internship opportunities in Hong Kong and in mainland China.

Recognising that our existing frontline technicians are critical to our success, we have been monitoring their needs more closely and working with them to advance their careers with the Company through training programmes and salary reviews.

Additionally, in 2019 we promoted integrity through a variety of activities, including company-wide training to strengthen our culture of "courtesy, ingenuity and integrity" among our workforce. We believe this is essential for our long-term ESG development, as it is only by operating as a responsible business that we can earn the trust of our stakeholders.

## The Year Ahead

During the year, the challenges associated with climate change came into even sharper focus, not only in Hong Kong and mainland China but in many other areas of the world as well. Our stakeholders have been expressing greater concerns about the role that we at Towngas are playing in mitigating the impact of climate change. We are committed to advancing the global transition towards sustainable energy through developing new forms of clean energy and other innovative solutions that help to reduce emissions or replace conventional energy sources. We are also making our own operations more efficient, as well as more resilient against extreme weather phenomena associated with climate change.

In 2019, we formulated strategies and actions that are in line with our promise to stakeholders to become the greenest Hong Kong-based company. We have kickstarted several environmentally friendly initiatives this year and are well poised for further actions in 2020. I look forward to working with our dedicated staff, partners and other stakeholders in the year ahead to make the transition into a new era of clean energy and to achieve our aspirations for a sustainable future.

**Alfred Chan Wing-kin**  
Managing Director



02



# 2019 Highlights

Established **Environmental, Social and Governance Framework** with five key areas.

## Creating Business Opportunities

## Ensuring Health and Safety



### Financial Performance

- Revenue **HK\$40,628 million**
- **266** projects outside of Hong Kong
- Customer accounts
  - **1.93 million** for town gas business (Hong Kong)
  - **29.78 million** for city-gas business (mainland China)
  - **2.38 million** for water business (mainland China)



### Occupational Safety and Health

- Achieved **ISO 45001** certification for Towngas
- Accident frequency rate (Hong Kong)
  - Employees: **0.18**
  - Contractors: **0.14** accidents per 100,000 man-hours
- **Towngas Smart OSH Warehouse** to enhance OSH levels

### Customers and Public

- Customer-related emergency reports (Hong Kong)
  - ↓ **37%** in last five years
- Gas incidents reported by the public per 10 km of gas pipes (Hong Kong)
  - ↓ **24%** in last five years
- Serious gas-related accidents (mainland China)
  - ↓ **43%** in last five years
- Process safety management audits conducted at **all** of ECO's<sup>2</sup> operating chemical plants in the mainland

<sup>1</sup> Hong Kong Quality Assurance Agency  
<sup>2</sup> ECO Environmental Investments Limited, a wholly-owned subsidiary of Towngas  
<sup>3</sup> Task Force on Climate-related Financial Disclosures

### Green Finance

- Obtained **post-issuance stage certification** under HKQAA<sup>1</sup> Green Finance Certification Scheme



### Sustainable Business

- **1<sup>st</sup> food waste processing and utilisation project** at Suzhou Industrial Park in trial production
- **>24,000 tonnes** of HVO sold to Europe

## Protecting the Environment



### Climate Change

- Carbon intensity of gas production (Hong Kong)
  - **0.597 kg** CO<sub>2</sub>e/unit of town gas
  - **↓22%** compared with 2005 baseline
- Started to disclose **climate-related information** as per TCFD<sup>3</sup> recommendations

### Resources

- **>1,600 tonnes** of metal recovered through the Used Gas Appliance Recycling Programme
- Upcycled scrap PE pipes through the **Waste-to-Treasure Solar Powered Hydroponics System**

## Strengthening Corporate Governance



### Risk Management

- Stepped up monitoring of **emerging risks** with significant impact and systematically mitigated relevant risks to an acceptable level

### Business Ethics

- Launched a company-wide **anti-fraud campaign** to promote anti-corruption and integrity

## Contributing to Stakeholders



### Employees

- Number of employees
  - **2,474** (Hong Kong)
  - **50,352** (outside Hong Kong)
- Average training hours per employee **22.4** hours (Hong Kong)
- Completed **technicians' remuneration packages and promotion path review**

### Customers

- **99.99%** supply reliability rate (Hong Kong)
- Implemented a mandatory **Privacy Impact Assessment** to identify any potential risks before launching new projects or processes
- **5,924** customer compliments received (Hong Kong)



### Community

- Volunteer service
  - **87,557** hours (Hong Kong employees and customers)
  - **264,440** hours (mainland utility employees)
- Extended the **Green Flame Project** to improve the living environment of underprivileged families

### Suppliers

- **1<sup>st</sup> public utility** in Hong Kong to complete ISO 20400 Sustainable Procurement Assessment

## Major Corporate Awards and Recognitions in 2019

A comprehensive list of our major awards in 2019 is available at our [corporate website](#).

### Business and Service

#### Hong Kong Awards for Industries: Innovation and Creativity Grand Award

by The Hong Kong General Chamber of Commerce



#### Hong Kong Power Brand Market Leadership 2018/19

by Hong Kong Institute of Marketing

#### Q-Mark Elite Brand Award

by Federation of Hong Kong Industries

#### Squarefoot Best of the Best Awards 2019

- Best Kitchen Appliance
- Best Kitchen Design

by REA Group

#### Hong Kong Professional Building Inspection Academy Awards 2018

- Quality Sub-Contractor

by Hong Kong Professional Building Inspection Academy

#### Your Choice @ Focus – Hong Kong White Collar's Most Favourite "Kitchen Appliance" Brand Award 2019

by Focus Media Hong Kong

#### 2019 CAHK Star Awards

- Innovative Data Centre – Gold

by Communications Association of Hong Kong

#### China IDC Industry Best Third-party Data Centre Award 2019

by The 14th China IDC Industry Annual Ceremony



#### CIC Construction Innovation Award 2019

- Construction Sustainability 1st Prize

by Construction Industry Council

#### Sing Tao Service Awards 2018 – After Sales Services Award

by Sing Tao Daily

#### Hong Kong Service Awards 2019 – Public Utilities

by East Week

### Environmental

#### BOCHK Corporate Environmental Leadership Awards 2018

- Manufacturing sector – Gold Award
- Guangdong-Hong Kong-Macao Bay Area Environmental Leadership Recognition Award

by Federation of Hong Kong Industries and Bank of China (Hong Kong)

#### 2018 Hong Kong Awards for Environmental Excellence

- Restaurants – Gold Award
- Public and Community Services – Silver Award

by Environmental Campaign Committee

#### 2018 Hong Kong Green Innovations Awards

- Bronze Award

by Environmental Campaign Committee

#### The 5th Year Best Project Award

by Institution of Mechanical Engineers (Hong Kong Branch)

#### HSBC Living Business Sustainable Supply Chain Leader

by Business Environment Council



### Governance

#### Constituent Companies of the Hang Seng Corporate Sustainability Index Series (Towngas and Towngas China)

by Hang Seng Indexes Company Limited

#### Best Corporate Governance Awards 2019

- Sustainability and Social Responsibility Reporting Awards

by The Hong Kong Institute of Certified Public Accountants

#### Best Corporate Governance Awards 最佳企業管治大獎 2019



### Health and Safety

#### The 14th Occupational Health Award

- Joyful@Healthy Workplace Best Practices Award – Grand Award and Innovative Measures Award
- Hearing Conservation Best Practices Award – Excellence Award and Innovative Improvement Measures Award

by Occupational Safety and Health Council



#### 2019 Junzi Corporation Award

- Junzi Corporation Award
- Junzi Corporation Exemplary Award
- Junzi Corporation Popular Brand Award

by The Hang Seng University of Hong Kong

#### IFAPC Outstanding Listed Company Award 2019

by The Hong Kong Institute of Financial Analysts and Professional Commentators Limited

#### Hong Kong Sustainability Award 2018/19

by Hong Kong Management Association

#### The Listed Enterprise Excellence Awards 2019

- Corporate Governance

by Capital Weekly

### Social

#### Global 2000 – World's Best Employers 2019

by Forbes



#### 2019 Randstad Employer Brand Award

- Hong Kong's Most Attractive Employer – First Runner-up

by Randstad

#### The 4th Hong Kong Public Relations Awards

- Corporate Social Responsibility Gold Award

by The Hong Kong Public Relations Professionals' Association

#### Jockey Club Age-friendly City Partnership Scheme

- Age-friendly Innovation Award

by The Hong Kong Jockey Club

#### Construction Industry Volunteer Award

- Most Supportive Organisation

by Construction Industry Council

#### Corporate Social Responsibility Award 2019

by Capital Magazine and Capital Weekly

#### Employer of Choice Award 2019

- Employer of Choice Award
- Leadership Development Award

by Job Market Publishing Limited

#### Champion of Highest Service Hour Award 2018

- Private Organisations – Best Customer Participation

by Social Welfare Department

03



# OUR ESG APPROACH

At The Hong Kong and China Gas Company Limited (Towngas), we are committed to environmental, social and governance (ESG) development in every aspect of our business as we work towards creating a sustainable world. This is reflected in our Vision and Mission, which guide us in our evolving ESG strategy for the benefit of future generations.

To articulate our ambition of creating a sustainable future, in 2019 we developed an ESG Framework that is aligned with our Vision, Mission, Commitment and Responsibility. This framework was subsequently endorsed by our ESG Committee\*.



## Vision

To be Asia's leading clean energy supplier and quality service provider, with a focus on innovation and environmental friendliness.



## Mission

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



## Commitment

To conduct ourselves in an ethical and transparent manner so that all stakeholders know we are accountable to them for the decisions and actions we take to become a sustainable business.



## Responsibility

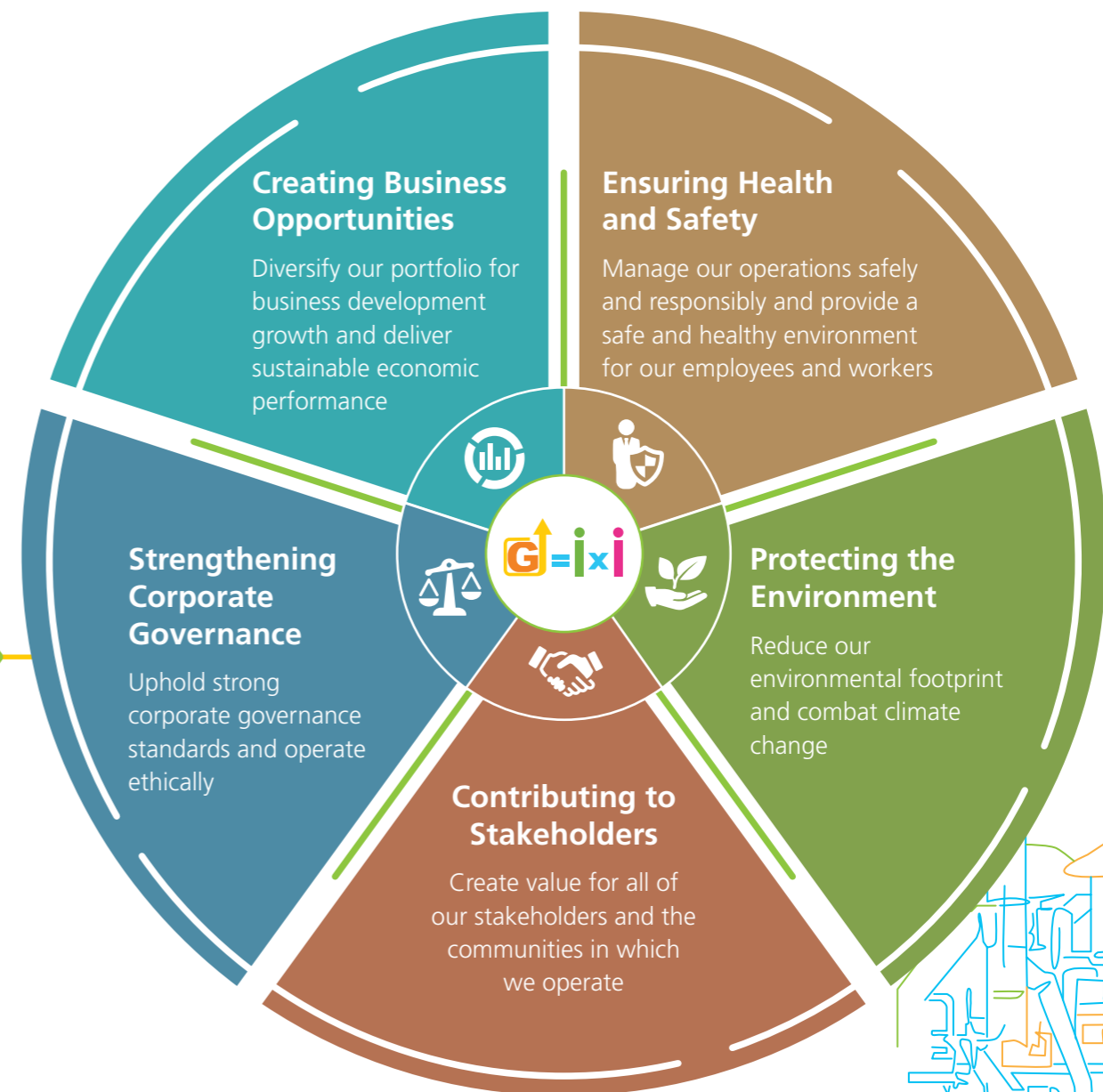
To recognise the importance of our employees and their contribution to the success of our business, and our responsibility to keep them safe, informed, engaged and equipped to undertake our mission.

# ESG Framework

The ESG Framework we have developed takes into consideration both our positive and negative impact on stakeholders. It articulates five key areas for ESG development: Creating Business Opportunities; Ensuring Health and Safety; Protecting the Environment; Contributing to Stakeholders; and Strengthening Corporate Governance.

Our framework centres on our philosophy of "Growth = innovation x implementation". Under this philosophy, we invest in innovation and creativity through research and development while also encouraging our employees to propose ideas.

We will continue to focus on these five key areas in order to create long-term value.



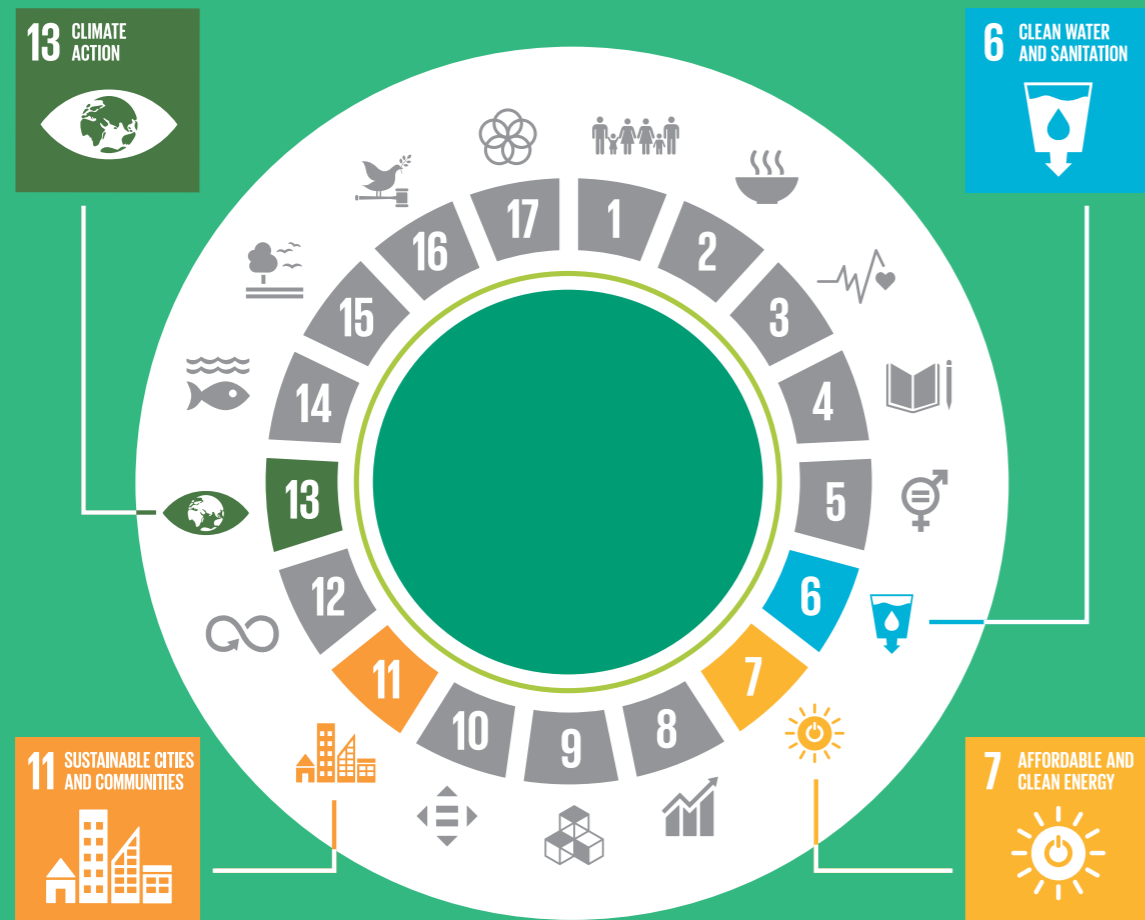
\* Environmental, Social and Governance Committee was formerly named as Sustainability Committee

## Supporting the Sustainable Development Goals

As a responsible energy supplier, we support the United Nations Sustainable Development Goals (SDGs) as part of our efforts to overcome the global challenges we face and achieve a better and more sustainable future.

When mapping the SDGs to our operations and value chain, we prioritised the four goals that would make the greatest contribution, while also addressing any negative impact. In particular, we explored our risks to people and the environment and examined which of our products, services or investments would contribute to the SDGs. We also reviewed the impacts and contributions of all SDGs for our company at each stage of our value chain.

### Our Impacts and Actions Taken on SDGs



6 CLEAN WATER AND SANITATION

### Ensure availability and sustainable management of water and sanitation for all

Potential Impacts	Actions Taken/Achievements
<ul style="list-style-type: none"> <li><span style="color: #0072bc;">+</span> Deliver a safe and reliable supply of drinking water to our customers</li> <li><span style="color: #0072bc;">-</span> Production processes consume/generate significant amounts of water/wastewater</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: #0072bc;">+</span> <b>2.38 million</b> customer accounts with drinking water up to national standard</li> <li><span style="color: #0072bc;">+</span> <b>3<sup>rd</sup></b> reverse osmosis waste water treatment facility to be installed at Tai Po Gas Production Plant</li> </ul>

7 AFFORDABLE AND CLEAN ENERGY

### Ensure access to affordable, reliable, sustainable and modern energy for all

Potential Impacts	Actions Taken/Achievements
<ul style="list-style-type: none"> <li><span style="color: #f4a460;">+</span> Expedite our coverage of gas supply and promote fuel conversion to gas</li> <li><span style="color: #f4a460;">+</span> Develop a clean energy business</li> <li><span style="color: #f4a460;">-</span> Fossil fuels as the major raw materials of town gas production</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: #f4a460;">+</span> <b>1.93 million</b> town gas customer accounts in Hong Kong</li> <li><span style="color: #f4a460;">+</span> <b>29.78 million</b> city-gas customer accounts in mainland China</li> <li><span style="color: #f4a460;">+</span> Secured <b>8</b> new distributed energy system projects</li> <li><span style="color: #f4a460;">+</span> Landfill gas accounts for approximately 1% of fuel mix for town gas production in Hong Kong</li> <li><span style="color: #f4a460;">+</span> <b>2</b> research and development centres in Shanghai and Jiangsu to develop clean energy technologies</li> </ul>

11 SUSTAINABLE CITIES AND COMMUNITIES

### Make cities and human settlements inclusive, safe, resilient and sustainable

Potential Impacts	Actions Taken/Achievements
<ul style="list-style-type: none"> <li><span style="color: #f4a460;">+</span> Provide a safe and reliable supply of energy</li> <li><span style="color: #f4a460;">+</span> Promote recycling and reuse within our company's businesses and to customers</li> <li><span style="color: #f4a460;">-</span> Produce both hazardous and non-hazardous waste during operation and along the value chain</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: #f4a460;">+</span> Town gas supply reliability <b>99.99%</b></li> <li><span style="color: #f4a460;">+</span> <b>43% reduction</b> of serious gas-related accidents (mainland China) in last five years</li> <li><span style="color: #f4a460;">+</span> <b>&gt;1,600 tonnes</b> of metal recovered through Used Gas Appliance Recycling Programme</li> <li><span style="color: #f4a460;">+</span> <b>1<sup>st</sup></b> food waste processing and utilisation project at Suzhou Industrial Park in trial production</li> <li><span style="color: #f4a460;">+</span> ECO's pilot biomass project in Tangshan city, Hebei province to convert agriculture waste into furfural and paper pulp scheduled for trial production in 2020</li> </ul>

13 CLIMATE ACTION

### Take urgent action to combat climate change and its impacts

Potential Impacts	Actions Taken/Achievements
<ul style="list-style-type: none"> <li><span style="color: white;">+</span> Promote a low-carbon lifestyle along our value chain</li> <li><span style="color: white;">-</span> Physical and transition risks that affect our operations and businesses</li> <li><span style="color: white;">-</span> Generate greenhouse gas emissions that accelerate climate change</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: white;">+</span> Climate Change Risk Assessment extended from Hong Kong to mainland China</li> <li><span style="color: white;">+</span> Kickstarted a study on the implementation of <b>Task Force on Climate-related Financial Disclosures</b> (TCFD) recommendations</li> <li><span style="color: white;">+</span> <b>22% reduction</b> in carbon intensity of gas production compared with the 2005 baseline</li> <li><span style="color: white;">+</span> Partnerships with green groups to promote environmental protection and sustainable development</li> </ul>



## Innovation from the Ground Up

In keeping with our culture of innovation at Towngas, we have established platforms and initiatives to encourage creativity among our employees, instil an innovative mindset and promote business growth.

In 2016, we launched an Innovation Funding programme in Hong Kong. The aim of the fund is to inspire our staff to go beyond their comfort zone and submit creative proposals for business expansion applicable to any part of the Company. The programme was extended to mainland China in 2019.

In 2019, we were honoured to have one of our Innovation Funding projects, the Water Heater Hydropower Generator Module, win the Hong Kong Awards for Industries: Innovation and Creativity Grand Award issued by Hong Kong General Chamber of Commerce.

Information about emerging technologies at Towngas and in the industry is also shared through our publication *Innovation Headlines* as well as through seminars, company tours and social platforms such as Facebook, Yammer and WeChat.

### ■ Innovation Platforms at Towngas

Dream Zone



#### Dream Zone • 2013

Dream Zone is a collaborative, relaxed venue conducive to creative thinking. It provides information on various innovation tools with space reserved for brainstorming.

#### Towngas Hall of Innovation • 2015

This showcase of original concepts developed by our colleagues features innovations that have enhanced the Company's gas service and efficiency.

#### G = i x i Lab • 2016

The G = i x i Lab, equipped with a three-dimensional (3D) printer and scanner, is a place where staff can turn creative ideas into practical applications.

Towngas Hall of Innovation



G = i x i Lab



### VR Training

Electrofusion welding to join polyethylene (PE) pipes is complicated and requires a very high level of craftsmanship to prevent gas leakage and ensure durability. Our new Virtual Reality (VR) training programme allows participants to become proficient in the electrofusion welding process in a tailor-made virtual environment.



### 3D Printing

3D printing technology has been used at Towngas to develop inventions such as the Laparobot — a multi-functional robot that maintains and modifies gas pipelines — as well as our Water Heater Hydropower Generator Module that generates electric power from flowing water rather than from batteries. In 2019, we set up our first 3D computer-aided design (CAD) Experience Workshop to equip our staff with basic 3D technology skills.

### Riser Jacketing Robot

In the past, when external wall gas service risers had to be maintained, the maintenance work could only be performed by our technicians working at height. Now, it can be carried out using a new robot equipped with advanced technologies such as positioning devices, pressure sensors and riser jackets. This allows the work to be done safely, with less scaffolding and fewer gondolas required. We are currently looking at further reducing the weight of the robot and developing a climbing system that is easier to operate.



## ESG Management

### Our ESG Management Approach

We have an ESG Committee to oversee the Company's strategies, policies and practices on ESG matters. The Committee, which is headed by the Managing Director of the Company, Mr Alfred Chan Wing-kin, comprises seven Executive Committee members and two members of senior management. The Chairman, who is appointed by the Towngas Board of Directors, reports on ESG matters to the Board.

The ESG Committee is responsible for identifying and reviewing ESG issues, risks and opportunities; tracking ESG performance and recommending strategies to improve it; reviewing and evaluating the annual ESG Report and recommending its endorsement by the Board/ Executive Committee; and providing updates to the Board/ Executive Committee on the latest relevant ESG matters.

In 2019, the ESG Committee met on two occasions.

Together, the nine members of the Committee represent different areas of our business, including operations, finance, human resources, engineering, commerce, health, safety and the environment, and community engagement. The Committee is thus able to facilitate the decision making of the Board and contribute to the sustainable growth of the Company.

#### Members of ESG Committee

**Mr Alfred Chan Wing-kin** (Chairman)  
Managing Director

**Mr Peter Wong Wai-ye**  
Executive Director and Chief Operating Officer - Utilities Business

**Mr John Ho Hon-ming**  
Chief Financial Officer and Company Secretary

**Mr Philip Siu Kam-shing**  
Chief Operating Officer - New Energy Business

**Mr Simon Ngo Siu-hing**  
Head of Engineering - Hong Kong Utilities

**Miss Fan Kit-ye**  
Head of Corporate Human Resources

**Mr Peter Wong Lam-sang**  
Head of Commercial - Hong Kong Utilities

**Mr Victor Kwong Chiu-ling**  
General Manager - Corporate Sustainability

**Mr Isaac Yeung Chung-kwan**  
General Manager - Corporate Affairs

### Key ESG Topics Discussed by the ESG Committee

#### ESG Framework and Targets

The ESG Committee acknowledged the newly proposed ESG Framework and discussed target setting, including medium- to long-term carbon reduction targets, to track and drive improvement in each key area. Further research and related preparation work are under way.

#### Climate Risks and Opportunities

As stakeholders increasingly expect companies to improve their disclosure on climate risks and opportunities, the Committee considered the recommended disclosures of the TCFD. The Committee supported the assessment of the resilience of Towngas' assets and operations in terms of climate-related transition risks and opportunities. For more details, please refer to [Climate-related Financial Disclosure](#).

#### Stakeholder Engagement and Materiality Assessment

The Committee discussed the process and outcomes of the [2019 Materiality Assessment](#). It reviewed the findings and results and discussed changes in material issues from the 2018 materiality matrix, as well as feedback from stakeholders and solutions for improvement.

#### Community Investment

The Committee reviewed and supported the community initiatives undertaken by Towngas in 2019. For more details on the community initiatives in 2019, please refer to the [Progress Areas](#) in the Contributing to Stakeholders section.



## Stakeholder Engagement

We engage in ongoing dialogues with stakeholders in order to understand their expectations of Towngas with regard to our ESG performance. From what we learn in these discussions, we are able to formulate an ESG strategy that answers their concerns, reduces our risks and aligns with their values.

### Stakeholder Engagement Approach

Our key stakeholders comprise both internal and external parties who are significantly affected by our operations, or are expected to have a significant impact on our business, as summarised in the graphics below.

#### Stakeholder Groups and Regular Engagement Channels

##### Employees



- Employee surveys and meetings (e.g. seminars and workshops)
- Feedback channels (e.g. suggestion boxes, Talk to MD)
- Internal publications (e.g. bulletins, newsletters)

##### Investors



- Annual General Meeting
- Annual and interim reports
- Analyst and investor briefings on interim and annual results
- Company website (especially the "Investor Relations" section) and publications
- Non-deal roadshows
- Investment conferences
- Investor meetings, telephone and video conferences
- Meetings and regular communication with credit rating agencies (S&P and Moody's)
- Site visits

##### Customers



- Publications (e.g. newsletters and leaflets)
- Company websites, social media platforms and the Towngas app
- Regular maintenance visits, safety inspections and safety talks
- Customer Focus Team
- Surveys and focus groups
- Customer service hotline
- Customer centres

##### Intranet

- Ambassador programmes/activities
- Social media platforms (e.g. Yammer in Hong Kong, WeChat and Weibo in mainland China)

##### Contractors and Suppliers



- Seminars and workshops
- Supplier assessment system (e.g. factory audits)
- Management meetings and supplier conferences
- Site/factory visits

##### Professional Bodies and Regulators



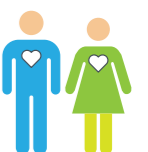
- Working groups and committees
- Seminars, visits and workshops

##### Local Communities



- District Council Focus Team
- Community programmes
- Working committees
- Towngas Volunteer Service Team

##### NGOs

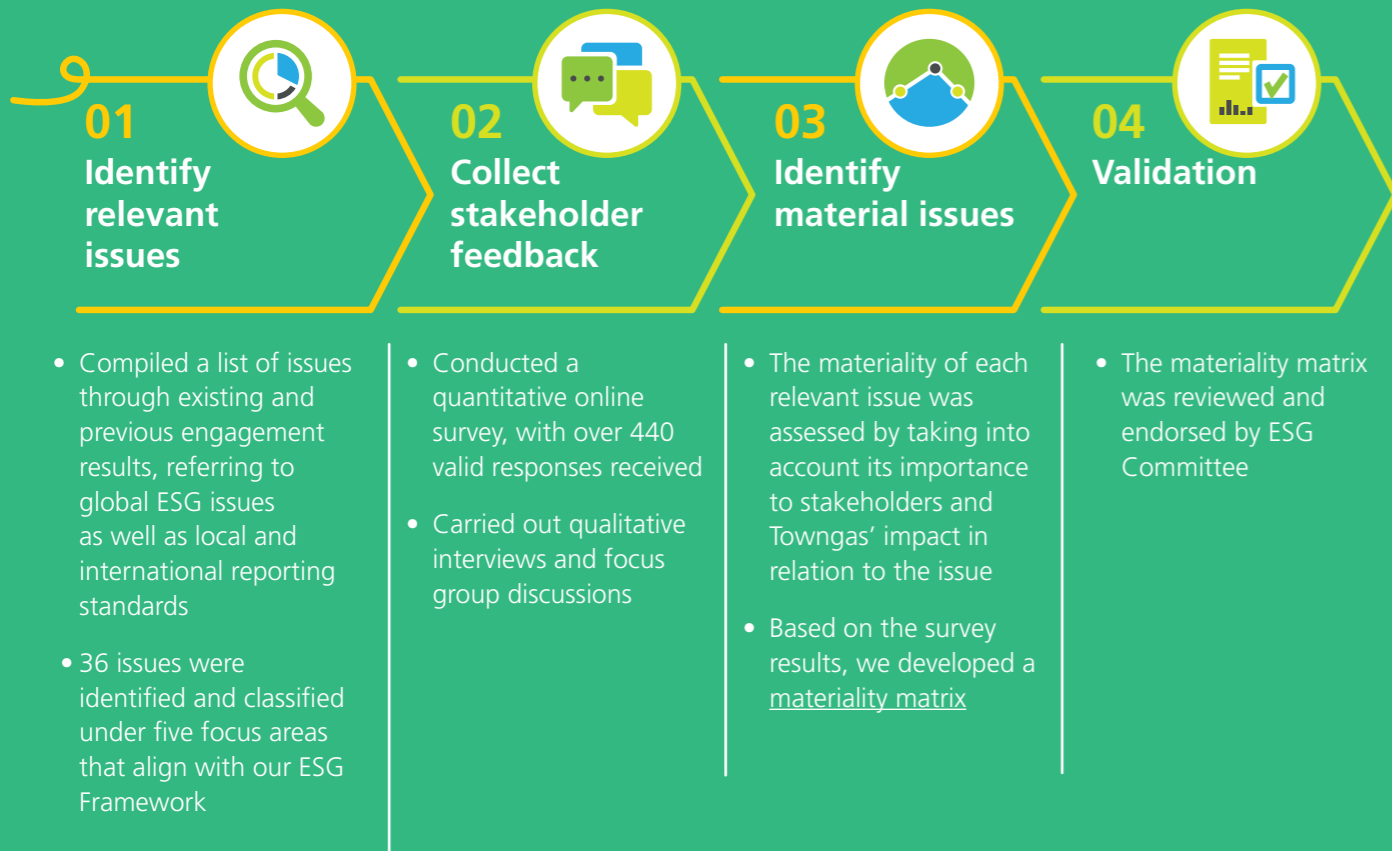


- Green partnerships and community programmes
- Meetings
- Questionnaires

## Materiality Assessment

To ensure our ESG Report addresses topics that reflect Towngas' significant economic, environmental and social impacts, we conduct a series of stakeholder engagement activities every year.

We adopted a four-step process in preparation for our Materiality Assessment:

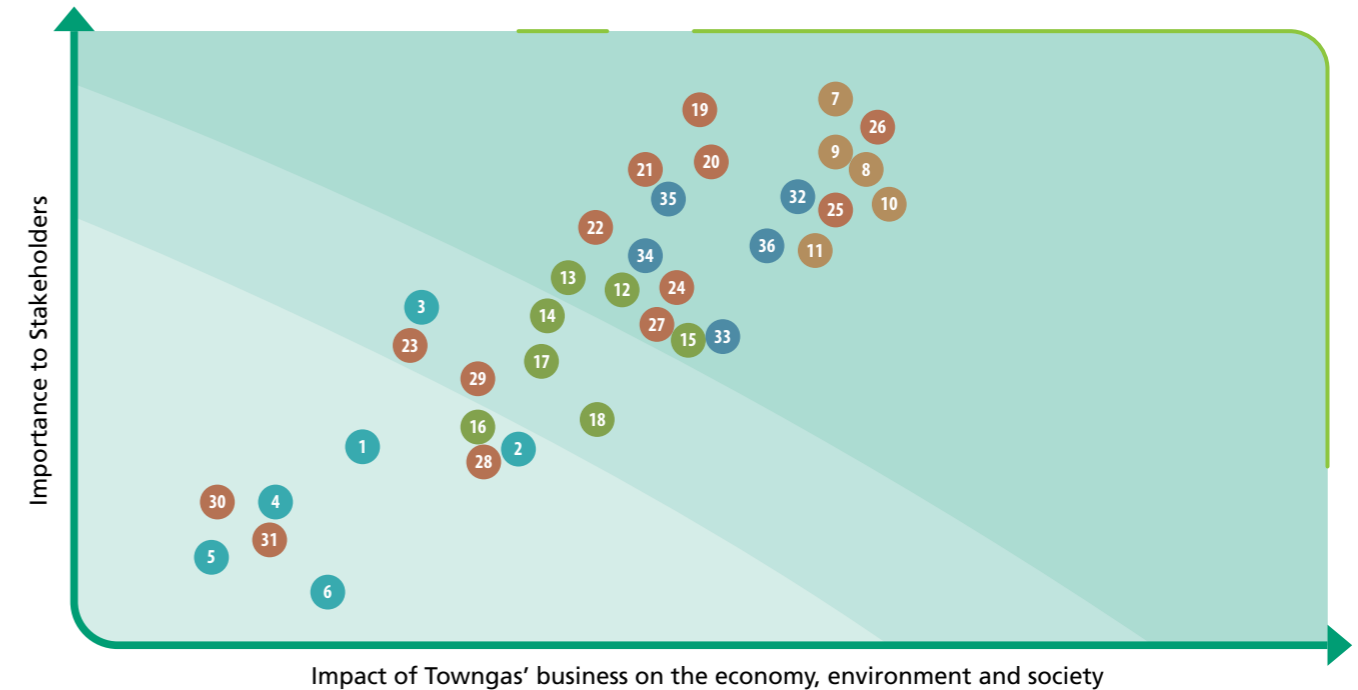


We have mapped the materiality of 36 issues, with the most important issues listed at the top right quadrant of the matrix, while less important issues are found at the bottom left. Issues shown in the middle of the matrix are those we have identified as emerging in importance.

A total of 21 issues were prioritised as material for Towngas to address and report on.

The top three material issues remain the same as last year, with a continuing focus on safety and customer privacy. These include a safe and healthy working environment, customer privacy and cybersecurity, and customer health and safety. In the current year, certain issues that were previously less material have increasingly been identified as important, including respect for human rights and supplier environmental and social assessments. This revealed a shift in stakeholder concern on issues that they feel Towngas should act on.

## Towngas 2019 Materiality Matrix



### Creating Business Opportunities

- 1 Direct economic value
- 2 Financial risks and opportunities associated with ESG issues
- 3 Direct economic contribution
- 4 Indirect economic impacts
- 5 Economic impacts of procurement practices
- 6 Reserves and production

### Ensuring Health and Safety

- 7 A safe and healthy working environment
- 8 Asset integrity and process safety
- 9 Customer health and safety
- 10 Project/engineering quality assurance
- 11 Emergency preparedness

### Protecting the Environment

- 12 Greenhouse gases and other air emissions
- 13 Water and effluents
- 14 Waste
- 15 Energy
- 16 Materials
- 17 Protection of ecosystem services
- 18 Fossil fuel substitutes

### Contributing to Stakeholders

- 19 Employment management system
- 20 Employer-employee relations
- 21 Training and development
- 22 Diversity, equal opportunity and non-discrimination
- 23 Respect for the rights of association and collective bargaining
- 24 Responsible marketing communications
- 25 Quality management and after-sales service
- 26 Customer privacy and cybersecurity
- 27 Supplier environmental and social assessment
- 28 Community engagement, impact assessment and investment
- 29 Respect for indigenous rights
- 30 Involuntary resettlement
- 31 Participation in public policy

### Strengthening Corporate Governance

- 32 Anti-corruption
- 33 Prevention of anti-competitive practices
- 34 Prevention of child labour or forced labour
- 35 Respect for human rights
- 36 Protection of intellectual property rights

The following items are the 21 most material issues for 2019 and their corresponding boundaries, where the impacts occur, and Towngas' involvement in them.




Material Issues	Boundaries				Impacts
	Employees	Contractors and Suppliers	Customers	Community	
7. A safe and healthy working environment					<u>Ensuring Health and Safety</u>
8. Asset integrity and process safety					<u>Ensuring Health and Safety</u>
9. Customer health and safety					<u>Ensuring Health and Safety</u>
10. Project/engineering quality assurance					<u>Ensuring Health and Safety</u>
11. Emergency preparedness					<u>Ensuring Health and Safety</u>
12. Greenhouse gases and other air emissions					<u>Protecting the Environment</u>
13. Water and effluents					<u>Protecting the Environment</u>
15. Energy					<u>Protecting the Environment</u>
19. Employment management system					<u>Contributing to Stakeholders</u>
20. Employer-employee relations					<u>Contributing to Stakeholders</u>
21. Training and development					<u>Contributing to Stakeholders</u>
22. Diversity, equal opportunity and non-discrimination					<u>Contributing to Stakeholders</u>
24. Responsible marketing communications					<u>Contributing to Stakeholders</u>
25. Quality management and after-sales service					<u>Contributing to Stakeholders</u>
26. Customer privacy and cybersecurity					<u>Contributing to Stakeholders</u>
27. Supplier environmental and social assessment					<u>Contributing to Stakeholders</u>
32. Anti-corruption					<u>Strengthening Corporate Governance</u>
33. Prevention of anti-competitive practices					<u>Strengthening Corporate Governance</u>
34. Prevention of child labour or forced labour					<u>Strengthening Corporate Governance</u>
35. Respect for human rights					<u>Strengthening Corporate Governance</u>
36. Protection of intellectual property rights					<u>Strengthening Corporate Governance</u>

### Focus Group Discussions and Our Response

To identify the issues that are material to our business, we hold a number of focus group discussions as part of our stakeholder engagement activities. Focus group discussions allow us to identify ESG topics that are important to our stakeholders, explore their concerns and expectations, and translate these into outcomes that can be prioritised for action.

In 2018, we held two focus group sessions with internal and external stakeholders, which gave us an overview of their concerns and expectations. In 2019, we deepened our engagement with internal stakeholders by organising two focus group sessions with general and managerial staff from different departments.

The three key issues raised were: talent attraction and retention, inclusive workplace, and internal communication. Their feedback and our responses are presented below:

	Stakeholders' Feedback	Our Response
 <p><b>Talent attraction and retention</b></p>	<p>Succession among technicians is a challenge, in particular with the ageing of the workforce and high turnover rate.</p>	<p>We are expanding channels for recruiting technicians and exploring ways to retain experienced technicians.</p> <p>A review of technicians' remuneration packages and promotion path was completed.</p> <p>Please refer to <a href="#">Talent Attraction and Retention</a> for more details.</p>
 <p><b>Inclusive workplace</b></p>	<p>Employees desire a more flexible work schedule.</p>	<p>We are considering the possibility of adopting a flexible work hours scheme and have been consulting with department heads on its implementation.</p>
 <p><b>Internal communication</b></p>	<p>Staff hesitate to express their opinions as their names are shown in internal communication.</p>	<p>We will look into the possibility of developing channels that enable employees to contribute anonymously while allowing us to follow up on opinions and ideas.</p>

We believe stakeholder engagement is a continuous process that helps translate stakeholder needs into organisational goals and creates a basis for developing effective strategies. For the future, we plan to develop a three-year stakeholder engagement plan to engage different stakeholder groups in a more structured manner. The development of this plan, which is based on the AA1000 Stakeholder Engagement Standard, will ensure that the outcomes from stakeholder engagement are incorporated into our ESG management.

# 04 CREATING BUSINESS OPPORTUNITIES



## Keeping Our Promises to Stakeholders

A green economy has been defined by the United Nations Environment Programme (UNEP) as “one that improves human well-being and builds social equity while reducing environmental risks and scarcities.”

In response to stakeholders’ concerns, we are constantly looking for opportunities to develop new forms of sustainable energy and energy distribution, while facilitating the transition to clean energy. In the years ahead, we plan to invest billions of Hong Kong dollars in the development of innovative green technologies and to identify new markets for our established energy business, with a focus on “waste to treasure”. Many projects are already under way and will be replicated or scaled up if proven successful.



## Our Management Approach

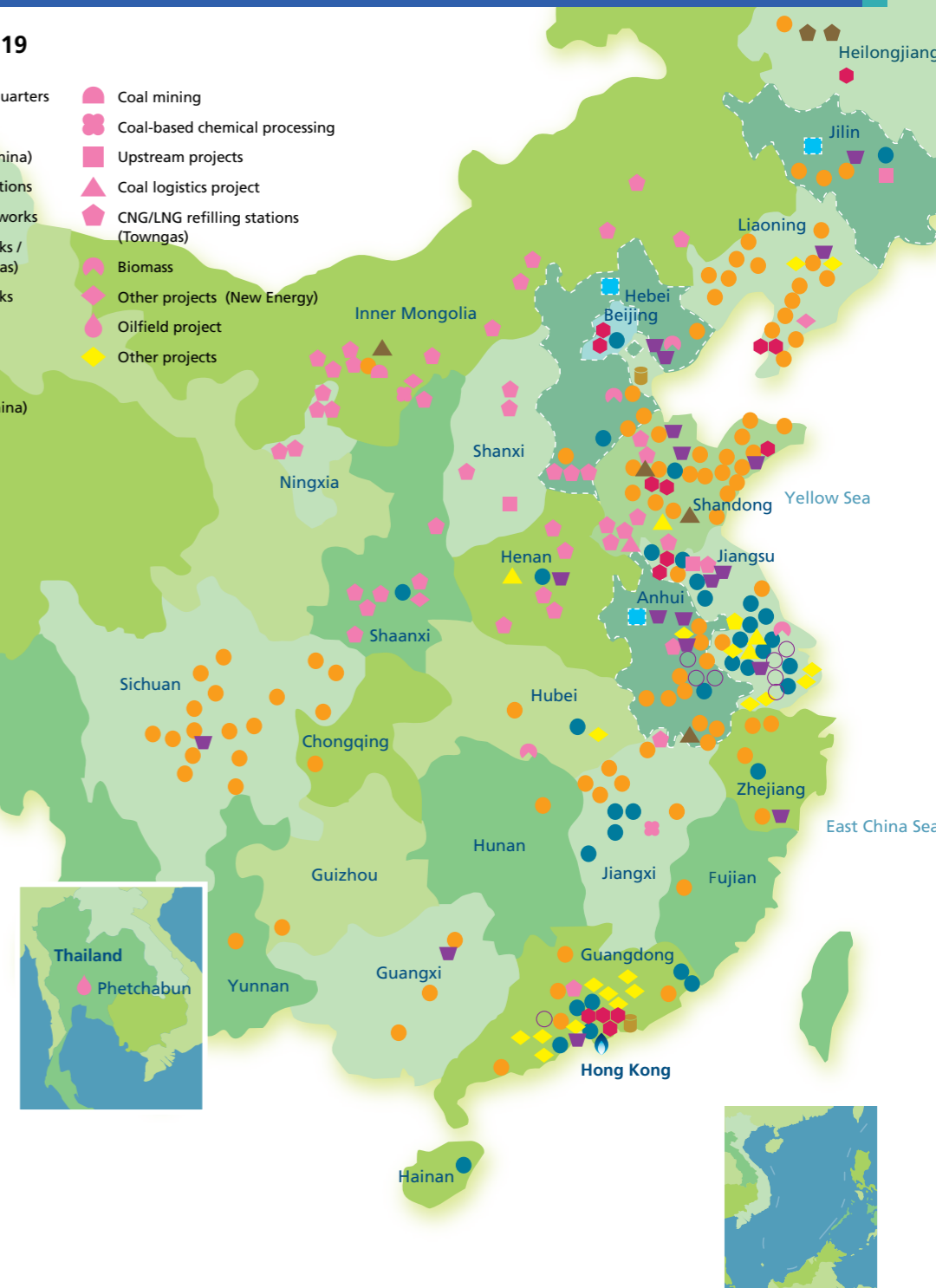
Guided by our vision to be Asia’s leading supplier of clean energy, Towngas anticipates the types of energy and fuel that will be used in the future.

We understand that a green economy is the cornerstone of sustainable development and that a global energy transition is currently under way. As our core business is based on the operation of our gas networks in Hong Kong and mainland China, we hope to build on this foundation by diversifying into distributed energy systems (DES) and other forms of new energy.

Aside from new energy, we will also continue to explore business opportunities in sectors such as water supply and the telecommunications industry. By pursuing these opportunities, we believe we can remain commercially competitive and sustain our business.

### Business Coverage in 2019

- Towngas Group Hong Kong headquarters
- Piped city-gas projects (Towngas)
- Piped city-gas projects (Towngas China)
- Liquefied natural gas receiving stations
- Provincial natural gas pipeline networks
- City high pressure pipeline networks / Underground gas storages (Towngas)
- City high pressure pipeline networks (Towngas China)
- Distributed energy systems
- LNG refilling station (Towngas)
- CNG refilling stations (Towngas China)
- Water/Waste treatment projects
- Telecommunications projects
- Coal mining
- Coal-based chemical processing
- Upstream projects
- Coal logistics project
- CNG/LNG refilling stations (Towngas)
- Biomass
- Other projects (New Energy)
- Oilfield project
- Other projects



## Growth of Our Business

Towngas is a limited liability company incorporated and headquartered in Hong Kong and listed on The Stock Exchange of Hong Kong Limited (00003:HK). Founded in 1862, Towngas was Hong Kong's first public utility. Over the years, Towngas has transformed from a small gas company supplying fuel for street lamps in Hong Kong into a leading conglomerate in Hong Kong and mainland China's energy industry. Today, we are one of the largest energy suppliers in Hong Kong, operating with world-class corporate management and leading-edge business practices.

Based in Hong Kong, Towngas has built up a portfolio that currently includes 265 projects in 26 provinces, autonomous regions and municipalities in mainland China, as well as one in Thailand.

For details on the changes in our portfolio of businesses during the year, please refer to our **Annual Report 2019**.

### Business Profile in 2019

#### Hong Kong

- Town gas
- Sales of branded gas appliances



Town gas sales: **28,712 million MJ**

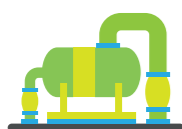
Customer accounts served: **1.93 million**

Sales of gas appliances:  
**> 290,000 units**



#### Mainland Utilities

- City-gas
- Midstream facilities
- Water supply and wastewater treatment
- Sales of gas appliances, kitchen furnishings and insurance



Gas sales: **25.55 billion m<sup>3</sup>**

Number of city-gas customer accounts:  
**29.78 million**



Sales of gas appliances:  
**> 800,000 units**



Water sales:  
**926 million tonnes**

Number of water customer accounts:  
**2.38 million**



#### New Energy and Diversified Businesses

- Green energy
- Telecommunications
- Information technology
- Civil and building services engineering
- Manufacture of gas-related products



Aviation fuel:  
approximately **6 million tonnes** (Hong Kong)



Vehicle fuel  
**5** LPG refilling stations (Hong Kong)

**48** LNG/CNG refilling stations in operation or under construction (mainland China)



Coalbed methane  
**152,688 tonnes** (mainland China)



Coal  
Methanol:  
**182,792 tonnes** (mainland China)

Ethylene glycol:  
**80,128 tonnes** (mainland China)



Waste oil  
HVO:  
**24,387 tonnes** (mainland China)



Data centres:  
**7** in Hong Kong and mainland China, accommodating around **16,000** server racks

For a full summary of Towngas' roles and services, please refer to [Appendix I: Our Roles and Services](#).

## Green Financing

To finance our current and future green initiatives, in late 2017 we issued our first green bond in Hong Kong based on our Towngas Green Bond Framework. Then, in 2019, we obtained post-issuance stage certification from the Hong Kong Quality Assurance Agency (HKQAA) under its Green Finance Certification Scheme in order to increase investor confidence.

To learn more about our **Green Bond Framework**, please refer to our corporate website.



### Use of Proceeds

Our Green Bond was issued through a HK\$600 million (ISIN HK0000375300) and a JPY2 billion (ISIN XS1720566790) transaction. Proceeds from the green bond of HK\$734.4 million have been allocated to finance the following waste-to-energy projects:

Project Category	Location	Equity Share	Estimated Project Cost (million)	Amount and Ratio Allocated (HK\$ million)	
				ISIN HK0000375300	ISIN XS1720566790
Landfill Gas Utilisation	Tseung Kwan O, Hong Kong	100%	HK\$350	145.0 (24.3%)	35.0 (25.4%)
Kitchen Waste Processing (Waste to Energy)	Suzhou city, Jiangsu province, PRC	55%	RMB220	23.0 (3.9%)	24.0 (17.5%)
Hydro-treated Vegetable Oil (Waste to Energy)	Zhangjiagang city, Jiangsu province, PRC	100%	RMB935	400.0 (67.0%)	56.0 (40.7%)
Agricultural Waste to Green Chemicals and Paper Pulp	Tangshan city, Hebei province, PRC	100%	RMB327.5	28.9 (4.8%)	22.5 (16.4%)

### Project Update

Project Category	Estimated GHG Reduction (tCO <sub>2</sub> e/yr)	Project Progress
Landfill Gas Utilisation	10,700	<ul style="list-style-type: none"> <li>The project was in full operation in 2019</li> </ul>
Kitchen Waste Processing (Waste to Energy)	9,300	<ul style="list-style-type: none"> <li>Trial production commenced in February 2019</li> <li>Full operation expected to commence in Q3 2020</li> </ul>
Hydro-treated Vegetable Oil (Waste to Energy)	830,000	<ul style="list-style-type: none"> <li>Currently in trial production. Second phase of the project began undergoing construction in 2019, and is expected to be commissioned in 2020</li> <li>Received ISCC for the third year</li> </ul>
Agricultural Waste to Green Chemicals and Paper Pulp	120,000	<ul style="list-style-type: none"> <li>The project location has been changed from Hubei province to Hebei province</li> <li>Trial production at this plant will begin in 2020</li> </ul>



## Financial Analysis



**Revenue**  
**HK\$40,628 million**



**Capital Expenditure**  
**HK\$7,053 million**

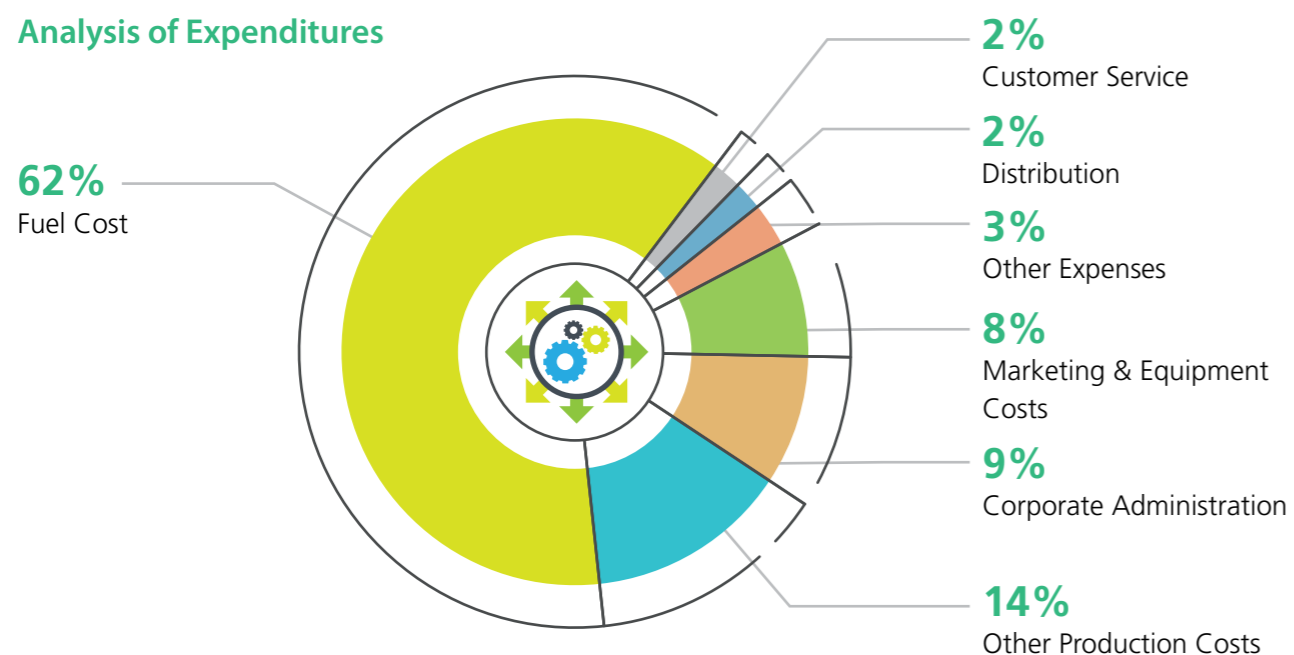


**Manpower Costs**  
**HK\$3,485 million**

### Analysis of Revenue



### Analysis of Expenditures



## Transitioning to a Low-carbon Future

The world needs more energy to meet the needs of growing populations and economies, but with fewer emissions to ensure a sustainable future.

Meeting this dual challenge is a responsibility that we at Towngas take seriously.

We also believe that the challenge of sustainable energy presents an opportunity for the growth of our businesses. Examples of our transition to a more sustainable business model include the following:



### The Role of Natural Gas in Energy Transition

Natural gas plays an important role in replacing more polluting fuels, improving air quality and limiting greenhouse gas (GHG) emissions.

In 2019, we extended our city-gas business in mainland China to 23 provinces, autonomous regions and municipalities, and served over 29 million customer accounts.

Towngas has been working closely with commercial and industrial customers, such as hotels, hospitals and commercial laundries, to switch from coal/diesel to gas, as collaboration is vital for creating a low-carbon future.

To further reduce the reliance on coal-fired power, we have been developing DES since 2017. In 2019, we secured eight new projects, equivalent to 420 million cubic metres of natural gas consumption, in Anhui, Hebei, Henan, Zhejiang and Guangdong provinces. Our target is to achieve 3.5 billion cubic metres in DES gas sales by the year 2022.

These initiatives align with the Chinese Government's natural gas utilisation policy, which accelerates the pace of coal-to-gas conversion. We believe the concerned policy will continue to benefit our city-gas and natural gas businesses well into the future.





## Development of New Energy and Unconventional Energy

At Towngas, the transition to cleaner energy started almost 20 years ago with the founding of ECO Environmental Investments Limited (ECO), a business platform for pursuing new energy opportunities.

ECO's advanced in-house research and development capabilities have enabled us to develop a wide range of environmentally friendly energy businesses and related technologies. Its main business focus today includes low-carbon and clean coal-derived chemicals, conversion of agricultural straw, upgrade of inedible bio-grease, and utilisation of unconventional gas resources.

Our projects that introduce new sources of renewable energy into the market have already begun to yield economic and environmental benefits. They are also reinforcing our belief that we can make a contribution towards the transition to clean energy while sustaining our business.

### Energy Transition in the Transport Industry

Part of our efforts towards energy transition involves the development of alternative fuels to replace the use of petroleum-based products (primarily gasoline and diesel).

Since 2000, we have been supplying liquefied petroleum gas (LPG) and liquefied natural gas (LNG) to our customers in Hong Kong and mainland China. We recognise that greater efforts are needed to complete the transition to a low-carbon future, as LPG and LNG do not present an optimum long-term solution, particularly in light of growing policy initiatives worldwide urging the transportation sector to do more to lower emissions.



Our hydro-treated vegetable oil (HVO) plant in Zhangjiagang city, Jiangsu province is one example of how we are contributing to a low-carbon transport industry. At this plant, we are converting inedible bio-grease feedstock into an advanced biofuel with International Sustainability & Carbon Certification (ISCC) that offers a nearly 90% reduction in GHG emissions as compared to traditional fossil diesel. In 2019, ECO sold over 24,000 tonnes of HVO to customers in Europe. ECO is constructing phase two of this project to enhance production capacity to 250,000 tonnes per annum; commissioning is expected in 2020.

In addition to expanding its first HVO plant in mainland China, ECO is exploring other possible sites for a new HVO plant in Southeast Asia.

## High-value Products from Low-grade Feedstock

### In Operation

#### Liquefied Natural Gas



Conversion of coalbed methane in Shanxi

#### Ethylene Glycol and Methanol



Clean coal chemical plant in Inner Mongolia

### Under Development

#### Green Chemicals Including Furfural and Paper Pulp

Conversion of agricultural waste in Hebei

### Trial Production/Trial Operation

#### Natural Gas, Oil Products, Solid Fuel and Fertilisers

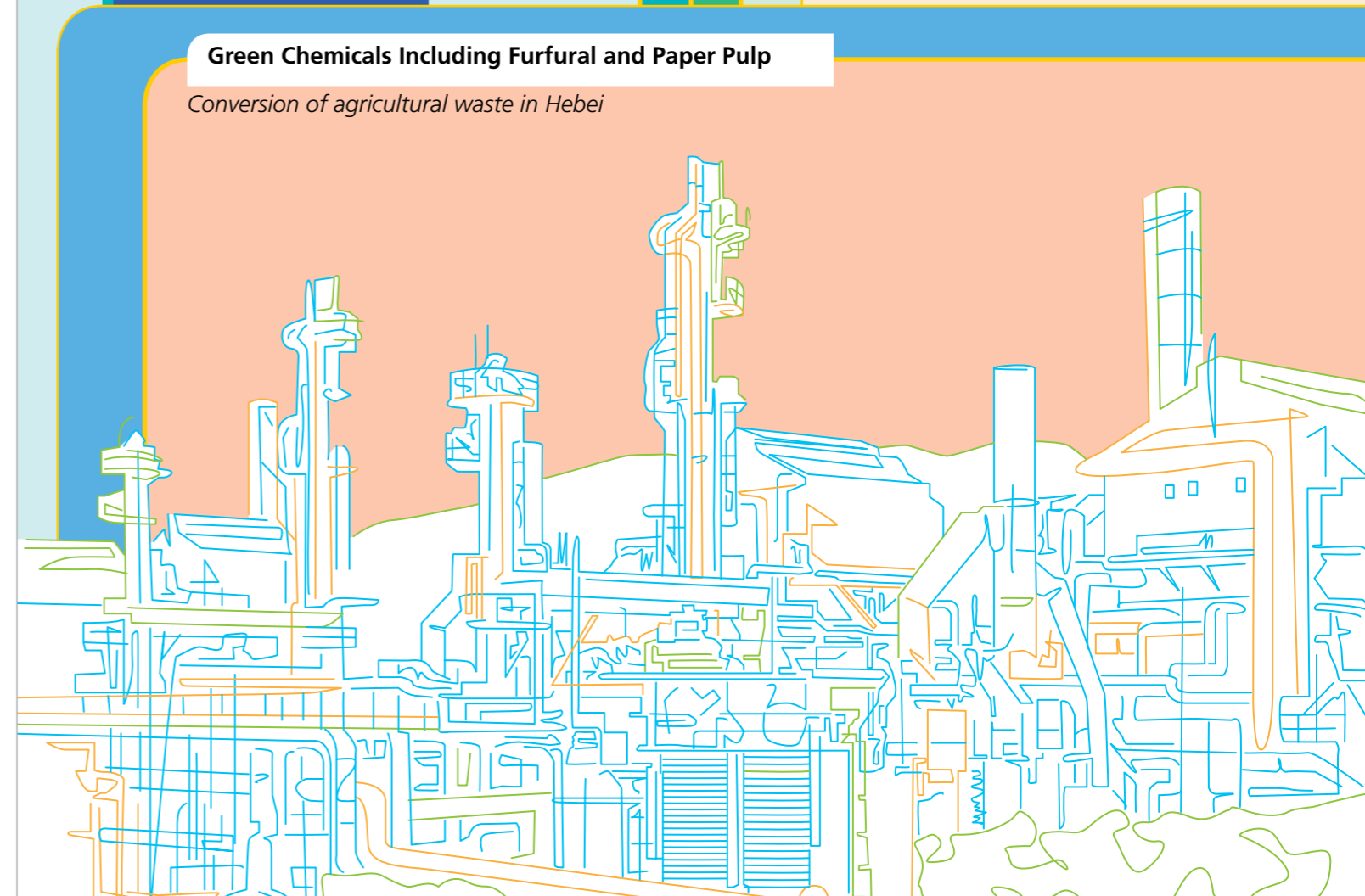


Food waste processing and utilisation in Suzhou

#### Hydro-treated Vegetable Oil



Upgrade of inedible bio-grease in Zhangjiagang



## The Circular Economy at Towngas

The aim of a circular economy, known as a recycling economy, is to reduce waste and keep resources in use for as long as possible, unlike a traditional linear economy in which resources are used to make goods that are eventually discarded.

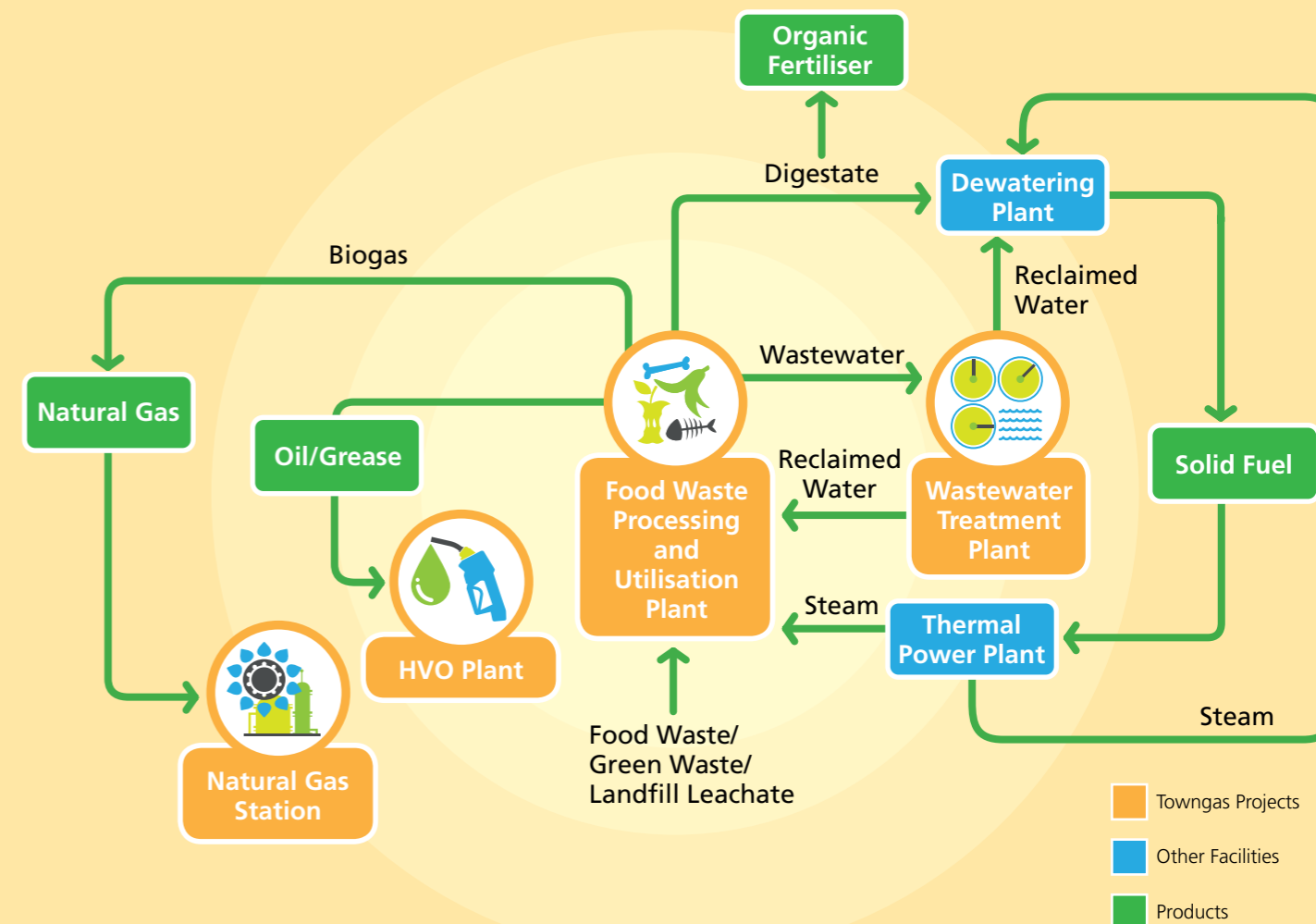
At Towngas, we believe that waste is a resource that is in the “wrong place” and have been turning such resources into products with higher value through initiatives such as our landfill gas utilisation projects in Hong Kong and coalbed methane liquefaction plant in mainland China.

In mainland China, our Hong Kong and China Water Limited (Hua Yan Water) business has branched out into bio-waste treatment at Suzhou Industrial Park. Apart from this food waste processing and utilisation plant, we also have wastewater treatment plants and a natural gas station at the Park, which together with a nearby sludge treatment plant and thermal power plant are creating a comprehensive recycling system.

### Map and process diagram of Towngas projects at Suzhou Industrial Park



- 📍 Towngas projects comprising wastewater treatment projects, a food waste project and a city-gas project
- 📍 Other facilities



As shown in the illustration, the process begins with the collection of food waste, green waste and landfill leachate. These raw materials are then converted at our plant into various products that are upgraded for use mainly within Suzhou Industrial Park:

- Biogas for conversion into natural gas for the natural gas distribution system
- Oil or grease for conversion into raw materials at our HVO plant
- Digestate, which is dewatered to produce solid fuel for the thermal power plant where steam is generated, and fertilisers for landscaping the grounds at the Park

Wastewater is also treated and reused in our food waste processing and utilisation plant, as well as the dewatering plant.

The present capacity of the food waste processing and utilisation plant is 500 tonnes of waste per day. Currently, kitchen waste is collected only from commercial outlets such as restaurants and hotels. In the second phase of the Plant, we will also treat residential kitchen waste to bring the Plant's total capacity up to 1,000 tonnes per day.

We believe that this eco-project of turning waste into different types of energy has the potential to be replicated in other areas of mainland China and international markets.

05

## ENSURING HEALTH AND SAFETY



### Keeping Our Promises to Stakeholders

According to our commitment to safety, we have pledged to achieve zero accidents among employees and contractors, to provide customers with a safe supply of energy, and to promote health and safety awareness to the public.

To maintain our commitment to safety, we will continue to organise a variety of occupational safety and health (OSH) programmes. For the safety of our customers, we are developing appliances with smart functions and sensors as part of our Smart Kitchen project. Concurrently, we are creating a big data analytics platform that will allow us to carry out more in-depth analyses of our products for continuous improvement in the design.



### Our Management Approach

At Towngas, our approach to safety management balances strategic, long-term planning with events and activities that promote safe practices among our employees and contractors, both in Hong Kong and mainland China. We understand that as a public utility and a leading energy supplier in Hong Kong and mainland China, we must ensure our facilities are well-designed, safe to operate, properly maintained and regularly inspected so they do not cause harm to people or the environment.

To protect our staff, contractors, customers and the general public against health and safety risks, we have established a **Corporate Health, Safety and Environment (HSE) Policy**.

Towngas aims for a record of zero accidents and fully complies with all relevant health and safety legislation. To meet our objective of zero accidents, we have put in place an OSH management system in accordance with international standards such as ISO 45001. The health and safety performance of the Company is monitored by the Corporate Sustainability Department as well as the Corporate Safety and Quality Management Steering Committee. The details of our HSE management structure are available on [corporate website](#).

As product and service safety are essential for our customers, we ensure every procedure is carried out according to our internal guidelines, which also comply with laws and regulations. These guidelines cover the installation, replacement and maintenance of gas appliances, gas meters and gas pipes within our customers' premises. When developing new gas appliances, we follow strict safety and quality control systems that govern the way we source raw materials, produce and deliver end products. Our suppliers are also required to comply with our product safety requirements.

Towngas adheres to well-established design, engineering and operating principles to maintain the safety of our facilities and equipment. By combining these principles with a rigorous maintenance regime, we are able to ensure our processes and assets are safe, reliable and in good working order. Our gas production plants and transmission and distribution network have all been certified to the ISO 55001 Asset Management standard. A Process Safety Management (PSM) system is also in place for our chemical plants in Hong Kong and mainland China, which allows us to identify and record critical hazards, and develop measures to control and mitigate risks. In case of an emergency, Towngas has a robust Corporate Crisis Management Plan to recover from an emergency situation in a timely and effective manner, and ensures disruptions to the public are kept to a minimum.

Further to this, we connect with stakeholders, including our employees, contractors, customers and the public, to enhance their safety awareness and build trust.



## Occupational Safety and Health

### 2019 Performance Highlights



- Achieved **ISO 45001** certification for Towngas

- Conducted **212** safety/loss prevention inspections in Hong Kong

- Towngas Smart OSH Warehouse** to enhance OSH levels

- Accident frequency rate (Hong Kong):
  - Employees: **0.18**
  - Contractors: **0.14**
 accidents per 100,000 man-hours

### Achieve Zero Accidents



- Keep **zero accidents** as our target for health and safety

- Extend **ISO 45001** certification to subsidiaries



### Promote Health and Safety Awareness



- Launched a quarterly **Occupational Health Promotion Programme**

- 864,759** safety training hours (mainland China)

- 12,737** safety training hours (Hong Kong)



- Enhance awareness of **Hazard Identification and Risk Assessment** for frontline workers and supervisors

- Launch **health and fitness campaigns**



- Organise **Tailor Made Safety Supervisors Training** for frontline supervisors

- Instil a **safety culture** among our mainland employees



### How We Work

### A Systematic Approach to Safety

A Corporate Health and Safety Manual is in place to outline the framework of the OSH management system. In addition, standard operating procedures and detailed guidelines have been established to support the implementation of the OSH management system. These documents are regularly reviewed and updated so that our practices continue to remain in line with the latest industrial practices and government requirements.

Under the OSH management system, we have a comprehensive risk and opportunity management system to identify work-related hazards through risk analysis and evaluation, along with control measures. Opportunities are also identified for continual improvement.

In the event of an accident, an investigation will be carried out. All relevant documents will be reviewed, a safety visit will be conducted, and the personnel concerned will be interviewed. We will then undertake mitigation measures according to a hierarchy of control framework to prevent recurrence.

As communication is vital for sound management, we have established 11 HSE Committees to provide opportunities for two-way communication. Management, supervisory staff, non-managerial staff and contractors are invited to sit in at the meetings of these committees to discuss safety and health-related issues on a regular basis.

Various reporting channels and promotion schemes, such as HSE Suggestion Scheme, Near-miss Reporting Programme and Instant Messaging HSE Reporting Channel, have been set up so that employees and contractors can report work-related hazards, hazardous work conditions and near-miss cases for rectification and improvement. To encourage reporting, we reward workers who flag cases. Incentive schemes are also available to contractors who demonstrate responsibility, awareness and a high level of safety performance.

In mainland China, we have helped our joint venture (JV) partners to establish in-house corporate safety standards and guidelines and improve safety management.

### Training in Safety

We continue to strengthen the safety competence and culture of our employees and contractors through training courses, workshops and activities to help establish, implement, maintain and continually improve the OSH management system. To determine the training needs of our workers and assess their competence, we have established a standard training procedure.

During job briefings and in our training programmes, we inform workers about safety and health concerns and the emergency handling procedures they should take. Health and safety messages are disseminated through communication channels such as Towngas publications, emails and our online library.

Additionally, we make the Towngas Contractor Safety Handbook available to our contractors and provide free safety briefings to their staff carrying out work above ground and in confined spaces, or performing excavation work close to our gas pipelines.



## Progress Areas

### Enhancing Safety Performance

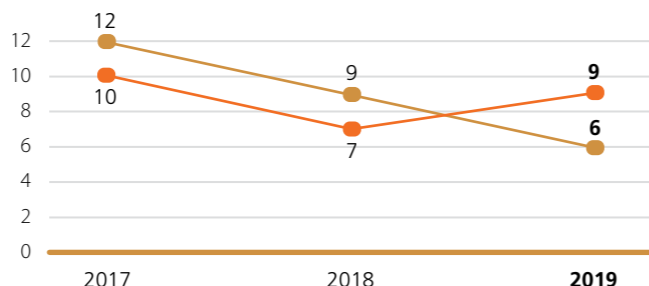
After achieving ISO 45001 certification earlier this year, we are supporting our subsidiaries to also attain this certification in order to raise the effectiveness and efficiency of our overall OSH management system.

In 2019, we carried out 212 safety/loss prevention inspections to ensure safety measures were in place and to maintain a safe and healthy work environment. Focus areas for improving our OSH management during 2019 included ISO 45001 Risks and Opportunities Training, Proper Manual Handling and a Mindfulness Workshop.

We also organised an OSH programme for contractors during the year and presented the contractor who demonstrated the best safety performance and site safety conditions with a Contractor Site Safe Award. The Contractor OSH Forum brought together over 200 contractors and colleagues to raise awareness of health and safety and accident prevention.

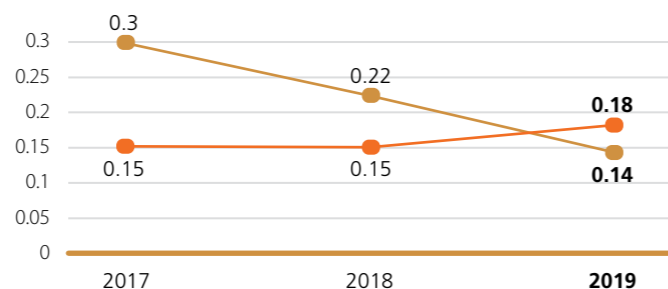
In 2019, there were no fatalities among our employees and contractors. The graphs show the safety performance of Hong Kong employees and contractors.

#### Reportable Accidents



\* Accidents that result in incapacity for more than three days

#### Accident Frequency Rate



\* Number of accidents per 100,000 man-hours worked

● Contractor ● Employee

We are also helping our mainland China operations catch up with currently recognised OSH standards and standardising the OSH management of our JVs based on international standards such as ISO 45001. In order to align our Hong Kong and mainland operations on issues of safety and health, we organised an HSE Walk in 2019. This was the second HSE Walk organised by Towngas, with more than 140 JVs and over 14,000 staff and their families joining the event.

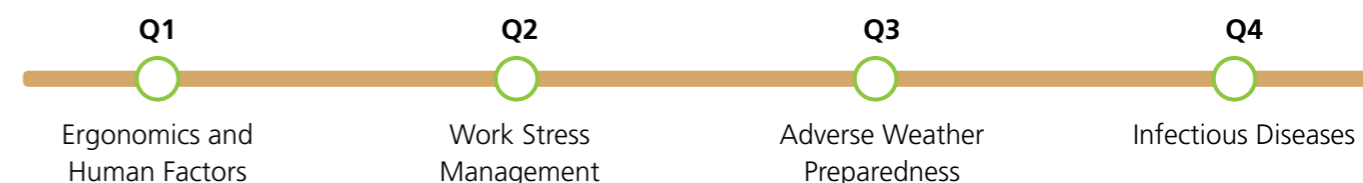


### Enhancing Employee Wellbeing

Over the years, we have established a number of programmes dedicated to our employees' wellbeing, including both their physical and mental health.

To promote a friendly, more supportive and stress-free work environment, we offer free clinical services, fitness facilities and a mother care room at our headquarters in North Point. In 2019, we launched a Quarterly Occupational Health Promotion Programme with seminars, workshops and tips so that our staff can be healthier, happier and more productive. We also shoulder the cost of seasonal influenza vaccinations for our staff.

#### Quarterly Occupational Health Promotion Programmes



We help our staff strike the right balance between their work and personal lives through workshops and activities such as corporate events and community service. These activities are also open to their families.



## Safer Work Through Technology: The Towngas Smart OSH Warehouse

At Towngas, we recognise that traditional warehouse operations pose a number of significant risks arising from manual handling, human error and work stress.

To minimise these risks, we developed a smart warehouse, which incorporates a variety of innovative technology tools to create a safer working environment for our employees.

When developing this new warehouse design, we used analysis tools to examine the risks encountered in traditional warehouses. From what we learned, we applied source control and engineering strategies to develop innovative equipment which helps reduce operational risks, improve efficiency, and enhance workplace comfort and morale for our employees.

In addition to raising safety standards, the Towngas Smart OSH Warehouse has also increased job satisfaction among employees.



**Vacuum Lifter**  
Manual handling work is replaced by this Vacuum Lifter, which applies suction force to lift heavy goods, thus reducing the risk of musculoskeletal problems and related occupational hazards.



**Elevating Platform**  
The Elevating Platform keeps goods to be lifted at waist level in order to minimise the lifting distance.



**Automated Guided Vehicle**  
In collaboration with the Logistics and Supply Chain MultiTech R&D Centre, we developed this intelligent Automated Guided Vehicle which automates the delivery of shelves to employees.

## Customer Safety

### 2019 Performance Highlights

#### Promote Health and Safety Awareness



- **1,166,904** regular safety inspections (Hong Kong)
- **32** community safety exhibitions and talks (Hong Kong)

#### Provide a Safe Supply of Energy and Products



- **↓37%** customer-related emergency reports in last five years

### Future Actions and Targets



- Develop **smart sensors** and **remote control systems** for cooking appliances



### How We Work

The safety of our customers takes precedence throughout our operations, from product development to customer service. To understand the needs of our customers and formulate a strategy to further improve customer safety, we have engaged an independent research company to carry out bi-monthly customer satisfaction surveys, and organise other customer surveys and focus groups when necessary.

### How Towngas Protects Customers



#### Product Development

- Gas appliances are equipped with innovative safety features such as timer controls and flame failure devices



#### Quality Assurance

- Compliance checks are conducted to ensure consistently high standards across all our product lines
- All gas appliances are tested according to rigorous quality control systems in an accredited laboratory



#### Product Labelling

- All gas appliances come with operating instructions on the safe and proper use of our products



#### Customer Service

- Regular safety inspections are conducted for all gas installations, external service risers, and testing installation pipes
  - every 18 months in Hong Kong
  - every 12–24 months in mainland China

- 24-hour Emergency Hotline with a team dedicated to handling and investigating gas emergency incidents
- Manual of Remedial Measures, with established remedial actions to ensure domestic gas appliances are safe for public use



#### Customer Engagement

- Safety exhibitions and talks, as well as Customer Focus Team visits, leaflets, videos, posters and the corporate website to raise safety awareness

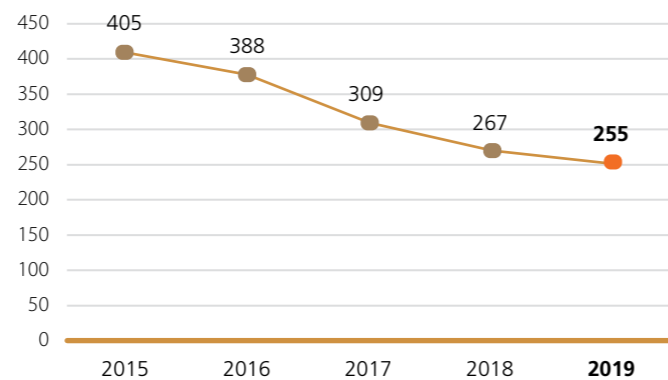
## Progress Areas

### Continuous Customer Engagement

In 2019, we made 1,166,904 home visits to prevent problems before they occur and held 32 safety exhibitions and talks to raise public awareness of gas safety and to understand customer needs. Through these efforts, we have achieved a decline in customer-related emergency reports.

We also engage customers through various channels, such as our Customer Focus Team and District Council Focus Team. Regular meetings are held to discuss customer feedback and issues such as billing, service quality and the needs of elderly customers in an ageing society.

#### Customer-related Emergency Reports



Towngas' timely response to emergencies meets world-class standards.

**Emergency Team average arrival time**

<b>2019 Results</b>		<b>Target</b>
Arrived within <b>21.5 minutes</b> on average		Arrive on site within <b>25 minutes</b>



### Safe Appliances for the Elderly

One of the issues identified by our stakeholders was the ageing of society and the needs of the elderly. In response to the safety concerns of our elderly customers, Towngas is developing cooking appliances with safety features such as anti-scorch functions as well as remote monitoring and shut off systems as part of our Smart Kitchen project. These systems allow users to remotely monitor their appliances and shut them off, if needed, via their mobile devices, or alert them to turn off the appliances before leaving home. These appliances will be launched in 2020.

Similar smart features will be gradually introduced to other newly developed appliances such as hotplates, built-in hobs, range hoods, and water heaters.

## Public Safety

### 2019 Performance Highlights

**Hong Kong**

- **149,630** trench inspections at **8,601** active sites
- Gas incidents reported by the public per 10 km of gas pipes **↓24%** in last five years
- **Table-top exercises** were conducted, covering topics such as cybersecurity and public order scenarios
- **All** of ECO's mainland chemical plants in operation conducted PSM audits

**Provide a Safe Supply of Energy**

**Mainland Utilities**

- **56** city-gas business JVs completed safety audits and scored "Excellent" on average
- Serious gas-related accidents **↓43%** in last five years

**Future Actions and Targets**

- Develop a **data logger** with a temperature sensor for governor kiosks to monitor gas pressure and detect fires
- Install **sensors** to monitor transmission and distribution systems

## How We Work

### Comprehensive Monitoring

We continuously monitor our facilities to identify potential hazards and mitigate risks while looking for ways to make improvements.

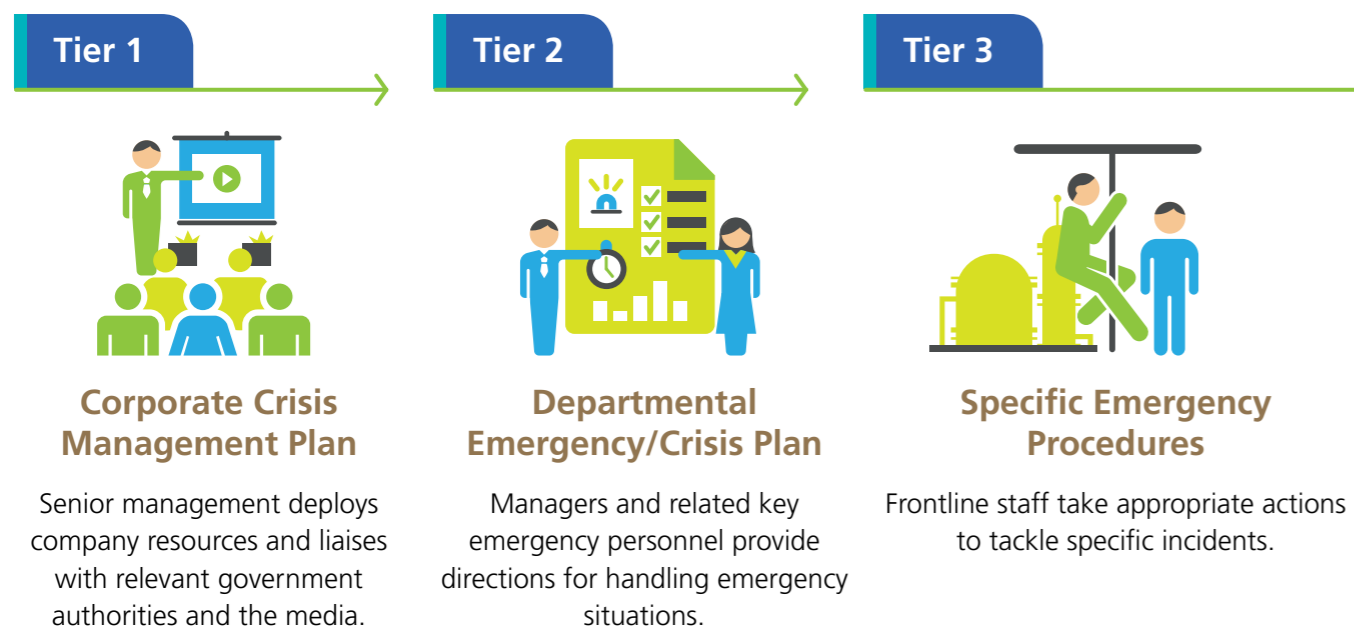
In Hong Kong, we operate a 24-hour Grid Control Centre at our headquarters in North Point for monitoring our network in real time. We also conduct a gas pipe leakage survey at least once a year and carry out regular trench inspections of our gas pipes and other facilities.

We have been conducting safety and risk management audits of our utility JV partners once every two years since 2006. Moreover, the general managers of each JV conduct a safety inspection of their operational gas networks every month to identify and address any issues that may arise. Our annual large-scale regional safety inspection, led by our Managing Director, shows our commitment to maintaining a high safety standard. In 2019, the inspection was held in the northern region in mainland China.

In our New Energy business, we conduct annual PSM audits of our chemical plants. The audit covers 14 key process safety elements, which are the major tools for monitoring the PSM level of our chemical plants. We also conduct safety audits of our gas refilling stations.

## Emergency and Crisis Management

We have developed a three-tiered approach for handling crises, which enables us to respond to and recover from any emergency situation quickly and effectively.



Regular training exercises and drills are conducted for staff at various Towngas locations, including our gas production plants, gas refilling stations and headquarters in North Point. We also conduct regular table-top exercises to further enhance our management team's ability to handle emergency situations.

## Community and Industrial Relations

As a leading energy supplier in Hong Kong and mainland China, we connect with outside community groups as part of our advocacy of health and safety. Additionally, as a public utility, we work closely with the government authorities to formulate strategic plans, such as a facilities utilisation framework and preventive maintenance index, to ensure optimal safety.

In order to maintain a high standard of safety not just within Towngas but across the industry, we share our safety experience and standards with corporations, contractors and professional organisations.

In mainland China, we have taken part in the compilation and revision of relevant standards and specifications on both the national and industry levels. We have also shared our experiences to promote the development of the gas industry in China.



## Progress Areas

### Safety Performance

#### Hong Kong

In Hong Kong, rigorous trench inspections and leakage surveys are carried out in a bid to reduce gas incidents. In 2019, we set a target of not greater than 0.16 incidents per 10 km of gas pipes, which was successfully achieved.

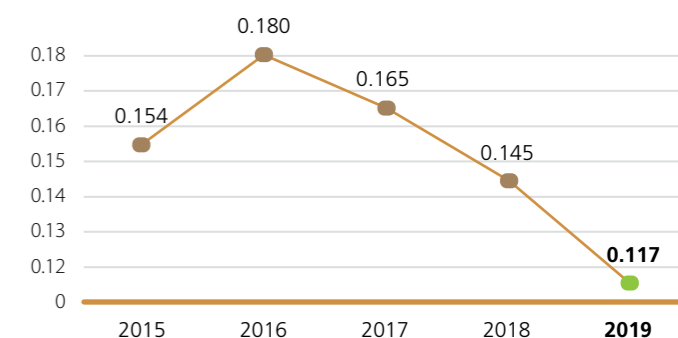


**6,660 km** of pipeline surveyed

**149,630** trench inspections at **8,601** active sites



#### Gas Incidents Reported by the Public per 10 km of Gas Pipes



Towngas has also been able to keep third party damage to a relatively low level. The number of third party damage incidents in 2019 was 10.

In 2019, we decommissioned 15 km of aged metal pipes and replaced them with polyethylene (PE) pipes. This greatly reduced the risk of mechanical joint leakage and corrosion. We have also been proactive in replacing over 100 corroded risers, an exercise we expect to complete by 2021. By carrying out these preventive measures, we are able to ensure a safer and more reliable supply network.

#### Mainland Utilities

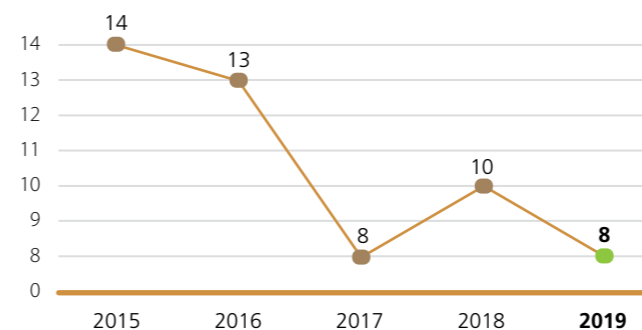
In past years, the scores of our JVs have been steadily improving since the implementation of our audits.

As a result of our efforts, serious gas-related incidents in mainland China have decreased by 43% in the past five years.



**56** safety and risk management audits

#### Serious Gas-related Incidents



In order to further reduce gas-related accidents, we issued a set of guidelines on production safety. The guideline stipulates that the general manager of a JV, as the person responsible for safe production, must conduct safety inspections, and personally supervise the rectification of safety hazards.

As assurance that our JV partners understand the importance of production safety, the Responsibility Documents of Safety Production were signed during the year.





All of ECO's mainland chemical plants in operation conducted PSM audits

12 gas refilling stations carried out safety audits



### New Energy

In 2019, we organised and coordinated regular safety and risk management workshops, during which mainland project companies exchanged ideas on safety management as well as improvements on engineering practices and safety awareness.

As a result of our following best practices in PSM, such as following inherent safety designs, conducting in-depth hazard and operability (HAZOP) studies, and providing comprehensive training, there were no major incidents at ECO's chemical plants in 2019.



### Emergency Preparedness

Table-top exercises were conducted during the year. In Hong Kong, our table-top exercise comprised scenarios involving cybersecurity and political issues based on global concerns and recent public order events. In Shanxi province, we held an integrated emergency exercise at a chemical plant, which comprised both a table-top exercise and fire drill. Both managerial staff and frontline operators took part in the exercise.



### Safer Operations Through Technology

At Towngas, we make extensive use of technology to ensure our facilities are safe and operating properly, in keeping with our philosophy of "Growth = innovation x implementation".

Our advanced Gas Tracker for locating the position and direction of a buried PE gas pipe is one example of how we use technology to improve safety. With this device, we can easily locate an underground PE pipe without excavation—a more efficient and cost-effective method that minimises disturbances and potential hazards to the public. We are also developing the use of artificial intelligence (AI) in our pipeline inspections, as well as identifying faulty installations for contractors to follow up on. This method will be implemented in Hong Kong in 2020.

### Enhancing Industry Standards



As the chairman of the Joint Utilities Safety and Occupational Health Policy Group in 2018/19, we communicated OSH issues to the Government, Occupational Safety and Health Council (OSHC) and fellow utility companies. We also organised a forum on the future of OSH for the industry, during which participants shared their experiences and views on improving OSH performance.

#### Road Safety Promotion

Towngas makes a serious effort to promote safety awareness not just among our own staff but also to the wider public.

In 2019, a fatal accident occurred in Hong Kong where a double-decker bus crashed into a truck that had lowered its tailgate and obscured its signal flashes. Since then, we have started promoting the use of light-emitting diodes (LEDs) for road users. For example, at the OSH Academy of OSHC, we set up an LED tail-lift model. We have also shown the Labour Department and Road Safety Council how LEDs can contribute to safer driving.



06

## PROTECTING THE ENVIRONMENT



### Keeping Our Promises to Stakeholders

We recognise that climate change is one of the greatest challenges faced by the world today. We believe that we can make a difference by addressing climate change issues for the benefit of our stakeholders and future generations.

In our environmental, social and governance (ESG) work, we are studying transition risks and opportunities across our portfolio under various climate change scenarios, according to the recommendations of the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD). What we learn about these risks and opportunities will be integrated into how we address climate change in our strategic planning which, in turn, will allow us to develop businesses that are resilient to the climate-related issues and uncertainties we face.

As part of our contribution to global decarbonisation, we are also reviewing our carbon reduction target and working to establish a medium- to long-term target to further mitigate our carbon emissions.



### Our Management Approach

Our aspiration as a business engaged in the provision of gas and energy related products is to be the greenest company of its kind based in Hong Kong. This is reflected in our commitment to reducing our emissions and environmental footprint to the greatest extent possible, both within our operations and in the way we make our products and services available to customers.

Our **Corporate Health, Safety and Environment (HSE) Policy** outlines the principles of our approach for responsibly managing the environmental impacts arising from our operations. It guides us in our commitment to protecting the environment, using resources efficiently, reducing emissions and waste, and mitigating our impact on biodiversity.

We have also established an ESG Committee, which coordinates and steers our environmental initiatives as well as monitors our environmental performance, with the support of the Environmental Working Committee and Corporate Sustainability Department. In addition, we have 12 Environmental Sub-committees and numerous green ambassadors who support the mobilisation of resources and implementation of our environmental projects, and convey environmental messages to our stakeholders. Details of our HSE management structure are available on [corporate website](#).

Furthermore, we have set up an environmental management system (EMS) covering our operations in Hong Kong as well as those of our joint venture (JV) partners in mainland China. Our gas production facilities in Tai Po have been certified to the ISO 14001 standard since 1999, and our JVs in mainland China are in the process of achieving the same standard.

We also comply with the most stringent regulatory requirements of the markets in which we operate and benchmark our operations against the highest international standards and codes of practice. Every new project we undertake will begin with an environmental impact assessment (EIA), according to the local legal requirements.

We conduct regular audits and inspections of our facilities to confirm compliance with all relevant environmental standards and to identify areas for continual improvement.



## Climate Change and Air Quality

### 2019 Performance Highlights

#### Adapt and Become Resilient to Impacts of Climate Change

- Reviewed climate risks under different scenarios at our headquarters in North Point



- Started a study on climate-related transition risks and opportunities

### Future Actions and Targets



- Advance our climate change risk assessment covering long-term risks and opportunities

- Support the development of carbon trading
- Keep abreast of the latest developments in carbon reduction policies in Hong Kong and mainland China

#### Climate Change Mitigation

- Hong Kong gas production carbon intensity was **0.597** kgCO<sub>2</sub>e/unit of town gas, **↓22%** as compared with 2005

- Installed PV systems at six of our offtake and pigging stations, and continued to work on other premises, expecting to generate approximately **250,000** kWh annually



- Achieve **30%** carbon intensity reduction in our Hong Kong gas production by 2020, as compared with the 2005 baseline
- Establish medium- to long-term carbon reduction targets
- Increase biogas usage for town gas production



### How We Work

## Climate Change Adaptation and Resilience

We commissioned a comprehensive climate change risk assessment in 2015 for our Hong Kong operations that helps us to increase our resilience as the weather becomes more extreme. Since then, we have been continuously reviewing our mitigation measures and making our facilities more resilient to ensure we are fully prepared for emerging risks. What's more, we conducted corporate emergency table-top exercises based on an adverse weather preparedness plan and continue to monitor climate change issues to protect ourselves against possible impacts on our business. The adverse weather preparedness plan is reviewed on a regular basis.

We also visit the project sites of our joint ventures in mainland China to understand the risks associated with the different weather conditions in their respective regions. On occasion, we will discover gaps in a project company's preparedness for severe weather scenarios. In those cases, we will work closely with that company to implement mitigation measures, such as installing floodgates to protect a facility against sea level rises, insulating pipes against freezing temperatures, and providing training in climate change awareness.

## Carbon Management

We are committed to monitoring our direct and indirect greenhouse gas (GHG) emissions and devising strategies to reduce these emissions. We have also established Carbon Inventory Accounting Procedures based on the international **Greenhouse Gas Protocol** measuring tool as well as local guidelines. In Hong Kong, we conduct regular company-wide carbon audits that are aligned with ISO 14064-1.

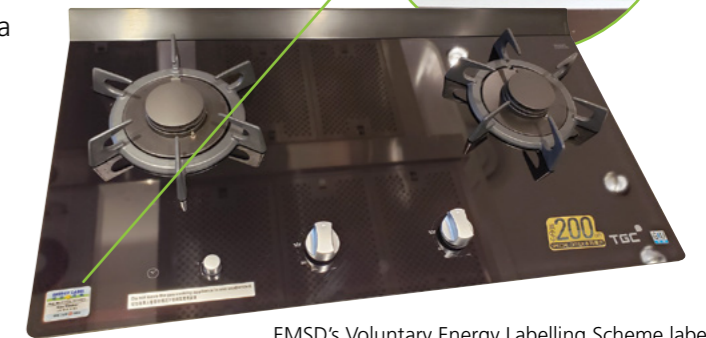
To manage the emissions from our operations, we use low-carbon energy sources such as natural gas and landfill gas, employ more energy-efficient equipment and improve our production processes.

## Support to Customers with Low-carbon Solutions

In addition to reducing GHG emissions from our operations, we take the responsibility of reducing GHG emissions on the customer side so that we can work towards a low-carbon future together.

Towngas assists customers to reduce their GHG emissions and combat climate change by promoting the benefits of clean gas and expanding the distribution of natural gas in mainland China. We also help our commercial and industrial customers to switch from coal/diesel to gas or supply them with landfill gas. Additionally, we develop low-carbon products, ranging from gas appliances to advanced biofuel.

To help our customers conserve town gas, we provide information and energy saving/green cooking tips via bill inserts, newsletters and our **Low Carbon Action!** website.



EMSD's Voluntary Energy Labelling Scheme label



### Progress Areas

## Evaluating Climate Change Risks and Opportunities

We recognise that physical risks, such as temperature and sea level rise, drought, and the increased frequency of extreme weather events could have a negative effect on our operations. Transition risks, including policy changes, reputational impacts, and shifts in market preferences, along with opportunities arising from the development of new technologies, products and services associated with climate change, could also have a significant impact on our business.

Super typhoons, storm surges and heavy rain can cause severe flooding. As our gas production plants and headquarters in Hong Kong are located near the coast, we installed in 2019 floodgates in designated areas such as the switch rooms at our Tai Po Production Plant in preparation for increased risk of flooding. We also conducted a study to review flooding hazards associated with sea level rise in critical facilities, including the switch room and plant room for the emergency generator at our headquarters in North Point.

## Climate-related Financial Disclosure


As mentioned earlier, the TCFD has developed a set of recommendations on voluntary climate-related financial disclosures. In response to stakeholders (including investors) who are becoming increasingly concerned about the impacts of climate change, we are working on ways to better disclose our climate risks and opportunities in line with these recommendations.

In 2019, we began a study on how to align ourselves with the **Recommendations of the TCFD** and carried out a gap analysis to examine Towngas' current practices against these recommendations. A further study on transition risks and opportunities across our portfolio under various scenarios is now under way to determine how resilient our assets and operations are under climate change. The findings of the assessment will be used to develop a plan for mitigating our risks and creating resilience strategies.

Although this study is still in the early stages, we are able to provide an initial summary of our findings so far. More details will be shared in the future.


### Towngas Practices **VS** TCFD Recommendations



- 

**Governance**


  - The Towngas Board of Directors (the Board) has the overall responsibility of overseeing risk management. | [Risk Management](#) |
  - Climate-related issues are integrated into our overall approach to risk management. | [Risk Management](#) |
  - Our Environmental, Social and Governance (ESG) Committee, comprising seven Executive Committee members and two members of senior management, meets biannually to discuss ESG matters, including climate-related issues. Through its Chairman, these matters are reported to the Board. | [ESG Management](#) |

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**Strategy**

  - Climate change poses various risks to our business that can have financial impacts. | [Climate Change Adaptation and Resilience](#) |
  - With climate change also come opportunities to develop low-carbon businesses that meet market demand for energy transition. | [Creating a Low-carbon Future](#) |
  - We make a concerted effort to keep abreast of the latest environmental policies in Hong Kong and mainland China. Failure to comply with legal requirements could subject us to substantial penalties and fines and result in the significant curtailment of our operations.
  - We strive to reduce our GHG emissions and have established carbon reduction targets for our Hong Kong gas production. | [Reducing Emissions in Cities](#) |  
| [Our Carbon Footprint](#) |
  - We have established our first underground natural gas storage facility in Jintan district, Changzhou city, Jiangsu province in mainland China. It was commissioned in 2018, and the construction of phase two is ongoing. The total storage capacity of the Jintan gas storage will be over 1 billion cubic metres and will supplement and regulate gas supply during winter peak demand periods.
  - » Way forward: Conduct another study on the transition risks and opportunities across our portfolio under various climate change scenarios on different timeframes.

- According to our Risk Management Framework, we identify and assess the risks across our businesses. Risks are prioritised.
- We then implement mitigation measures to ensure risks are effectively managed.
- Our management of climate-related risks is integrated into our overall approach to risk management and regularly monitored. | [Risk Management](#) |

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**Metrics and Targets**

  - Historical GHG emissions (Scope 1 and 2) are disclosed.
  - Carbon intensity of town gas production is disclosed and a 2020 carbon reduction target set. | [Our Carbon Footprint](#) |
  - » Way forward: Consider other key metrics to assess climate-related risks and opportunities.

## Reducing Emissions in Cities

Towngas has been using cleaner fuel sources for gas production by switching our production feedstock from coal and heavy oil to naphtha in the 1970s, harnessing landfill gas since 1999, and adopting natural gas in 2006. These have significantly reduced air pollutants and GHG emissions from our gas production in Hong Kong. Natural gas is now our major feedstock and fuel.



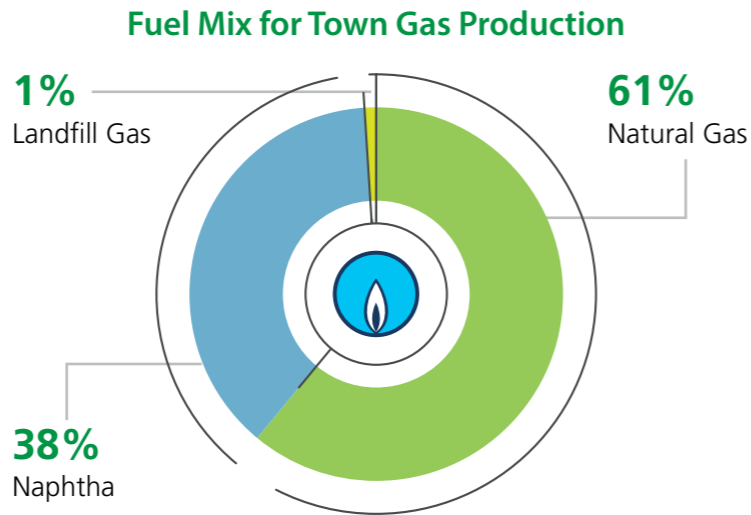
2019 energy saving in gas production plants:

Naphtha saved **14,824 GJ**

Town gas saved **27,215 GJ**

Remarks:

As compared with the data of a reference year before implementing the respective environmental initiative.



Our air emissions primarily result from the combustion of fuels used to generate energy. These emissions, which include nitrogen oxide (NO<sub>x</sub>) and sulphur oxide (SO<sub>x</sub>), are monitored to ensure our plants comply with local regulations. By using more natural gas and landfill gas at our production plant in Tai Po, our emissions have fallen well below the regulatory limits. Air emissions data can be found in [Key Statistics](#).

Towngas is one of the pioneers in the development of renewable energy in Hong Kong and currently uses landfill gas from three sites. In 2019, the amount of landfill gas in our town gas production reached 42,038 GJ, and we are committed to continually increasing the proportion of natural gas/biogas used. For more details on clean gas production at Towngas, please visit our [corporate website](#).

We also support Hong Kong's Feed-in Tariff Scheme, which encourages the adoption of renewable energy such as solar and wind. In 2019, we continued to work on phase I of the installation of photovoltaic (PV) systems at our Tai Po Gas Production Plant, our headquarters in North Point as well as offtakes and pigging stations. When completed in 2020, this project is expected to generate approximately 250,000 kWh of clean energy each year. We are also identifying other premises for phase II of the project.

In mainland China, we have been expanding our city-gas network to replace coal and hence reduce the emissions in cities. In 2019, we served over 29 million customer accounts.



## Our Carbon Footprint

The Group's largest source of carbon emissions is Scope 1 emissions from fuel consumption in our production processes.

Group GHG Emissions		
	Scope 1 (tCO <sub>2</sub> e)	Scope 2 (tCO <sub>2</sub> e)
<b>2019</b>	<b>843,000</b>	<b>596,000</b>
2018	807,000	455,000
2017	822,000	423,000
2016	834,000	399,000
2015	898,000	378,000

Remarks:

- Scope 1 – Direct emissions including fuel consumption of production plants, vehicle fleets etc.
- Scope 2 – Electricity consumption of production plants, offices, customer centres, gas refilling stations, data centres, etc.
- Reported GHG emissions data cover Towngas operations within and outside Hong Kong. Data are consolidated on an equity basis.

We have set a reduction target of 30% in the carbon intensity of our Hong Kong gas production for 2020, as compared with the 2005 baseline.

Over the years, we have effectively reduced carbon emissions related to our use of natural gas and landfill gas. In 2018, super typhoon Mangkhut severely damaged our landfill gas collection facilities at the Northeast New Territories Landfill, significantly decreasing landfill gas supply in 2019. As a result, the carbon intensity of our Hong Kong gas production that year was 0.597kg of CO<sub>2</sub>e per unit of town gas (which was higher than the 2018 level), and 22% lower than our 2005 baseline. With the gradual restoration of the facilities at the end of 2019, we will strive to meet our carbon reduction target in 2020.

We are also considering setting medium- to long-term targets for both our Hong Kong and mainland China portfolios.

### Carbon Emissions Per Unit of Town Gas in Hong Kong



## Creating a Low-carbon Future

We have undertaken several projects that are helping to reduce carbon emissions and contribute to a low-carbon future.

Following the success of the Combined Heat and Power Generating System, using landfill gas, at the Alice Ho Miu Ling Nethersole Hospital, we are now planning to extend this system to the expanded North District Hospital to enhance energy efficiency and reduce emissions. We are also promoting the use of desiccant dehumidifiers in hospitals and office buildings to improve indoor air quality and reduce energy consumption by air-conditioners, hence lowering carbon emissions. In 2019, we installed a desiccant dehumidification system at a commercial complex on Middle Road.

With the commissioning of trial production of our food waste processing and utilisation project at Suzhou Industrial Park in mainland China, the biogas produced by the project is being used as renewable energy and injected into the natural gas distribution system after treatment. In 2019, 2 million cubic metres of natural gas was produced, helping to reduce the carbon emissions of our downstream customers.

In addition, we have been developing energy-efficient distributed energy systems (DES) since 2017 and, at our ECO facility in Zhangjiagang city, Jiangsu province, producing advanced biofuel to replace traditional diesel.

Please refer to [Transitioning to a Low-carbon Future](#) for more details.



## Resources Management

### 2019 Performance Highlights

#### Effective Energy Management



- Electrical power consumption at our headquarters in North Point: **↓ 0.46%** compared with 2018

### Future Actions and Targets



- Obtain **ISO 50001** Energy Management System certification and renew the accreditation of BEAM Plus for our headquarters in North Point in 2020

#### Responsible Water Management

- 114,551 m<sup>3</sup>** water was conserved through the reverse osmosis systems at Tai Po Gas Production Plant



- Install the **3<sup>rd</sup> reverse osmosis system** at our Tai Po Gas Production Plant



#### Enhanced Waste Management



- >1,600 tonnes** of metal was recovered under the Used Gas Appliance Recycling Programme



- Review and **reduce plastic consumption** in our operations

- Upcycled scrap PE pipes for **Waste-to-Treasure Solar Powered Hydroponics System**



### How We Work

At Towngas, we recognise the importance of conserving natural resources in our production plants, distribution network and office operations. What's more, we strive to raise staff awareness of our environmental impacts and promote behavioural change through seminars and activities, while also encouraging our contractors, suppliers and customers to do the same. To help our staff improve their environmental awareness and ensure they are taking appropriate actions, we provide them with Green Office Practice Guidelines and carry out internal audits.

Each year, we set aside funds dedicated to our environmental protection initiatives and have set up a Green Creativity Fund to encourage environmental initiatives put forward by our employees.

In mainland China, we have been performing environmental audits of our gas projects since 2011. The audit covers areas such as energy conservation, waste and wastewater management practices as well as noise control measures.

## Energy

We recognise that it is important to make the most efficient use of the energy we consume. Our headquarters in North Point has attained green building standards such as Building Environmental Assessment Method (BEAM) Plus, while our data centres in Hong Kong and mainland China are Leadership in Energy and Environmental Design (LEED) certified.

For our residential customers, we introduce at least one energy-efficient appliance a year to our product range of more than 200 appliance models, all of which are equipped with eco-friendly features designed to save costs and energy. All eligible water heaters and cooking appliances bear the Electrical and Mechanical Services Department's Voluntary Energy Labelling Scheme label in Hong Kong, to assist end users in making a smart buying decision.

## Water and Effluents

With water shortages becoming a major issue worldwide, our stakeholders have indicated that this is a concern for them.

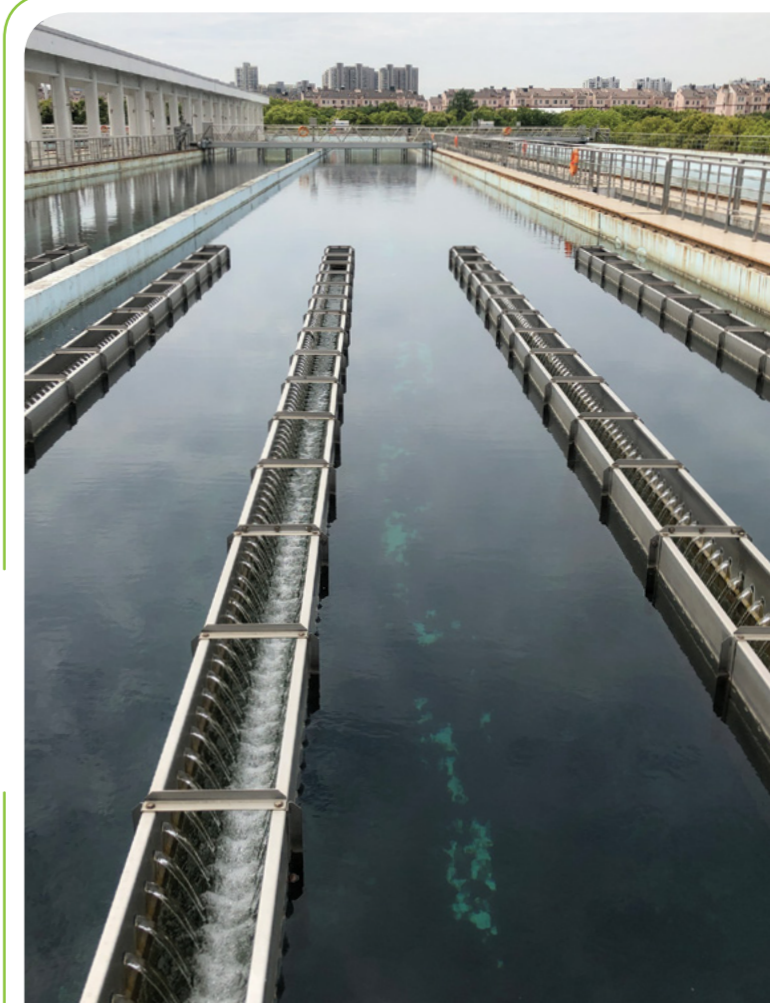
Water is consumed in our production operations as a raw material and for purposes such as cooling and heating, as well as for domestic use in our offices, customer centres and natural gas stations. We withdraw water mainly from local municipal water suppliers in areas of our operations. Surface water is also used in our water supply business in mainland China.

Water is discharged to municipal wastewater treatment plants or into the sea after it has been treated. Some of the water we consume is also recycled and reused.

Equally important is our focus on conserving water. At our production plants, we have improved our production processes with new technologies and processes that enable us to recycle or save more of the water we use. Although our offices and customer centres consume only small amounts of water, we have installed water-saving devices such as dual flush toilets and automatic faucets.

In our mainland China water supply and wastewater treatment business, Hua Yan Water, we are particularly concerned about the problem of leakage. To improve the efficiency and effectiveness of our water supply service, we have strengthened our leakage management and control through surveys and inspections of the pipe network. We also reclaim water from our wastewater treatment plants for our internal use (including equipment washing and deodourising). For an international electronics plant at Suzhou Industrial Park, we treat and recycle high-concentration industrial wastewater. All effluent and discharge from this project is treated in accordance with local regulations.

Hua Yan Water also hosts various activities, such as organising tours of its water plant facilities for students, to educate the public on the value of water resources and the importance of water conservation.



## Waste

Our waste management approach is underpinned by the “5R” principle of Replace, Reduce, Reuse, Recover and Recycle. This means minimising waste generated not only within our operations but also for our customers.

In Hong Kong, the excavated materials and waste generated during construction and pipeline works are managed through the Government-regulated trip ticket system for proper disposal. We also use trenchless technology in our pipeline work as this significantly reduces the amount of waste generated.

Hazardous waste such as metal chemical drums, plastic chemical drums, spent catalysts and used polyethylene (PE) pipes are either recycled or reused. All chemical waste is handled by a waste collector licensed by the Environmental Protection Department and in compliance with the Waste Disposal Ordinance.

### Waste Reduction for Customers

We understand that placing the burden of recycling customer waste entirely on the consumer is not an effective strategy. We have therefore been offering a Used Gas Appliance Recycling Programme since 2003 as a way of reducing waste for our customers. In this programme, unwanted appliances are collected and sold to recycling contractors, with all proceeds going to support environmental activities carried out within the Company, by our contractors and with other green partners.

As Towngas has more than 1.9 million customers in Hong Kong, our gas bills use a significant amount of paper. To reduce paper consumption, we have been encouraging customers to switch to our eBilling service.

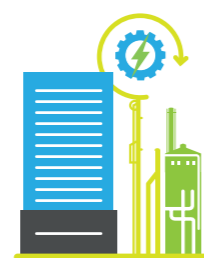
## Progress Areas

### Effective Energy Management

We have implemented a cloud-based energy management system that allows us to monitor and analyse our power consumption automatically in Hong Kong. Based on the data it generates, we are able to visualise usage patterns and develop a robust energy saving plan.

To achieve greater energy savings at our headquarters in North Point, in October 2019 we installed a Smart Fan Coil Unit System and Smart Lighting System with more energy-efficient equipment on one of our floors, which reduced electricity consumption of these systems by over 30% from 2018. Given the success of this trial, we are considering the adoption of these systems on other floors of the building.

In 2020, we target to achieve ISO 50001 energy management system certification as well as renew BEAM Plus Existing Buildings to the new version for our headquarters.



Electricity saved in 2019  
at Towngas headquarters and  
Ma Tau Kok office:  
**20,503 GJ**

Remark: As compared with the data of a reference year before implementing the respective environmental initiative.

## Responsible Water Management

At our Tai Po Gas Production Plant, we use reverse osmosis systems that helped us to conserve 114,551 cubic metres of water in 2019. Based on the positive results achieved, we are now replacing the remaining water treatment system with the latest reverse osmosis technology to further reduce the effluent generated. Completion of this project is targeted for 2020.

In mainland China, we have adopted the Zero Liquid Discharge system at our hydro-treated vegetable oil (HVO) production facility in Zhangjiagang, which processes all effluent so that water can be reused and recycled.

All effluent from our town gas production plants is processed in compliance with existing regulatory discharge standards. In 2019, there were no reportable effluent spills in any of our operations.

### Enhanced Waste Management

Towngas has received a Wastewi\$e Certificate at the Excellence Level for 18 consecutive years, with more than 30 waste reduction and recycling targets completed to date.

We have undertaken more than 20 waste reuse/recycling programmes and encouraged our staff to use recyclables and collect waste. In addition to regular recycling, we organised ‘occasion’ recycling campaigns, such as a used ties and fruit baskets campaign in 2019, to recycle special items. What’s more, we organised a DIY beeswax food wrap workshop during the year to promote reduced plastic use.

We also take special consideration when handling hazardous waste. With the opening of the Hong Kong Battery Recycling Centre in 2019, we collected over 20 tonnes of waste lead acid batteries for local recycling.

On the customer side, in 2019 we recovered over 1,600 tonnes of metal from used gas appliances.

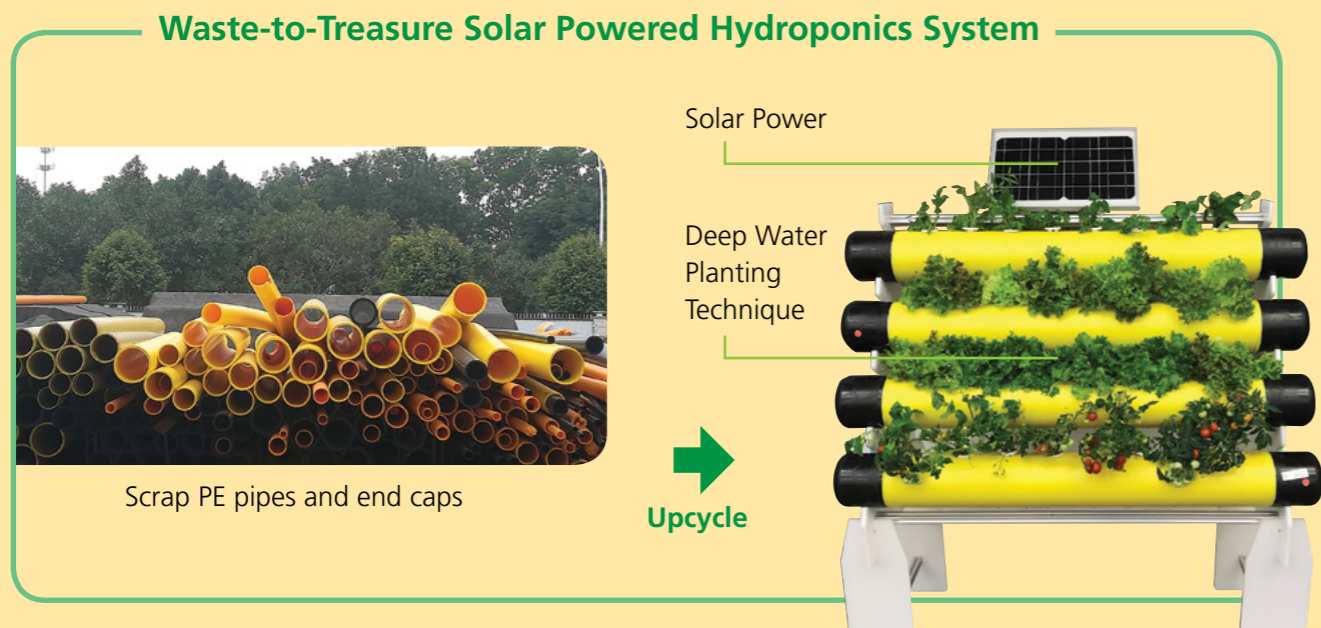
In our ongoing promotion of eBilling as a means of reducing paper waste, we carried out various campaigns in 2019, including a donation of HK\$20 to a green group chosen by applicants and a monthly gas charge rebate for each new Towngas eBilling application. We are also studying other ways to reduce the use of paper in our billing.



## Waste-to-Treasure Solar Powered Hydroponics System

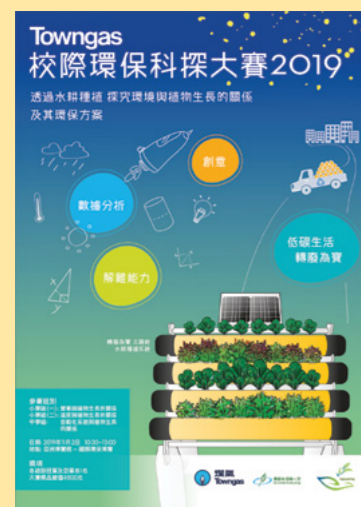
At Towngas, we treat waste as a valuable resource and are constantly looking for innovative ways to use materials that would otherwise end up in the landfill.

One example is the solar powered hydroponics system we developed by upcycling scrap PE pipes and fittings produced during gas pipeline works. The resulting system, which is based on a deep-water planting technique, is equipped with a solar panel that generates sufficient power for its daily operation, without the need for an external power source.



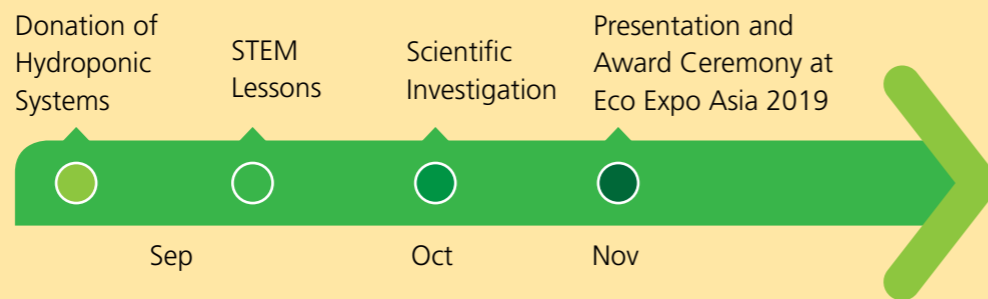
Twelve of these systems were donated to primary and secondary schools for the Towngas Inter-school Environmental Scientific Investigation Competition 2019. In doing so, we aimed to cultivate students' interest in STEM (Science, Technology, Engineering, and Mathematics) subjects and to promote environmental awareness among young people.

### Towngas Inter-school Environmental Scientific Investigation Competition 2019

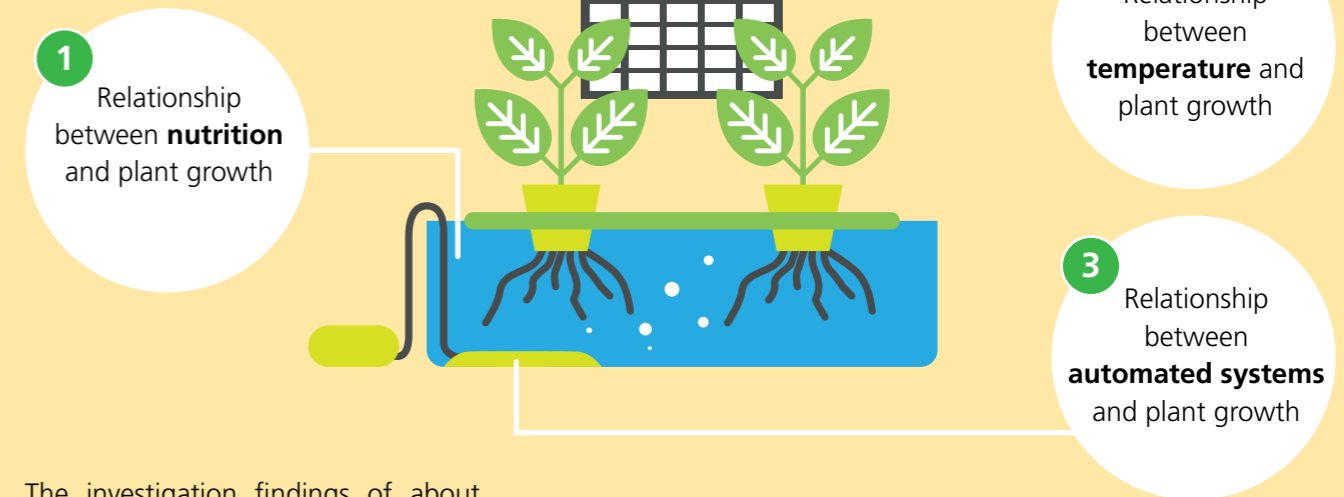


#### Objectives of the competition

- Develop students' data analysis, creativity and problem-solving skills
- Improve students' awareness of environmental protection, including turning waste into treasure, and climate change



Three topics were covered:



The investigation findings of about 60 students were presented on stage to judges and members of the public at Eco Expo Asia 2019. Students displayed their creativity and problem-solving skills during the competition, proving that the younger generation is capable of coming up with fresh ideas and contributing to a low-carbon future.





## Biodiversity



### How We Work

We understand that our gas processing and distribution operations can disturb the land and wildlife habitats. Therefore, mitigating our impact on biodiversity has become a critical feature of our environmental management approach.

The way we plan for biodiversity mitigation and enhancement is based on four principles:



#### Avoid Areas Rich in Biodiversity

We avoid areas rich in biodiversity in the planning stage of our projects. We carry out site-specific EIAs in accordance with local governmental requirements to address the impact of development on wildlife and ecosystems.

#### Mitigate Our Impact through Innovation

We take preventive and corrective measures to minimise the possible impact of our works, including construction works, effluent discharges, and pipeline maintenance, on habitats and species of flora and fauna.



#### Use Mitigation and Offset Measures during Construction

We implement a variety of mitigation and offset measures for our construction activities, which help to reduce pollution and the loss of topsoil.

We coordinate with local government bodies to preserve the greenery around our industrial sites and stations.

#### Promote Biodiversity Awareness

We organise activities, such as organic farming and eco-tours, for our employees and customers.



## Progress Areas

Our biodiversity efforts across the Group have been ongoing:

- To minimise the need for digging up public roads, we have adopted:
  - Trenchless technology for pipeline construction and maintenance works to reduce our environmental impact caused by excavation.
  - Glass-In-Gas (GIG) and Glass-Along-Gas (GAG) technologies to install optical fibres within gas pipes or lay telecommunications cables simultaneously with gas pipes.
- To prevent gas leakage, we use specialised technology and our own pipeworks and fittings. As a result, our gas network accident rate is among the lowest in the world.
- We follow environmentally responsible forest management practices by using Forest Stewardship Council (FSC) approved timber.
- We sponsor customers and employees to participate in The Green Earth's five-year Plantation Enrichment Project, which aims at increasing biodiversity in country parks. We also have an organic farm in Yuen Long as well as a rooftop organic farm at our headquarters in North Point to promote the biodiversity benefits of organic farming. Other initiatives to promote biodiversity awareness include eco tours to the Fung Yuen Butterfly Reserve and a seminar on marine biodiversity and conservation.



07

## CONTRIBUTING TO STAKEHOLDERS



### Keeping Our Promises to Stakeholders

In response to the concerns of our stakeholders, we have been expanding our recruitment practices and building greater awareness of our brand among the young people. We have also been creating an upward mobility pathway for our apprentices that would lead from a certificate to a professional or higher diploma and, ultimately, a recognised degree programme. By establishing such a clear pathway, our younger staff would be able to see a way forward in their careers at Towngas, particularly in terms of career and promotion opportunities.

As many in our workforce have requested more flexible working hours, we are also working on a policy under which they may arrange their work hours in a way that allows them to attend to personal matters.

For our customers, partners and suppliers, we have put more emphasis on enhancing and streamlining measures to protect their data and privacy in line with our corporate governance responsibilities and accountability to stakeholders.



### Our Management Approach

As a socially responsible company, we believe in creating value for our stakeholders.

In our operations, we are committed to developing a robust and resilient workforce that innovates, leads and learns. Our aim is to provide employees with a fulfilling career in an inclusive working environment.

We also place great importance on satisfying customers by treating them with respect and care. In the communities we serve, we contribute to programmes that enhance quality of life, protect the environment and support the aspirations of future generations. Additionally, we are committed to building long-term business relationships with partners and suppliers for our mutual benefit and prosperity.

All human resources matters are overseen by our Corporate Human Resources Department and handled according to the Towngas Human Resources Policy Manual and Employee Handbook. We comply with local laws and regulations in relation to recruitment and promotion, compensation and dismissal, work hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.

Our **Code of Conduct** outlines the expectations we have of our people, their responsibilities and all relevant policies and procedures our employees should comply with in their everyday duties, such as following ethical business practices, promoting equal opportunities and eliminating discrimination. The Code also sets out our responsibilities to provide customers with a safe, reliable supply of energy and caring, competent and efficient service. Any employee in violation of the Towngas Code of Conduct, Equal Opportunities Policy or relevant ordinances will be subject to disciplinary action.

To protect customer data, we have a **Privacy Policy Statement** that sets out our standards for handling customer information.

To make the greatest possible impact, we work closely with government officials in different regions and non-governmental organisations (NGOs) to support programmes that meet the needs of local communities and create long-lasting value for the society.

Our **Towngas Purchasing Policy** ensures that our suppliers can participate in a fair and competitive market. We also have a **Towngas Sustainable Purchasing Policy**, which spells out environmental considerations in every purchasing decision, including the process of services procurement and product specifications. The **CSR Code of Practice for Suppliers** sets out the Corporate Social Responsibility (CSR) requirements every supplier must follow with regard to business ethics, workplace operations, marketplace activities, community contact and environmental undertakings.



## Our Workforce

2019 Performance Highlights	Future Actions and Targets
<b>Attract and Retain Staff</b>	
<ul style="list-style-type: none"> <li>Completed technicians' <b>remuneration packages and promotion path review</b></li> <li>Total new recruits: <b>250</b> (Hong Kong) <b>2,736</b> (outside Hong Kong)</li> </ul>	<ul style="list-style-type: none"> <li>Launch a new series of <b>recruitment videos</b> to strengthen our employer brand, targeting at customer-facing positions</li> <li>Continue to broaden/expand our recruitment practices to create a <b>diverse talent pool</b></li> </ul>
<b>Foster Employee Development</b>	
<ul style="list-style-type: none"> <li>Average training hours per employee: <b>22.4</b> (Hong Kong)</li> <li>Employed <b>VR technology</b> in employee training</li> </ul>	<ul style="list-style-type: none"> <li>Introduce an <b>electronic learning</b> management system to better track staff learning and performance progress; expand eLearning</li> <li>Revamp our <b>training centre</b> in Hong Kong with more training facilities to meet growing training needs</li> <li>Develop <b>new training programmes</b> for business transformation and succession planning</li> </ul>

## How We Work

We take a systematic approach on the management of our people that spans the entire employee lifecycle. Further details on how we manage our talent are provided later in this chapter.



## Attracting and Retaining Staff

In our efforts to be an attractive employer, we have developed a broad range of responsible employment practices, including family-friendly policies and competitive remuneration packages well above the regulatory minimum.

Benefits for full-time employees include maternity and paternity leave, medical and dental insurance, group life insurance, gas allowances, education allowances and performance-based bonuses in Hong Kong. We also provide a maternity allowance and counselling service for managing emotional issues. Subject to eligibility, the children of our staff can take advantage of an education allowance. To help our staff balance their work and family responsibilities, we have established a variety of family-friendly practices. These include special provisions for taking time off for family reasons, such as marriage, compassionate and casual leaves.

Our remuneration packages are periodically reviewed and adjusted according to trends in the labour market.

The retirement benefits we offer include the defined contribution schemes and Mandatory Provident Fund schemes in Hong Kong. In mainland China, staff participate in social security plans organised by the relevant municipal and provincial governments.

To ensure we have a pipeline of skilled and experienced talent for our future growth, we are continuously exploring opportunities to broaden our recruitment channels. In addition to the apprenticeship programmes and graduate recruitment opportunities we offer, we collaborate with educational institutions to provide training programmes that not only create a pipeline of future workers for Towngas, but also contribute to the advancement of the gas industry as a whole.

## Employer-employee Relations

We believe a harmonious work environment is essential for the success of our Company. This starts with listening closely to our employees and responding to their concerns.

We guarantee freedom of association for our employees, who may join the organisations and professional bodies of their choice. Members of associations are also allowed to participate in association activities during working hours, reflecting the high degree of freedom they enjoy at Towngas.

Although there is no regulatory requirement in Hong Kong with regard to collective bargaining, we consult our staff on a range of employment issues through a variety of internal communication channels. We also send a formal notice to all employees when significant operational changes are about to be implemented, at least two to four weeks ahead of time. In mainland China, we comply with applicable legal obligations concerning freedom of association and collective bargaining. While the labour unions of our joint ventures have not entered into any collective bargaining agreements, we continue to maintain open communication with union representatives on staff-related matters.

## Employee Engagement and Communication

In order to build a culture of open communication, we listen to our employees to understand their views and carefully consider their opinions. Communication channels include suggestion boxes, intranet, employee surveys, focus groups and social media, as well as a dedicated channel for communicating directly with our Managing Director.

To keep our employees fully informed about the future of the Company and our strategic direction, we established the Strategy Ambassador Club to discuss Towngas' ongoing strategies and to listen to the opinions of our staff. What's more, over 80 staff representatives from across Towngas, including frontline employees and managers, meet regularly in seminars, workshops and on business tours to keep our workforce up-to-date on business developments and new opportunities for the Company.

## Training and Development

As we believe that our long-term success depends on developing the competencies of our people, we offer them the support and resources they need to achieve their career goals.

Towngas has its own professional training arrangements: the Towngas Engineering Academy (TEA) in Hong Kong, and five training bases located in strategic regions of mainland China. The Academy and training bases provide a wide variety of training and development programmes that help our staff and contractors of our Group to enhance their professional expertise and managerial competency, while also preparing young people to pursue a career in the gas industry.



Training sessions cover technical and engineering subjects as well as non-technical ones such as corporate culture, leadership development and interpersonal skills. Learning and development is delivered via multiple channels, including an eLearning platform.

Our employees are also encouraged to supplement their training through in-house programmes, external courses, seminars and conferences, according to identified training needs. What's more, they may apply for subsidies to take educational courses, academic programmes and other external development opportunities.

## Diversity, Equal Opportunity and Non-discrimination

All existing and prospective staff are treated equitably and fairly with regard to remuneration, benefits, promotion and compensation. We have absolutely no tolerance for employment discrimination on the basis of age, gender, sexual orientation, race, colour, religious or political beliefs, marital status, ethnic background or social origin.

We value diversity within our ranks and make a strong effort to attract women to our industry and to develop and retain them. Additionally, we are proactive with respect to providing employment opportunities and support at work for people with disabilities and older workers.

In support of a harmonious workplace, we have established procedures and a fair and independent process for investigating complaints about discrimination, with assurance that the confidentiality of all parties will be respected.

## Progress Areas

### Talent Attraction and Retention

We continued to strengthen our employer brand with the aim of becoming the employer of choice for people who wish to develop a career in our diversified business portfolio.

TEA is one of the founding members of the Corporate Tech Academy Network (CTAN), which was formed by well-established corporate academies in Hong Kong aiming to promote Vocational and Professional Education and Training (VPET). The objective of VPET is to develop a skilled and professional/technical workforce and support a sustainable, life-long learning culture among young people, which is seen to be a pressing issue in light of Hong Kong's ageing population.

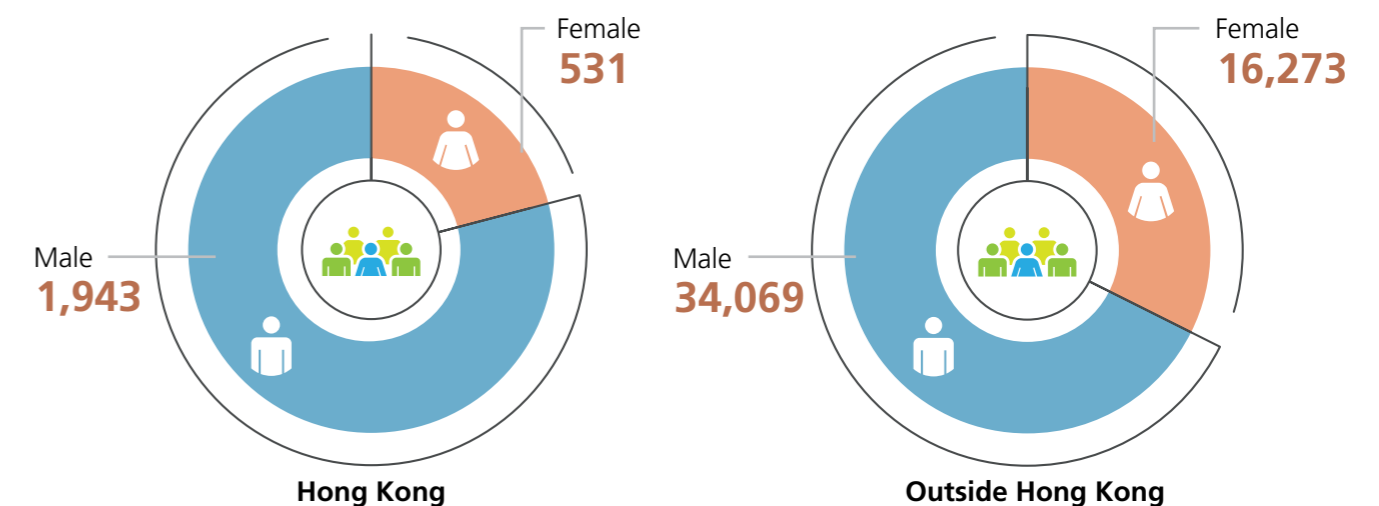


**In 2019**, we enhanced our paid annual leave and maternity leave benefits as well as gas allowance scheme.

In 2018, we launched a gas engineering elective course through collaboration with the School of Energy and Environment of City University of Hong Kong, the first-of-its-kind in Hong Kong. It is held once every two years with a second intake scheduled for 2020. Another course at the university level—an elective course in gas engineering incorporated in a master's degree in Mechanical Engineering— will be launched in 2020 at The University of Hong Kong. We also partnered with the Vocational Training Council (VTC) to offer Hong Kong's first Professional Diploma course in Gas Engineering, which graduated 31 students in its initial batch this year. In addition to these programmes, we are working with educational institutes to help students at a Qualifications Framework Level 4 move on to a degree course.

### Employee Distribution, New Recruitment and Turnover Rate

#### Number of Employees



	Hong Kong	Outside Hong Kong
<b>Total New Recruitment</b>	250	2,736
<b>Average Turnover Rate</b>	5.7%	2.8%

## Developing a Sustainable Workforce

### Student Engagement Activities

To meet the challenges of an ageing society and our business expansion, we are focusing on raising young people's awareness of the gas industry and building the Towngas brand in order to attract potential recruits.

#### Awareness Building among Secondary School Students



Towngas launched the Career in a Nutshell programme to bridge the gap between study and work. The programme offers a series of industry and career related activities, including job tasting, job shadowing, site visits to Towngas and career talks. In the 2018/19 academic year, 38 students were selected from three schools for this programme. Thanks to the positive feedback on the first-year programme, 90 students from nine schools will take part in the second-year edition.

Club Younggas was established in 2019 for Career in a Nutshell programme alumni. The purpose of this group is to sustain and spread the influence of Towngas among the young generation. Activities are focused primarily on sharing career information and development of in-depth gas-related knowledge and skills.

#### Internship Opportunities for University Students



**61 internships** were filled in 2019 in **Hong Kong**

- Interns were assigned specific topics (such as Smart Kitchen) in a group project to learn more about Towngas



**22 internships** were offered to our **mainland operations**

- Operation Zhang Qian by the Maritime Silk Road Society
- Government's Scheme on Corporate Summer Internship on the Mainland and Overseas. Five students were recruited as full-time employees of Towngas after graduation



### Retaining Our Technicians

As the turnover rate of our technicians is high, we have been making our employment package more competitive and providing greater support to their career development.

#### Career Advancement



- Reviewed the **hierarchy structure** of technician promotion and added one more career step between junior technicians and senior technicians, along with a review of the salary package

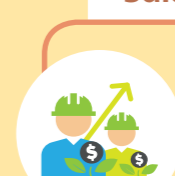


- Launched a **technical path** and a **supervisory path** for eligible technicians to be promoted based on their preferred career path

#### Training Programme



- Introduced in 2017, the **Network Supervisor Trainee Programme** aims to prepare fitters for a career as a network supervisor. Four staff members graduated from the programme in 2019 and were promoted to Assistant Supervisor. We are planning for a second intake in 2020



#### Salary Review

- Conducted a **detailed benchmarking survey** for technical positions, with necessary actions taken during salary review cycles in 2018 and 2019

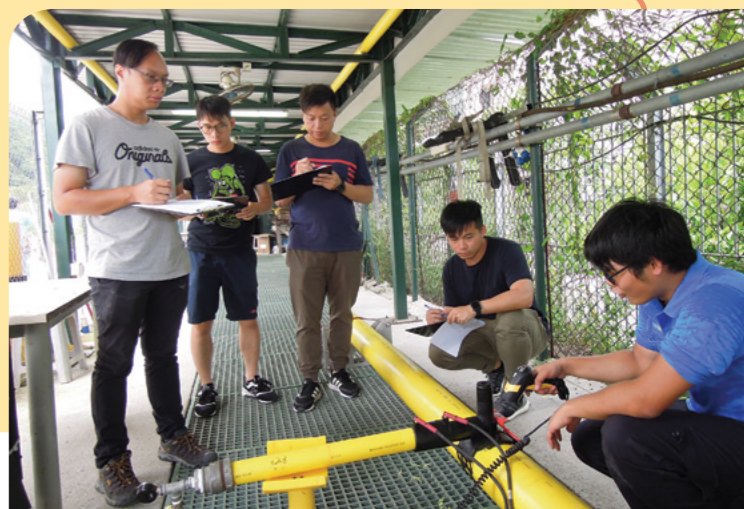
#### Support for Ageing Technicians



- Exempted older technicians from working at height
- Assigned well-experienced technicians to coach apprentices
- Introduced automation technologies to reduce workload



- Discussed the launch of a **Workplace Learning and Assessment** programme that allows our apprentices to use practices acquired at Towngas towards reduced classroom training hours at VTC



## New and Updated Training Approaches

In 2019, we continued to identify our staff and contractors' training needs and provided updated programmes, including training on smart meters, to help them understand the latest technologies. We also implemented virtual reality (VR) training, which is safer, more efficient and cost effective than traditional training methods. This form of training helps to reinforce and revalidate workforce skills in areas such as Regular Safety Inspections and Polyethylene Electrofusion Jointing.

In mainland China, we will introduce new training approaches that have already been implemented in Hong Kong such as the use of VR to help technicians visualise their work duties in classrooms.

For a more systematic learning approach, we will launch an electronic learning management system, the Towngas Smart Learning System, in 2020. This system is a cloud-based one-stop platform for all learning activities, including training nominations, registration, record keeping and eLearning.

We will also continue to explore and develop different methods of eLearning.

Training Hours in 2019 (Hong Kong)	
Total Hours	65,679
Average Hours per Male Staff	25.6
Average Hours per Female Staff	12.3

### Key Training Projects



**Continuing Professional Development (CPD) Seminars**

To sustain and enhance the competencies of our staff and help them meet changing needs.

**17** CPD seminars with **1,434** training hours organised in 2019.



**Career Advancement Programmes**

These 18-month customised training programmes help fast track personal growth and build a leadership talent pool. Employees with high potential will be selected to join this programme.

**Group 1:** Staff with **over 10 years** of experience

- Towngas Leadership Competence Accelerated Programme (TLC+ Programme)
- Launched in 2008
- Fourth batch of 21 staff admitted in 2019

**Group 2:** Staff with **5–10 years** of experience

- Young Towngas Leadership Competence Accelerated Programme (Young TLC+ Programme)
- Launched in 2017
- First batch of 18 staff graduated in 2019

### MasterCraft Culture



To reinforce and further improve our high standards of craftsmanship, we have been promoting MasterCraft Culture since 2016 in order to promote craftsmanship among our technicians.

In 2019, MasterCraft sharing workshops for mainland JV representatives were conducted in Suzhou and Hangzhou cities. Regional activity reports on MasterCraft were released to JVs throughout the year.

## Diversifying Employment

We ensure equal opportunities, diversity in the workplace, anti-discrimination and the fair treatment of all staff. In 2019, no incidents of discrimination were reported at Towngas.

### Empowering Women

Due to the nature of our business, our workforce has traditionally tilted towards male employees. We are attempting to redress this imbalance by taking steps to attract more women to our industry. Following the recruitment of our first female technician in 2017, we have been making a strong effort to hire, develop and retain women within our ranks.



Male : Female  
**3.7 : 1**  
(Hong Kong)

**2.1 : 1**  
(Outside Hong Kong)

### Hiring the Disabled

To make our workplace more inclusive, we seek to employ the disabled. Facilities for people with disabilities include automatic doors, adjustable office desks and toilets for wheelchair users are in place. Specialised emergency evacuation procedures have also been implemented, including improvements to the fire alarm system such as the addition of flashing lights for the hearing impaired.



**13** people with disabilities hired

### Rehiring Retired Employees/Hiring Older Workers

Older workers have knowledge and skills that are valuable to Towngas.

We identify potential employees before their retirement and ask if they are willing to work past retirement age.

We also support elderly-related programmes in Hong Kong and participated in the Elderly and Middle-aged Job Fair organised by the Labour Department.



Recruited one **station operator** for the ECO LPG station, and offered a **part-time cooking assistant** position at the Towngas Cooking Centre to a candidate who had completed the Employee Retraining Board's Post-50 Internship Programme.

## Customers

### 2019 Performance Highlights

#### Refining the Customer Experience

- 
 Implemented a **mandatory Privacy Impact Assessment** to identify any potential privacy risks before launching new projects or processes

- Developed **Cybersecurity Incident Response Playbooks**


- Service quality efficiency: **8.95\*** **Exceeded target**


- Courteous and friendly attitude: **8.93\*** **Exceeded target**



\*Our target was to exceed a score of 8 out of 10

- 
 • **5,924** customer compliments received
- **7** customer complaints received

### Future Actions and Targets

- Further develop the existing **privacy management** programme in line with our corporate governance responsibilities and accountability to stakeholders
 

- 
 • Build on policies and processes to enhance and streamline **data protection** measures

- Explore the needs of our customers and **launch new products and methods**, such as developing more energy-efficient steaming appliances and wok ranges, as well as smart appliances with remote and safety monitoring functions
 

## How We Work

### Customer Privacy and Cybersecurity

At Towngas, we handle a substantial amount of personal information about our customers. We recognise the importance of customer privacy and take every step necessary to protect their data.

The Company's Data Privacy Standing Committee reviews strategies for handling personal data and, together with the Data Privacy Departmental Committee and a Data Protection Officer, deals with personal data issues. Every department is required to make a declaration to the Company about any data protection matters that may have arisen during the year.

Moreover, the Data Privacy Standing Committee focuses on managing potential data breaches. If a data breach does occur, the Committee will make an interim assessment on the risk of harm and decide whether the incident will be escalated to top management for their attention. The Committee will also suggest solutions for resolving the incident.

As data leakage incidents and vulnerabilities are on the increase worldwide, and with more information being stored on electronic devices and online, cybersecurity has become a key concern for stakeholders. To mitigate the risks of data leaks and maintain the trust of our customers, we have made it possible for data contained in all mobile devices carried by our gas technicians and other frontline staff to be remotely wiped if a device is lost.

We also isolate sensitive information such as Hong Kong identity card numbers from our customer relationship management system in order to minimise the possibility of hacking incidents. To guard against cyberattacks, we have commissioned a third party consultant to monitor cyber incidents around the clock. In the event of a suspected cyberattack, our Cyber Security Committee will trigger the incident response process, contain the data leakage and then contact the Cyber Security Centre of the Hong Kong Police Force and other security experts. We also conduct regular phishing tests.

The key to cybersecurity is our employees. If our employees are careless, mishandle customer information or are unaware of cybersecurity risks, the likelihood of a customer information leakage incident can be high. To avert this possibility, we have undertaken various initiatives, including seminar training, information security tips in emails and an annual Information Security Week, to keep employees up to date on personal data protection matters.

### Quality Management and Customer Service

Our Superior Quality Service (SQS) programme has helped us in building our customer-centric culture and sparking innovative design ideas across our operations in Hong Kong and mainland China. Implemented in 1992, the SQS Programme is held under a different theme each year to encourage staff to initiate new projects that help to improve our operations, save costs or generate new revenue.

We also have a Towngas Service Pledge as part of our commitment to providing a safe and reliable supply of gas as well as caring, competent and efficient service to our customers. To ensure our customers are receiving the highest standard of service, we strive to continue improving our service and to set higher targets.

In addition, we organise various training exercises and activities in customer service with the aim of having employees drive business growth.



## Responsible Communication

We make use of a variety of communication channels so that customers can access information on our products and services in a timely and efficient manner. These channels also enable us to collect customer feedback and understand their needs.



### Online Platforms



### Customer Centres



### 24-hour Customer Service Hotline

Through these channels, customers can make enquiries, manage their accounts and make maintenance and installation appointments.



### Customer Satisfaction Surveys

Conducted bi-monthly by an independent research company, with low score cases followed up on to ensure remedial actions are taken



### Customer Surveys and Focus Groups

To obtain customers' opinions on new products or service requirements



### Customer Focus Team

Visits to housing estates to collect customer comments and handle any potential issues such as gas safety, customer services, bill payments and gas appliances

More and more customers are becoming aware of the positive and negative environmental and social impacts of the products and services they consume. For this reason, we make every effort to ensure our marketing materials are accurate and based on substantiated information. We also follow fair and responsible communication practices and remain committed to ensuring that our marketing and communication materials comply with all relevant government regulations and industry guidelines.

In addition to our marketing materials, customers can also access information on Towngas' products and services through our websites, leaflets, social media platforms, and other publications.



## Progress Areas

### Improving Our Customer Service

Our SQS programme continues to be a highlight of our corporate philosophy of "Growth = innovation x implementation". Over the past 27 years, our employees completed over 1,700 SQS projects, which have helped to raise customer satisfaction levels and realised a tangible benefit of approximately HK\$560 million.

In 2019, we once again held the SQS Best Team Competition - Cup Champion Competition. One of the winning entries was the Safety Net project, in which a working platform was enhanced by adding an adjustable safety net. This modification has helped our maintenance staff to service the water heaters installed on the ceiling at balconies more safely.

In our Towngas Service Pledge, we set quantitative targets across six key performance areas, which are updated annually.

### 2019 Towngas Service Pledge : Targets and Results

#### Reliability



Uninterrupted gas supply **over 99.99%:**  
**99.99% Achieved**

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

**100% Achieved**



Restoration of gas supply within **12 hours:**  
**99.98% Achieved**

#### Safety

Emergency teams arrive within **25 minutes:**  
Arrived in **21.52 minutes** on average

**Exceeded target**

#### Appointments

Availability of maintenance and installation services within **2 working days:**  
**1.15 working days** Achieved

#### Speed and Convenience

Customer Service Hotline:  
Calls answered within **4 rings** **96.66%** Achieved

Connect or disconnect gas supply within **1 working day:**  
**100% Achieved**

Deposit refunded at Customer Centres: **2 hours** after disconnection of gas supply#  
**99.75% Achieved**

# To enjoy this service, residential customers are advised to inform us of their requests for refunds at the time of making cap-off service appointment. The maximum refund amount is HK\$2,000.

#### Service Quality

Efficiency: **8.95\*** out of a total score of **10**  
**Exceeded target**

Courteous and friendly attitude: **8.93\*** out of a total score of **10**  
**Exceeded target**

\* Our target was to exceed a score of 8 out of 10

#### Handling Suggestions

Written comments or suggestions: Reply within **3 working days:**  
**100% Achieved**

Resolution, or a statement of how and when the matter will be resolved, within **2 weeks:**  
**100% Achieved**

For more details on our customer service performance results and 2020 targets, please refer to our **corporate website**.

During the year, no incidents were reported of non-compliance with regulations and/or voluntary codes concerning product and service information and labelling, as well as our marketing communications. A total of seven complaints were received and were all resolved.



## Enhancing Privacy Protection

As prevention is always better than cure, our Data Privacy Standing Committee recommends ways to prevent data breaches. In 2019, we formally launched mandatory Privacy Impact Assessments across our operational areas in order to review and identify any potential privacy risks and to make improvements in the early stages of new projects or process changes.

We also worked on the development of a Cybersecurity Incident Response Readiness programme to better manage potential security incidents. The programme helps to identify and prioritise cyber incident scenarios that would have significant impact on our business processes.

Additionally, we produced relevant Incident Response Playbooks describing detailed procedures to follow throughout the incident response lifecycle. They provide actionable and consistent processes under different scenarios for effective action to minimise the impact of specific types of security incidents.

In a table-top exercise designed to simulate a critical data breach in a cyberattack held in 2019, our Corporate Crisis Management Team ensured that our established incident response plan was capable of rapidly identifying and containing a data leakage incident and restoring normal operation.

In 2019, Towngas complied with all regulatory requirements and received no substantiated customer complaints about any data loss or breaches of data privacy in Hong Kong.

## Providing an Affordable and Reliable Energy Supply

Our town gas supply reliability reached a high level of 99.99% during the year.


In large part, this was made possible by our dual feed of natural gas and naphtha that reduces our reliance on a single fuel source to produce town gas.

To keep our gas supply functioning at a highly reliable level, we are modifying our gas production plants so that they are capable of handling increases in gas demand. We also continued to work on the installation of a backup export gas line at our Tai Po Gas Production Plant to enhance gas supply reliability. These projects are scheduled for completion in 2020.



## Improving Accessibility for All

We are committed to improving access to our products and services for all customer groups in Hong Kong.

<b>Ethnic Minorities</b>	A customer service hotline is available in English, Cantonese, Putonghua, Tagalog and Indonesian.
<b>The Visually Impaired</b>	Bills and gas appliances with braille instructions are provided to assist those who are visually impaired.
<b>The Disabled</b>	Wheelchair access is available in customer centres.
<b>Disadvantaged Groups</b>	<p><b>Towngas Concession Schemes</b> are available to people in need including the elderly, people with disabilities, single-parent families and low income families.</p>  <p>In 2019, over 46,000 households benefited from concessions totalling <b>HK\$26 million</b>.</p>

## New Products and Services

Many of the products and services we develop or improve are in response to customer needs. With our commercial and industrial customers, we often work together to identify their needs and benefit from their expertise and insights. This, combined with our philosophy of "Growth = innovation x implementation", results in new appliances that are more attuned to market demand.

One example is a gas dehumidifier that we developed for the medical profession. Designed to keep humidity low and thereby improving indoor air quality, this dehumidifier is now in use in hospitals, operating theatres and clinics. We have now extended this product to commercial complexes and the airport.

To deal with the issues of an ageing society, we are developing cooking appliances to further enhance customer safety. More details can be found in [Safe Appliances for the Elderly](#).



## Community

### 2019 Performance Highlights

#### Enhance Quality of Life, Create a Sustainable Environment and Support Future Generation in the Local Community



- Donated **HK\$7.2 million** towards community activities



- The Towngas Volunteer Service Team celebrated **20 years** of serving Hong Kong families

- Extended the **Green Flame Project** to improve the living environment of underprivileged families through upcycling with primary school students



- Volunteer service hours: **87,557** (Hong Kong) **264,440** (Mainland utility business)
- **593,131** beneficiaries recorded for our volunteer services in Hong Kong

#### Future Actions and Targets

- Develop a systematic process of **community investment** (from collecting feedback to making decisions)
- Continue **supporting NGOs** and identifying community programmes that benefit society



### How We Work

Our community initiatives focus on three areas:



By addressing issues associated with our three focus areas, we are able to develop programmes with the greatest impact on the communities we serve.

## Investing in the Community

To understand the needs of the community in Hong Kong, we hold ongoing conversations with NGOs and District Councillors to identify and work out the most appropriate programmes.

One of our major outreach vehicles for promoting stronger links with the community is our District Council Focus Team. It liaises directly with all District Councillors in Hong Kong and works with them and other local representatives to prioritise needs and formulate effective solutions.

We are also developing a formal mechanism for collecting feedback from local communities and creating a process that enables us to better review the feedback we collect as the basis for decision-making in future.

## Engagement with the Community

In addition to raising funds and providing sponsorships, our staff generously volunteer their time for community service. At the corporate level, Towngas supports their efforts by providing the funding, materials and training they require to make a difference in people's lives and build harmonious relationships in the community.

Through our Towngas Customer Volunteer Team, our staff, their families and our customers have the opportunity to take part in meaningful community activities.

We also participate in and support lectures, seminars and conferences on topics including safety, climate change, water conservation and career development. Through these activities, we are able to share with the public our management expertise as well as our professional and technical knowledge, which in turn promotes awareness of these issues and encourages greater collaboration on resolving the environmental, social and governance (ESG) challenges we face.



### Progress Areas

## Towngas Volunteer Service

In 2019, the Towngas Volunteer Service Team celebrated its 20<sup>th</sup> anniversary of service to the community.



**799** staff members and **240** customers registered as **volunteers** in Hong Kong

## Community Health and Wellness

As an extension of our warm and caring culture, we help people in need both through donations and the programmes we organise to create lasting value.

In response to the issues associated with an ageing society, we have put a greater focus on programmes for elderly people.



### Towngas Programmes for the Elderly (Hong Kong)



Objective



Progress

#### Mad Dog Café charity programme

To improve the living standards of the elderly and people with disabilities through an internal fund-raising campaign



- Around **HK\$450,000** raised
- **127** thermo ventilators donated

#### Chef Anchor



To alleviate the symptoms of Mild Cognitive Impairment in patients

- **200** elderly people helped since the programme launch in 2017

#### We Can Cook

To promote lifelong learning for the young-olds



- **Phase 3** launched

#### Soup to Warm the Heart Campaign, Rice Dumplings for the Community, Mooncakes for the Community

To show our care to the elderly and people in need



- **46,180** servings of soup distributed
- **400,000** sets of ingredients for rice dumplings donated
- **130,000** mooncakes delivered



Objective



Progress

#### Farming for Charity



To donate vegetables to people in need through volunteer work on an organic farm

- **4,350** cabbages of vegetables donated to **8,700** people in need



In mainland China, we organise a Rice Dumplings for the Community programme similar to the annual event we hold in Hong Kong. In 2019, over 100 project companies within the Group participated in this programme to wrap and distribute more than 50,000 rice dumplings for welfare groups and people in need. Festive gifts worth over RMB497,000 were handed out at the same time, benefiting over 16,200 people.



#### Green Flame Project - Upcycling for a Greener Home

In 2019, we established the MasterCraft Volunteer Team to harness their creativity and professional skills on projects that help to improve people's standard of living.



During the year, the team joined St. James' Settlement to launch the Green Flame Project - Upcycling for a Greener Home. In this project, over 20 members of the MasterCraft Volunteer Team engaged primary school students to create items such as wooden shelves and wall units using upcycled waste materials for underprivileged families who live in cramped homes.

In addition to benefiting the families, the project showed students how to turn waste into treasure. It also demonstrated how participants from the commercial, education and social service sectors can collaborate for the benefit of the environment and society.



## The Environment

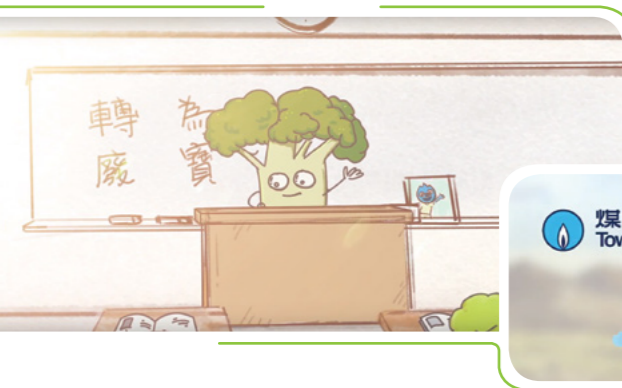
We also collaborate with green groups and interested parties to work together on creating a sustainable environment.

In 2018, we launched the Towngas Governors Beautification Project for secondary school students to add colour to their community and convey the message of innovation and green living. The project was extended in 2019 to include the Technological and Higher Education Institute of Hong Kong, with the target of completing the decoration of another 17 gas governor kiosks in 2020.

In mainland China, the Group organises various low-carbon and environmental programmes. Under a plastic reduction campaign in 2019 were four main themes: Towngas China Plantation Day, Earth Hour, Plastic Reduction Movement and Environmental Creative Show. More than 80 of our joint ventures participated in the campaign and planted around 6,000 saplings across the country in 2019.



### Parent-child Reading Programme



As an advocate of environmental protection, Towngas supported a parent-child reading campaign for communicating the importance of green living to the younger generation. In 2019, Towngas joined parent-child reading expert Choi EE to create a cartoon series, the Towngas x Choi EE Reading Journey, which explores environmental protection in daily life. The **first episode** of this four-part series is now available online.



## Youth Development

We are committed to investing our resources and expertise in the next generation by supporting activities such as the Hong Kong Primary & Secondary Schools STEM Robotics Competition 2019. Organised by The Chinese University of Hong Kong, this competition is designed to promote interest in STEM (Science, Technology, Engineering, and Mathematics) subjects. We are also in the process of producing a series of STEM educational materials to promote STEM among students from the perspective of gas knowledge and safety.

The Towngas China Gentle Breeze Movement launched in 2013 aims to improve the learning environment in schools across mainland China. To date, the Group has donated educational materials worth over RMB4 million to 40 schools in the provinces/autonomous regions including Jiangxi, Anhui, Jiangsu, Shandong, Guizhou, Shaanxi, Liaoning, Guangdong, Hubei, Fujian, Inner Mongolia, Sichuan and Heilongjiang.

In 2019, we extended this programme to Bazhong city, Sichuan province and Qiqihar city, Heilongjiang province. At schools in these provinces, our staff donated school uniforms, teaching aids and daily necessities to about 340 students. We also built Towngas China Charity Libraries and refurbished areas such as dining halls and laboratories.

## Suppliers

### 2019 Performance Highlights

#### Create a Sustainable Supply Chain

- **1<sup>st</sup> public utility** in Hong Kong to complete the ISO 20400 Sustainable Procurement Assessment
- New Towngas **eTS** helps to standardise workflows and increase efficiency
- Over **80%** of suppliers in Hong Kong have achieved ISO 14001 certification
- Assessed over **140** major suppliers on their CSR performance in Hong Kong and mainland China

#### Future Actions and Targets

- Work with suppliers to improve their **ESG performance**
- Promote the **LCC approach** in procurement

### How We Work

## Supplier Management System

Five key principles have been established as the foundation of responsible supply chain management at Towngas:



When selecting suppliers, we consider a wide range of criteria, including a company's background, quality, price and delivery of service, and CSR performance. Preference is given to companies holding related ISO certificates and other documents pertaining to quality. Reviews are conducted at least once a year to ensure the suppliers on the approved list are performing at a satisfactory level. We treat our suppliers as partners and regularly engage them in pursuit of our shared values for sustainable development.

## Managing Environmental and Social Risks

To ensure suppliers follow our procurement standards and CSR performance requirements, we invite them to conduct self-assessment surveys. Suppliers' CSR performance is assessed according to the following criteria stated in our **CSR Code of Practice for Suppliers**:



Selected suppliers are assessed through site visits and are provided with improvement plans with the aim of working together to identify opportunities for improving their ESG performance.

At Towngas, we are committed to following 6S<sup>1</sup> management principles for a safe and efficient workplace. We also promote 6S practices among our suppliers and support those who follow this methodology for improving efficiency, productivity and product quality, as well as reducing the risk of industrial accidents.

In addition, we organise green activities with NGOs for our suppliers, such as site visits to our gas appliance recycler, to raise suppliers' awareness about environmental protection.

<sup>1</sup> 6S refers to the Japanese words *Seiri, Seiton, Seiso, Seiketsu, Shitsuke* (which mean Sort, Set in order, Shine, Standardise, Sustain) and Safety

## Building a Sustainable Supply Chain

Our sustainable supply chain management covers the complete supply chain lifecycle, from product design to disposal.

We are one of the founding members of the Sustainable Procurement Charter launched by the Green Council in 2018. According to the Charter, sustainability considerations are to be incorporated along the entire supply chain; sustainable procurement should be included in the formulation, implementation and evaluation of procurement policies and strategies; and regular risk assessments of suppliers must be conducted to ensure the entire supply chain complies with the principle of sustainability.

We also work closely with our suppliers to ensure they adopt sustainable business practices and help them comply with our sustainable purchasing policy. In our business, we advocate working closely with our suppliers to develop efficient delivery of gas appliances, affix energy labels to water heaters and reduce the use of plastic packaging, among other considerations.

In terms of disposal, we support the recycling industry through the long-term partnerships we have established with recyclers at the EcoPark in Hong Kong.

### Progress Areas

## Sustainable Procurement

We have sourced more sustainable products such as feedstock (natural gas and landfill gas), pipelines for town gas/natural gas distribution, and environmentally friendly office supplies and equipment, including energy-efficient lighting and Forest Stewardship Council (FSC) certified products.

In 2019, Towngas became the first public utility company in Hong Kong to be verified by the British Standards Institution, an international business improvement and standards company, which confirmed that our procurement decisions and processes were in compliance with ISO 20400 Sustainable Procurement guidance standard. In line with this standard, we ensure the products and services we purchase are value for money, and have the lowest negative environmental impact while achieving positive social results.

During the year, over 90% of our purchasing staff in Hong Kong attended an ISO 20400:2017 Sustainable Procurement Awareness Training Course to familiarise themselves with the standard, which calls for balancing environmental, social and economic factors in procurement and achieving the best value for money.

Making reference to ISO 20400, we have adopted the Life-cycle Costing (LCC) methodology to promote sustainable purchases by estimating the total costs of the goods and services we procure over their lifespan. The application of this methodology to our vehicle purchases has helped us achieve fuel cost savings and contribute to a cleaner environment. In the future, we will extend the LCC approach to other categories of products and services procured for further savings.

## Supplier Performance and Engagement

In 2019, over 90% of our suppliers in Hong Kong and 70% of our mainland utility suppliers (based on total purchase value) completed a CSR self-assessment. Towngas did not identify any key suppliers who had a significant negative impact, actual or potential, on our business ethics, environmental, human rights or labour practices. We will continue to monitor our suppliers and ensure their activities have no negative environmental or social impacts.

Requirements on our suppliers have also been tightened, and they are now obligated to provide certifications on ISO standards such as ISO 9001 and ISO 14001 on the e-Tendering System (eTS) platform when they register as our vendors. The agreed specifications of the products and/or services are written into their legally binding contract agreements with us. We also plan to encourage more suppliers to obtain ISO 14001 and to promote ISO 45001 certifications and will eventually include these standards in our tender assessment process.

In 2019, we held sharing sessions with over 350 suppliers in Hong Kong as part of our engagement exercise, during which we emphasised the importance of integrating our sustainable purchasing policy and corporate ethics into their operations and participating in a fair and competitive market. To encourage good ESG practices among our suppliers and recognise their efforts, we nominated our suppliers for the HSBC Living Business Awards. In this award programme, we were honoured as the HSBC Living Business Sustainable Supply Chain Leader in 2019, in recognition of our commitment to sustainable supply chains.

Our Suppliers Conference in mainland China, which is held every two years, serves as an important platform for communicating with our suppliers. More than 150 mainland suppliers joined the Conference in 2019. During the meeting, we provided updates on our group standards, discussed relevant topics, and announced the Best 6S Suppliers so that the rest of our suppliers can learn from their best practices.



In our Hong Kong operation, **over 80%** of our suppliers<sup>2</sup> have achieved ISO 14001 certification

<sup>2</sup> Based on total purchase value of product and material

### Suppliers' Profile by Geographical Location (Hong Kong Business)

Hong Kong	87.9%
Mainland China	3.5%
Others	8.6%

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## STRENGTHENING CORPORATE GOVERNANCE



### Keeping Our Promises to Stakeholders

To safeguard the interests of our stakeholders, we are committed to maintaining good corporate governance, enhancing risk management and embedding our corporate culture of integrity and ethics into the mindset of our staff.

We will continue to identify staff needs and formulate training and activities that help to promote an ethical culture within the Company. By doing so, our staff and those of our partners will be prepared to address the risks that could arise in their work.

In order to react promptly to the fast-changing business environment, we regularly evaluate Towngas' risk profile to identify and mitigate emerging risks (including social, political and economic risks) that could impact our business. Contingency plans under different emergency scenarios have also been established.



### Our Management Approach

We believe that good governance is the foundation of sustainability. We also consider robust risk management and ethical conduct in our operations to be in the best interests of our stakeholders.

Our reputation as a trusted service provider and business partner depends on our staff operating ethically and with integrity. The Towngas **Code of Conduct** provides guidelines on how to handle issues related to equal opportunity, fair practice, freedom of association, whistleblowing, conflicts of interest and corruption. An **Anti-fraud Policy** is also in place to promote integrity as a core company value.

All our staff members are expected to adhere fully to the principles set out in the Code of Conduct and will be subject to disciplinary action if they contravene those principles. In addition, we have a **Whistleblowing Policy** that encourages employees and stakeholders to raise concerns about any misconduct, malpractice or irregularity, particularly in relation to violations of our Code of Conduct or our business ethics and principles.

We also insist that our suppliers maintain an equally high standard of ethics as stipulated in our **CSR Code of Practice for Suppliers**.

#### 2019 Performance Highlights

##### Create a Culture of Ethics and Compliance



- Launched a company-wide **anti-fraud campaign** to promote anti-corruption and integrity

- Established **anti-fraud seminars** by the ICAC as part of our staff orientation
- Stepped up monitoring of **emerging risks** with significant impact and systematically mitigated relevant risks to an acceptable level

#### Future Actions and Targets



- Launch an **eLearning module** on training to further promote business ethics

- **Effectively manage existing and emerging risks** in operating environments with social, political and economic changes
- **Continually review the risk management framework** to keep abreast of ever-changing business environments



## How We Work

### Corporate Governance Structure

At Towngas, the high standard of corporate governance that we maintain helps to assure shareholders that their rights and interests are well protected. For other stakeholders, including customers, employees, suppliers and members of the community, our adherence to good corporate governance principles and practices is a clear demonstration of our commitment to fulfilling our social responsibilities.

The Board of Directors (the Board) of Towngas is the Group's highest governing body. It is responsible for enforcing corporate governance and risk management through effective internal controls that enhance transparency and accountability.

As at 31 December 2019, the Board comprised eight members: two executive directors and six non-executive directors, three of whom are independent. The Board is ultimately accountable for the Group's activities, strategies and financial performance. For details about the Board, its composition, operation and committees, please refer to our **corporate website** or our **Annual Report 2019**.

### Risk Management

We consider risk governance to be among our top priorities at Towngas and have established a robust system of risk management and internal control. This contributes to our future success and helps to increase our value to key stakeholders over the long term.

Our risk management process covers all business units in the organisation and concerns all our people. As an ongoing process, risk management has become an intrinsic aspect of our day-to-day operations and part of the culture at Towngas. The Board has the overall responsibility to oversee risk management and evaluate and determine the nature and extent of the risks it is willing to take in a manner consistent with its strategic business drivers.

To ensure proper risk reporting channels are in place, the Group Risk Management Committee recommends the risks and corresponding controls to the Executive Risk Management Committee and reports them to the Board for its endorsement. For further information about risk management at Towngas, please refer to our **Annual Report 2019**.

### Ethical Business

At Towngas, we comply fully with local laws and regulations in every jurisdiction where we operate.

#### Prevention of Bribery, Extortion, Fraud and Money Laundering

According to the Prevention of Bribery Ordinance, Towngas is a public body. We therefore insist that our staff and business partners adhere to both the letter and the spirit of the law during the course of business. All our employees are strictly forbidden from giving or accepting bribes and must never offer an advantage to, or ask for an advantage from, customers, suppliers, contractors, regulators and legislators, authorities or other business partners.

Our Anti-fraud Policy continuously enhances our anti-fraud controls and organisational behaviour in consistency with our ethical culture. Under this policy, we are committed to preventing, detecting and reporting any actual or suspected case of fraud, irregularity, misconduct and malpractice, with zero tolerance for any case of corruption or related malpractice.

In addition, our Whistleblowing Policy provides a formal channel and guidance on reporting possible improprieties. We also have a dedicated panel for dealing with such cases, while staff grievances are handled by the Corporate Human Resources Department. A summary of reported whistleblowing cases is sent to the Board Audit and Risk Committee twice annually.

#### Prevention of Anti-competitive Practices

In our Code of Conduct, we set out our commitment to comply with the laws and regulations pertaining to anti-competitive practices, in line with the Company's nine core values. It also provides guidance to help staff members understand the requirements and importance of compliance, as well as the disciplinary action and possible liabilities they will be subject to in cases of non-compliance.

Additionally, we closely monitor the Competition Ordinance and report to the management on any developments that could have a significant impact on Towngas.

#### Protecting Intellectual Property Rights

All employees must respect and not infringe copyrighted work and comply with all applicable laws and regulations. We also require our suppliers to respect intellectual property. In any case of infringement of intellectual property rights by our suppliers, they will have the responsibility to defend and indemnify Towngas.

#### Respect for Human Rights

##### ■ Prevention of Child Labour or Forced Labour

In accordance with our adherence to human rights principles, we strictly prohibit child labour and forced labour in our operations. To ensure we are legally compliant with local laws and regulations in our recruitment, we will check an applicant's identity including, but not limited to, his or her age and eligibility for employment. We also ensure that employees are given rest days and are compensated for any overtime work, as required by local regulators.

We have extended the concept of fair labour throughout our entire supply chain and require our suppliers to comply with our policies on child labour and forced labour as stipulated in our **CSR Code of Practice for Suppliers**. Child labour and forced labour are two of our critical assessment criteria when we conduct an on-site Corporate Social Responsibility (CSR) audit of our suppliers. For more details, please refer to [Suppliers](#).

##### ■ Security

Towngas is committed to minimising potential security threats to the Company's facilities and its employees, and has a Corporate Security Policy in place to protect employees and company assets from harm or loss.

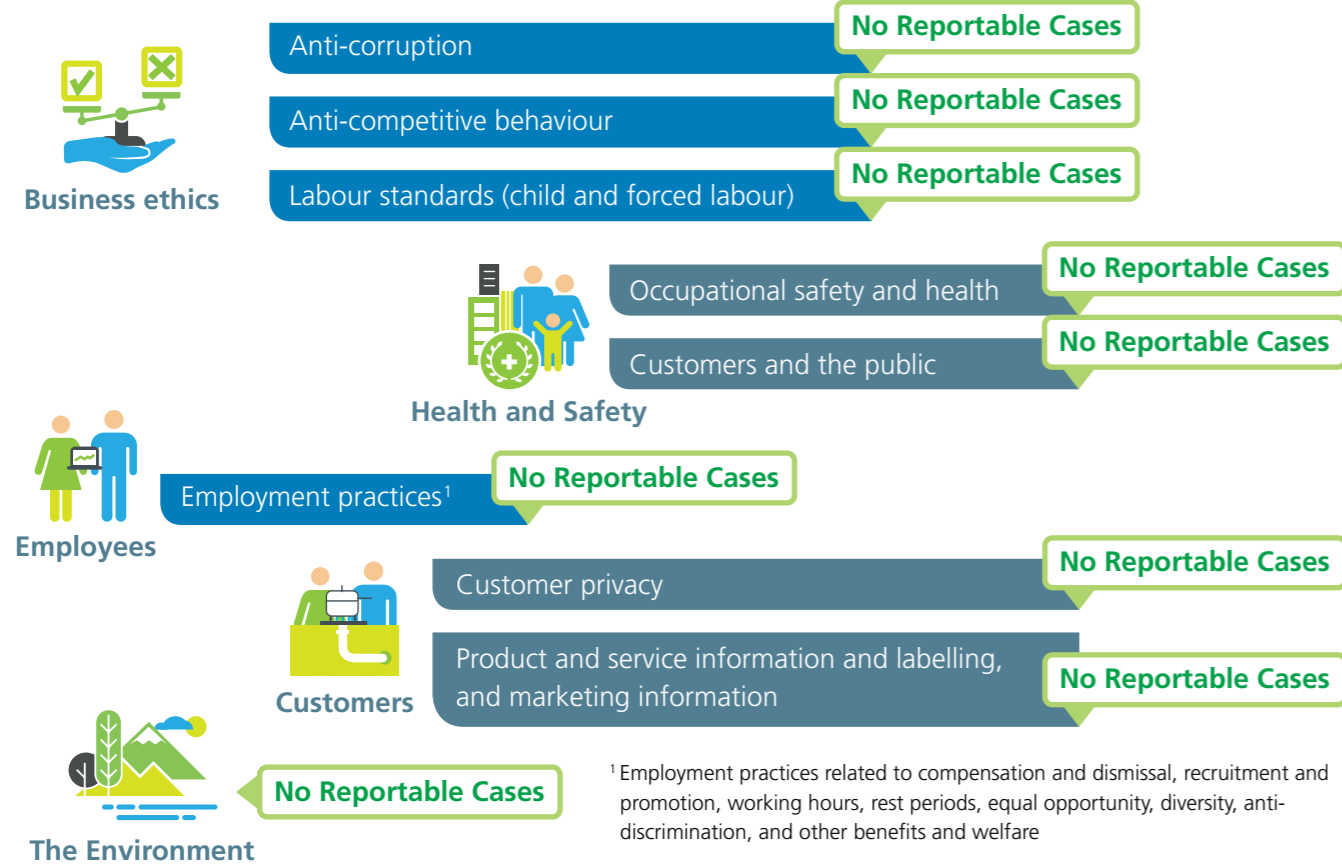
To reduce security risks, we have implemented appropriate security measures. Security surveys and audits are conducted to assess possible threats or risks to our major facilities. We also work with governments and our partners to safeguard our assets and provide our employees and contractors with a secure working environment.

While our security team does its utmost to protect our people and physical assets, it must also respect human rights in the discharge of its duties. We ensure that all security personnel are kept abreast of legislation concerning human rights and the rule of law and that they treat people in an appropriate and respectful manner. New security personnel receive training in anti-corruption and non-discrimination during their induction and are required to comply with our Code of Conduct.

## Progress Areas

### Legal Compliance

Towngas complies with all laws and regulations as the basic requirement of how we operate.



### Training

Training in the Code of Conduct is mandatory for all staff.

In 2018–2019, we launched a company-wide anti-fraud campaign to promote anti-corruption and integrity. Employees in Hong Kong were required to attend a seminar organised in collaboration with the Independent Commission Against Corruption (ICAC) to refresh their understanding of what constitutes ethical behaviour and to ensure our business practices remain compliant. A total of 4,600 hours, or 93% of our targeted employees, received anti-corruption training in 2019. An eLearning module was also launched to cover the remaining targeted employees.

During the year, we developed an anti-bribery training programme for employees in mainland China, covering the Towngas Anti-fraud Policy and relevant laws in mainland China, with case studies. This programme was delivered to over 24,000 staff via eLearning.

As human rights was a concern raised by our stakeholders, we are examining ways to prevent and mitigate any human rights violations. We will look at the training needs of our workers so that they are better equipped to address human rights issues that could arise in the course of their work.



## Integrity in the Workplace

Integrity is essential for good corporate governance. Our Total Quality Management (TQM) framework has three pillars: Courtesy, Ingenuity and Integrity.



We are determined to make integrity part of our brand image. In 2019, we promoted our culture of integrity through activities designed to heighten awareness of the importance of ethical behaviour in our operations.

In Hong Kong, we held “Living with Integrity” roadshows for our staff, with over 80% attendance. Other activities included a quiz and a drawing competition that also involved the family members of our staff, as well as a short film competition featuring stories by our staff about real-life ethical dilemmas in their work and personal lives.

The main message conveyed in these activities was that integrity is more than just abiding by the law, but about living out the culture of integrity in every aspect of one’s working life.

In order to maintain an equally high standard of integrity in mainland China, we organised around 800 sessions of TQM workshops on the topic, with approximately 25,000 employees participating.





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## DATA AND REPORTING

### Approach to Reporting

Towngas is an organisation that listens and responds to the concerns of stakeholders including but not limited to the social and environmental challenges we face.

We have been reporting on our environmental, social and governance (ESG) performance on an annual basis for over a decade. We cover in this report our approach to ESG, which is based on our Towngas ESG Framework, disclose our achievements in five key areas, and acknowledge where further improvements can be made.

For this year's report, we have established a more formal structure for easier reading. It includes our management approach (commitment, philosophy and policies); a description of how we work (systems and practices); and our progress areas (key initiatives, focus areas, targets and performance, and future plans).

### Reporting Scope and Boundary

This report examines the material topics that arose at Towngas and its subsidiaries (the Group), during the period from 1 January 2019 to 31 December 2019, unless otherwise stated.

Information on our ESG performance covers the principal activities of the Group, which include the production, distribution and marketing of gas, water supply and emerging environmentally friendly energy businesses in Hong Kong and mainland China. Our financial performance is discussed in [Creating Business Opportunities](#), while more comprehensive information on our financial data and businesses is available in the **Annual Report 2019**.

For more information on the ESG performance of our mainland operations—including case studies and key performance indicators—please refer to the **Towngas China ESG Report 2019** and **Hua Yan Water CSR Report 2019**.

### Reporting Guidelines

This report was prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core Option, with reference to the GRI G4 Oil and Gas Sector Disclosures. It also fulfils the mandatory disclosure requirements and “comply or explain” provisions of the latest ESG Reporting Guide (ESG Guide) under Appendix 27 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (SEHK).

Please refer to the [GRI Content Index](#) and the [ESG Guide Content Index](#) for more details.

### Reporting Principles

In developing the report content, we have adhered to the principles of the GRI Standards and ESG Guide, including but not limited to the following:

**Materiality:** A description of our materiality assessment process can be found in the [Materiality Assessment](#) section. It outlines the way we identify, prioritise and validate material issues, including how we take key stakeholders' views into account.

**Quantitative:** The details of how we quantify our data, including standards, methodologies, assumptions and conversion factors, can be found in the [Key Statistics](#) section.

**Consistency:** Consistent methodologies are employed for a meaningful comparison, using year-on-year data. Where our methodologies have changed, these are noted in the [Key Statistics](#) section.

### Independent Verification

This report has been verified by an independent third party, Hong Kong Quality Assurance Agency, to ensure its accuracy and completeness, and to verify its adherence to the reporting guidelines. Please refer to the [Verification Statement](#).

### Acknowledgement

Compiling this report was made possible with the support of the Towngas ESG Committee, the senior management of the Company, and our many departments. We are sincerely grateful to everyone who contributed their time, knowledge and insights towards the preparation of this report. We also thank our staff, partners, customers and other stakeholders who share our vision of enhanced business sustainability.

### Your Feedback

The full version of this report is published on the Towngas website and the website of SEHK.

We welcome comments on this report, as well as any opinions on our future ESG strategy. We invite you to provide your feedback on our ESG performance and reporting methods by completing the **online questionnaire** or emailing us at [cad@towngas.com](mailto:cad@towngas.com).

## Key Statistics

This section presents an overview of the 2019 key performance of the Group, with a focus on economic, safety, environmental, employee and social aspects. These quantitative data have been selected in accordance with the GRI Standards, the ESG Guide of SEHK, and other key performance indicators.

## Economic Performance

	Unit	2019	2018	2017	2016	2015
<b>Operating</b>						
Customers (Hong Kong gas business)	Million	1.93	1.91	1.88	1.86	1.84
Customers (City-gas business)	Million	29.8	27.5	25.4	23.1	20.9
Customers (Water business)	Million	2.38	2.24	1.24	1.19	1.12
Town gas sales (Hong Kong)	Million MJ	28,712	29,550	29,049	28,814	28,404
Gas sales (Mainland China)	Billion m <sup>3</sup>	25.6	23.0	19.5	17.1	15.5
Water sales (Mainland China)	Million tonnes	926	610	467	455	433
<b>Financial</b>						
Revenue	HK\$ million	40,628	39,073	32,477	28,557	29,591
Manpower costs	HK\$ million	3,485	3,295	3,035	2,955	2,844
Capital expenditure	HK\$ million	7,053	6,746	6,141	6,257	6,356
Taxation	HK\$ million	2,290	1,908	1,750	1,576	1,727
Dividends	HK\$ million	5,924	5,385	4,896	4,451	4,047
Profit attributable to shareholders	HK\$ million	6,966	9,313	8,225	7,341	7,302

## Hong Kong

## Safety Performance

	Unit	2019	2018	2017	2016	2015
<b>Employees<sup>1</sup></b>						
Accidents – all industrial injuries	Number	12	10	10	13	19
Reportable accidents	Number	9	7	10	12	15
Accident frequency rate	Number of accidents per 100,000 man-hours	0.18	0.15	0.15	0.19	0.29
Occupational disease rate	Number of incidents per 100,000 man-hours	0	0	0	0	0
Accident incidence rate	Number of reportable accidents per 1,000 employees	3.1	2.4	3.4	4.1	5.3
Traffic accident injury rate	Number of traffic accidents injuries per 100 vehicles	1.05	2.31	2.31	3.36	1.68
Industrial injury man-days lost	Number of man-days	244	201	496	576	596
Fatal accidents	Number	0	0	0	0	0
<b>Contractors</b>						
Reportable accidents	Number	6	9	12	N/A	N/A
Fatal accidents	Number	0	0	0	N/A	N/A
Accident frequency rate	Number of accidents per 100,000 man-hours	0.14	0.22	0.30	N/A	N/A

## Employees

	Unit	2019	2018	2017	2016	2015
<b>Total Headcount</b>						
Hong Kong gas business	Number	2,096	2,052	2,022	2,019	1,999
<b>All Hong Kong staff<sup>2</sup></b>						
Full-time	Number	2,474	2,418	2,388	2,392	2,380
Part-time	Number	118	112	94	116	110
<b>By gender</b>						
Male	Number	1,943	1,908	1,877	1,887	1,882
Female	Number	531	510	511	505	498
Ratio of male to female – Senior management	Ratio	3.3:1	3.4:1	3.4:1	3.4:1	3.2:1
Ratio of male to female – Middle management	Ratio	3.1:1	3.0:1	3.0:1	3.2:1	3.3:1
Ratio of male to female – General staff	Ratio	4.3:1	4.5:1	4.4:1	4.3:1	4.3:1
<b>By age group</b>						
≤25	Number	139	124	123	126	118
26-35	Number	444	400	395	372	385
36-45	Number	486	496	475	487	491
46-55	Number	787	823	861	909	940
≥56	Number	618	575	534	498	446
<b>By employee category</b>						
Senior management	Number	265	251	236	239	239
Middle management	Number	925	889	843	831	820
General staff	Number	1,284	1,278	1,309	1,322	1,321
<b>Turnover Rate</b>						
Average turnover of workforce (Hong Kong gas business)	%	5.7	6.8	5.7	5.8	4.8
Average turnover of workforce (all Hong Kong staff)	%	5.7	8.7	6.4	6.7	5.8
<b>By gender</b>						
Male	%	4.6	7.0	5.6	6.0	4.9
Female	%	9.8	15.1	9.3	9.0	9.4
<b>By age group</b>						
≤25	%	12.2	16.2	19.3	21.3	26.8
26-35	%	10.9	20.4	13.0	14.8	14.0
36-45	%	7.3	9.9	7.1	6.1	3.6
46-55	%	2.5	4.4	2.6	3.4	2.4
≥56	%	3.7	4.1	4.1	3.4	2.9
<b>New Recruitment</b>						
Total	Number	250	270	198	200	203
<b>By gender</b>						
Male	Number	173	194	148	144	145
Female	Number	77	76	50	56	58
<b>By age group</b>						
≤25	Number	51	44	53	56	48
26-35	Number	102	95	74	71	64
36-45	Number	52	79	42	34	36
46-55	Number	27	33	15	22	21
≥56	Number	18	19	14	17	34

	Unit	2019	2018	2017	2016	2015
<b>Percentage of Staff Who Underwent Performance and Career Reviews</b>						
Total	%	82.8	83.4	85.2	85.6	85.8
<b>By gender</b>						
Male	%	83.9	84.5	86.4	87.1	88.8
Female	%	78.9	79.0	80.8	79.8	74.5
<b>By employee category</b>						
Senior management	%	79.6	80.5	85.2	82.0	82.8
Middle management	%	89.4	89.8	82.9	92.4	90.1
General staff	%	78.7	79.4	80.2	81.9	83.6
<b>Training Hours<sup>3</sup></b>						
Total	Hours	65,679	82,996	27,907	15,753	19,069
Average (per employee)	Hours	22.4	28.6	10.5	6.6	8
Anti-corruption	Hours	4,649.2	661.5	187.8	200	300
<b>By gender (Average training hours and percentage of employees who received training)</b>						
Male	Hours (%)	25.6 (93.7)	31.2 (88.9)	11.2 (53.3)	5.8 (43.3)	7.6 (40.3)
Female	Hours (%)	12.3 (87.1)	20.2 (82.3)	7.8 (61.5)	9.6 (70.3)	9.4 (44.6)
<b>By employee category (Average training hours and percentage of employees who received training)</b>						
Senior management	Hours (%)	9.8 (85.0)	17.1 (85.0)	5.9 (50.0)	9.5 (73.2)	12.6 (75.1)
Middle management	Hours (%)	13.7 (96.8)	22.9 (89.8)	7.9 (60.1)	10.7 (63.4)	8.7 (53.7)
General staff	Hours (%)	30.5 (90.7)	34.3 (86.3)	13.2 (53.0)	3.5 (35.6)	6.8 (27.7)

## Environmental Performance

	Unit	2019	2018	2017	2016	2015
<b>Energy Consumption<sup>4</sup></b>						
<b>Towngas headquarters</b>						
Electricity	GJ	20,252	20,350	20,921	21,383	21,277
Town gas	GJ	2,258	2,104	2,020	2,217	1,477
<b>Gas production process</b>						
Electricity	GJ	164,242	148,134	137,142	150,251	145,797
Naphtha	GJ	720,641	671,808	628,760	616,538	598,935
Natural gas	GJ	5,383,668	5,287,475	5,033,398	5,069,673	4,934,059
Synthetic natural gas and landfill gas	GJ	42,038	325,950	584,126	481,963	550,926
Town gas	GJ	172,701	172,617	160,011	168,086	156,196
Diesel	GJ	1,537	1,480	1,373	1,365	1,452
<b>Vehicle fleet<sup>5</sup></b>						
Unleaded petrol	GJ	10,231	11,500	12,679	14,518	15,662
Diesel	GJ	12,017	11,429	11,316	10,172	9,420

	Unit	2019	2018	2017	2016	2015
<b>Packaging Material Used</b>						
Carton	Tonnes	946	942	889	822	866
Wood	Tonnes	17.7	19.8	18	29	25
Plastic	Tonnes	0.88	0.45	0.7	0.9	1.0
<b>Emissions</b>						
Carbon dioxide (CO <sub>2</sub> )	Daily average in metric tonnes (Metric tonnes per million MJ of town gas)	912 (11.90)	928 (11.70)	915 (11.64)	907 (11.55)	898 (11.82)
Nitrogen oxides (NO <sub>x</sub> )	Daily average in kg (kg per million MJ of town gas)	308 (4.00)	317 (4.00)	311 (4.00)	314 (4.00)	292 (3.84)
Sulphur oxides (SO <sub>x</sub> )	Daily average in kg (kg per million MJ of town gas)	1.0 (0.01)	1.4 (0.02)	1.9 (0.02)	1.4 (0.02)	1.3 (0.02)
Greenhouse gases (GHGs) (gas production) <sup>6</sup>	Tonnes CO <sub>2</sub> e	357,060	347,489	329,741	333,841	328,561
<b>Water Consumption/Discharge<sup>7</sup> (Gas Production)</b>						
Water consumption	m <sup>3</sup>	995,239	988,981	1,094,363	1,162,611	1,091,897
Total wastewater discharged	Daily average in m <sup>3</sup> ( m <sup>3</sup> per million MJ of town gas)	306 (3.90)	308 (3.90)	319 (4.10)	321 (4.10)	287 (3.77)
Treated wastewater discharged to marine water bodies	Daily average in m <sup>3</sup>	45	52	62	79	47
Wastewater discharged to sewage	Daily average in m <sup>3</sup>	261	257	258	241	239
<b>Waste Management</b>						
<b>Non-hazardous waste</b>						
Non-hazardous waste landfilled <sup>8</sup>	Tonnes	179.4	173.2	176.9	150.4	123.6
Non-hazardous waste recycled <sup>9</sup>	Tonnes	179.5	236.3	199.4	125.7	210.0
<b>Hazardous waste<sup>10</sup></b>						
Chemical waste generated	Daily average in kg (kg per million MJ of town gas)	238 (3.10)	38 (0.50)	193 (2.50)	167 (2.10)	49 (0.64)
Spent catalyst collected for metal recovery	Tonnes	27.4	9.1	11.4	18.5	11.7
Spent lube oil recycled	Tonnes	64.5	3.4	44.8	45.6	13.2
<b>Others</b>						
Scrap metal recycled – from used gas appliances	Tonnes	1,678	1,785	1,803	1,218	1,265
Scrap metal recycled – from construction and maintenance of plant and pipelines	Tonnes	82	153	92	34	77
Polyethylene (PE) pipes recycled	Tonnes	22.5	25.8	24.8	30.9	23.6
Gas appliances polyfoam packaging materials avoided	Tonnes	1.38	1.50	1.46	1.56	1.56

## Social Performance

### Customer Service<sup>11</sup>

	Unit	2019	2018	2017	2016	2015
Customer compliments	Number	5,924	5,912	5,637 <sup>#</sup>	6,474 <sup>#</sup>	6,360 <sup>#</sup>
Customer complaints	Number	7	12	8 <sup>#</sup>	12 <sup>#</sup>	6 <sup>#</sup>

\* The data have been adjusted to include written records only

### Community Involvement

	Unit	2019	2018	2017	2016	2015
Charitable donations made by the Group	HK\$ million	7.2	4.8	5.1	7.1	7.1
Employees participating in voluntary services	Number	799	909	852	830	859
Voluntary service hours (including employees and customers)	Hours	87,557	91,628	86,455	75,588	75,369
Beneficiaries	Number	593,131	709,766	655,876	488,755	487,057

Remarks:

- Towngas employees and the employees of its subsidiaries only.
- A revised scope was adopted in 2016. The scope includes the 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.
- From 2018, the figures included all training sessions conducted by internal departments and external organisations. Prior to 2018, the figures included training sessions mainly conducted by the Corporate Human Resources Department and Towngas Engineering Academy, while other training hours, such as HSE and its related CPD, were reported separately.
- The following conversion factors are used to standardise the units to gigajoules (GJ): Town gas (0.048GJ/unit), electricity (0.0036GJ/kWh), petrol (0.033GJ/L), diesel (0.036GJ/L). The conversion of naphtha and landfill gas to energy is calculated by multiplying individual monthly fuel volumetric data by their corresponding monthly average calorific value.
- Tankers and ECO Aviation Fuel Services (EAFS) vehicles are excluded.
- GHG inventory covers six types of GHGs specified in the Kyoto Protocol. The global warming potential rates were from IPCC Second assessment report (1995).  
Emission factors of GHG emissions due to electricity consumption are obtained from two local electricity companies, while other emission factors were obtained from local governments and authorities, or other recognised sources.  
Scope 1 GHG emissions were adjusted to reflect the biogenic nature of landfill gas and its associated carbon emissions during use.
- All water is freshwater purchased and distributed by the HKSAR Water Supplies Department. All wastewater handling procedures comply with the local regulations.
- "Non-hazardous waste landfilled" refers to the refuse, wood pallets and construction waste collected from Towngas' headquarters and the Tai Po Gas Production Plant.
- "Non-hazardous waste recycled" refers to the plastics, papers, paper cartons and metals collected and delivered 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.
- 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, and deliver them to licensed recyclers on a regular basis.
- Written compliments and complaints from customers are included.

Outside Hong Kong

### Safety Performance<sup>1</sup>

	Unit	2019	2018	2017	2016	2015
Safety training	Hours	864,759	836,813	979,628	906,691	904,211
Serious gas-related incidents	Number	8	10	8	13	14
Fatal accidents	Number	0	0	2	2	0
Industrial injury man-days lost	Number of man-days	1,265	1,667	2,153	3,654	1,676

## Environmental Performance<sup>2</sup>

	Unit	2019	2018	2017	2016	2015
<b>Energy and Water Consumption<sup>3</sup></b>						
Diesel	GJ	101,709	79,479	71,848	82,204	N/A
Natural gas	GJ	396,348	320,536	324,522	465,110	N/A
Unleaded petrol	GJ	105,700	103,980	74,936	68,430	N/A
Electricity	GJ	2,696,294	2,155,279	1,600,126	1,567,187	N/A
Others	GJ	10,590,575	9,591,164	9,104,091	9,737,518	N/A
Water	m <sup>3</sup>	4,827,702	4,204,432	4,078,327	3,731,565	N/A
<b>Emissions</b>						
Greenhouse gases (GHGs) <sup>4</sup>	Tonnes CO <sub>2</sub> e	1,439,000	1,262,000	1,245,000	1,233,000	1,276,000
Nitrogen oxides (NO <sub>x</sub> ) <sup>5</sup>	Tonnes	296.1	223.7	123.7	149.8	N/A
Sulphur dioxides (SO <sub>2</sub> ) <sup>5</sup>	Tonnes	422.0	392.9	89.2	98.4	N/A
Respirable suspended particulates (PM10) <sup>6</sup>	Tonnes	2.99	2.35	0.31	0.27	N/A
<b>Effluent and Waste<sup>7</sup></b>						
Hazardous waste (Solid)	Tonnes	1,099	1,125	1,026	1,134	N/A
Hazardous waste (Liquid)	Litres	46,192	39,131	42,857	28,600	N/A
Non-hazardous waste (Solid)	Tonnes	239,050	215,425	202,047	220,180	N/A
Non-hazardous waste (Liquid)	Litres	50,427	54,912	69,999	65,677	N/A
Wastewater discharged to sewage	m <sup>3</sup>	1,355,985	1,090,574	1,847,850	2,088,830	N/A

## Employees<sup>8</sup>

	Unit	2019	2018	2017	2016	2015
<b>Total Headcount</b>						
Employees	Number	50,352	49,489	46,772	46,803	45,292
<b>By employment types</b>						
Full-time	Number	50,342	49,478	46,758	46,789	N/A
Part-time	Number	10	11	14	14	N/A
<b>By gender</b>						
Male	Number	34,069	33,331	31,386	31,945	N/A
Female	Number	16,273	16,147	15,372	14,844	N/A
<b>By age group</b>						
≤25	Number	3,989	4,065	4,114	4,656	N/A
26-35	Number	16,574	16,733	16,527	16,468	N/A
36-45	Number	15,151	15,024	14,249	13,964	N/A
46-55	Number	12,225	11,572	10,124	9,961	N/A
≥56	Number	2,403	2,084	1,744	1,740	N/A
<b>By employee category</b>						
Senior management	Number	1,003	1,002	971	929	N/A
Middle management	Number	5,750	5,074	4,506	4,485	N/A
General staff	Number	43,589	43,402	41,281	41,375	N/A

	Unit	2019	2018	2017	2016	2015
<b>Turnover Rate</b>						
Average turnover	%	2.8	4.1	4.1	2.3	N/A
<b>By gender</b>						
Male	%	2.9	4.8	4.7	2.5	N/A
Female	%	2.6	2.5	2.8	1.9	N/A
<b>By age group</b>						
≤25	%	6.2	7.7	4.6	3.5	N/A
26-35	%	4.0	7.2	6.4	2.7	N/A
36-45	%	2.1	2.0	2.5	1.9	N/A
46-55	%	1.3	0.8	2.3	1.7	N/A
≥56	%	1.3	2.6	3.5	1.8	N/A
<b>New Recruitment</b>						
Total	Number	2,736	3,558	1,196	1,853	N/A
<b>By gender</b>						
Male	Number	1,864	2,418	910	1,352	N/A
Female	Number	872	1,140	286	501	N/A
<b>By age group</b>						
≤25	Number	766	1,186	216	320	N/A
26-35	Number	1,201	1,743	513	766	N/A
36-45	Number	590	487	285	465	N/A
46-55	Number	152	121	155	260	N/A
≥56	Number	27	21	27	42	N/A

## Social Performance

### Community Involvement

	Unit	2019	2018	2017	2016	2015
Employees participating in voluntary services (Mainland utility business)	Number	11,487	11,154	8,013	9,016	8,341
Voluntary service hours (Mainland utility business)	Hours	264,440	238,000	135,154	93,701	82,280

#### Remarks:

- Employees only. The scope includes mainland utility businesses, new energy and diversified businesses that are majority owned by Towngas.
- The scope includes mainland utility businesses, new energy and diversified businesses that are majority owned by Towngas.
- The following conversion factors are used to standardise the units to gigajoules (GJ): electricity (0.0036GJ/kWh), petrol (0.033GJ/L), diesel (0.036GJ/L) and natural gas (0.04GJ/m<sup>3</sup>).
- The reported GHG emission data cover the operations within (around 30%) and outside Hong Kong (around 70%). Data are consolidated on an equity basis.  
GHG emissions inventory covers six types of GHGs specified in the Kyoto Protocol. The global warming potential rates were from IPCC Second assessment report (1995).  
Regional grid emission factors were used for GHG emissions due to electricity consumption, while other emission factors were obtained from local governments and authorities, or other recognised sources.  
Scope 1 GHG emissions were adjusted to reflect the biogenic nature of landfill gas and its associated carbon emissions during use.
- From fuel combustion and vehicle emissions.
- From vehicle emissions.
- All hazardous waste and wastewater handling procedures comply with the national regulations.
- Includes all people employed by the Group, its subsidiaries, associates and joint ventures outside Hong Kong.

## 10



## GRI & ESG CONTENT INDEX

### Global Reporting Initiative (GRI) Content Index

This report was compiled in accordance with the Core Option of the GRI Sustainability Reporting Standards, and with reference to the GRI G4 Oil and Gas Sector Disclosures.

GRI Standards/ Material Topics	Disclosures	Cross Reference/Information	External Assurance	
<b>102: General Disclosures 2016</b>				
Organisational Profile	101-1	Name of the organisation	Creating Business Opportunities (P.26-27)	•
	102-2	Activities, brands, products, and services	Creating Business Opportunities (P.26-27) Appendices (P.116)	•
	102-3	Location of headquarters	Creating Business Opportunities (P.26-27)	•
	102-4	Location of operations	Creating Business Opportunities (P.25-27)	•
	102-5	Ownership and legal form	Creating Business Opportunities (P.26-27)	•
	102-6	Markets served	Creating Business Opportunities (P.25-27)	•
	102-7	Scale of the organisation	Creating Business Opportunities (P.25-27, 30-35) Contributing to Stakeholders (P.71) Key Statistics (P.99, 103)	•
	102-8	Information on employees and other workers	Key Statistics (P.99-100, 103-104)	•
	102-9	Supply chain	Contributing to Stakeholders (P.87-89)	•
	102-10	Significant changes to the organisation and its supply chain	Creating Business Opportunities (P.25-35) Contributing to Stakeholders (P.89) Data and Reporting (P.96-97)	•
	102-11	Precautionary Principle or approach	Strengthening Corporate Governance (P.92)	•
	102-12	External initiatives	Appendices (P.117-118)	•
	102-13	Membership of associations	Appendices (P.117)	•
Strategy	102-14	Statement from senior decision-maker	Managing Director's Message (P.4-7)	•
Ethics and Integrity	102-16	Values, principles, standards, and norms of behaviour	Our ESG Approach (P.12-13)	•
Governance	102-18	Governance structure	Our ESG Approach (P.18) Strengthening Corporate Governance (P.91-92)	•
Stakeholder Engagement	102-40	List of stakeholder groups	Our ESG Approach (P.19)	•
	102-41	Collective bargaining agreements	Contributing to Stakeholders (P.69-70)	•
	102-42	Identifying and selecting stakeholders	Our ESG Approach (P.19)	•
	102-43	Approach to stakeholder engagement	Our ESG Approach (P.19)	•
	102-44	Key topics and concerns raised	Our ESG Approach (P.23)	•

GRI Standards/ Material Topics	Disclosures	Cross Reference/Information	External Assurance	
Reporting Practice	102-45	Entities included in the consolidated financial statements	Data and Reporting (P.96-97) Annual Report: Independent Auditor's Report (P.85)	•
	102-46	Defining report content and topic Boundaries	Our ESG Approach (P.20-22) Data and Reporting (P.96-97)	•
	102-47	List of material topics	Our ESG Approach (P.20-22)	•
	102-48	Restatements of information	Key Statistics (P.98-104)	•
	102-49	Changes in reporting	Our ESG Approach (P.20-22) Data and Reporting (P.96-97)	•
	102-50	Reporting period	Data and Reporting (P.96-97)	•
	102-51	Date of most recent report	<b>Sustainability Report 2018</b> , published in April 2019	•
	102-52	Reporting cycle	Annual	•
	102-53	Contact point for questions regarding the report	Data and Reporting (P.96-97)	•
	102-54	Claims of reporting in accordance with the GRI Standards	Data and Reporting (P.96-97)	•
102-55	GRI content index	GRI Content Index (P.105-111)	•	
102-56	External assurance	Data and Reporting (P.96-97)	•	
<b>200: Economic</b>				
201: Economic Performance 2016	103	Management approach	Creating Business Opportunities (P.24-35) Annual Report - Chairmen's Statement (P.6)	•
	201-1	Direct economic value generated and distributed	Creating Business Opportunities (P.30) Annual Report - Report of the Directors (P.66)	•
	201-2	Financial implications and other risks and opportunities due to climate change	Protecting the Environment (P.53-55) Annual Report - Risk Factors (P.58)	•
	201-4	Financial assistance received from government	No financial assistance from HKSAR Government was received.	•
202: Market Presence 2016	103	Management approach	Creating Business Opportunities (P.25-27)	•
	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	In 2019, all standard entry level wages fulfilled the regulatory requirement.	•
204: Procurement Practices 2016	103	Management approach	Contributing to Stakeholders (P.67, 87-89)	•
	204-1	Proportion of spending on local suppliers	Contributing to Stakeholders (P.87-89)	•
205: Anti-corruption 2016	103	Management approach	Our ESG Approach (P.21-22) Strengthening Corporate Governance (P.91-93) <b>Corporate Governance</b>	•
	205-3	Confirmed incidents of corruption and actions taken	Strengthening Corporate Governance (P.94)	•
206: Anti-competitive Behaviour 2016	103	Management approach	Our ESG Approach (P.21-22) Strengthening Corporate Governance (P.91-93)	•
	206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Strengthening Corporate Governance (P.94)	•

GRI Standards/ Material Topics	Disclosures	Cross Reference/Information	External Assurance	
<b>300: Environmental</b>				
301: Materials 2016	103	Management approach	Protecting the Environment (P.51) <b>Towngas Sustainable Purchasing Policy</b>	•
	301-1	Materials used by weight or volume	Key Statistics (P.100-101,103)	•
	301-2	Recycled input materials used	Key Statistics (P.100-101)	•
302: Energy 2016	103	Management approach	Our ESG Approach (P.21-22) Protecting the Environment (P.51, 58-61) <b>Green Building</b>	•
	302-1	Energy consumption within the organisation	Key Statistics (P.100,103)	•
	302-4	Reduction of energy consumption	Protecting the Environment (P.56, 58-61) <b>Green Building</b>	•
	302-5	Reductions in energy requirements of products and services	Protecting the Environment (P.58-61)	•
	G4-OG3	Total amount of renewable energy generated by source	Creating Business Opportunities (P.31-33) Protecting the Environment (P.56-57)	•
303: Water and Effluents 2018	103	Management approach	Our ESG Approach (P.21-22) Protecting the Environment (P.51,58-61) <b>Green Building</b>	•
	303-1	Interactions with water as a shared resource	Protecting the Environment (P.51,58-61)	•
	303-2	Management of water discharge-related impacts	Protecting the Environment (P.51,58-61)	•
	303-3	Water withdrawal	Protecting the Environment (P.101,103)	•
303-4	Water discharge	Protecting the Environment (P.101,103)	•	
304: Biodiversity 2016	103	Management approach	Protecting the Environment (P.51,64-65)	•
305: Emissions 2016	103	Management approach	Our ESG Approach (P.21-22) Protecting the Environment (P.51-57) <b>Carbon Management</b>	•
	305-1	Direct (Scope 1) GHG emissions	Protecting the Environment (P.56-57) Key Statistics (P.101,103)	•
	305-2	Energy indirect (Scope 2) GHG emissions	Protecting the Environment (P.56-57) Key Statistics (P.101,103)	•
	305-4	GHG emissions intensity	Protecting the Environment (P.56-57)	•
	305-5	Reduction of GHG emissions	Protecting the Environment (P.52-57)	•
	305-7	NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions	Key Statistics (P.101,103)	•

GRI Standards/ Material Topics	Disclosures		Cross Reference/Information	External Assurance
306: Effluent and Waste 2016	103	Management approach	Our ESG Approach (P.21-22) Protecting the Environment (P.51,58-61) <b>Waste Management</b>	•
	306-1	Water discharge by quality and destination	Key Statistics (P.101,103)	•
	306-2	Waste by type and disposal method	Key Statistics (P.101,103)	•
	306-3	Significant spills	Protecting the Environment (P.61)	•
	306-4	Transport of hazardous waste	Key Statistics (P.101, 103)	•
	306-5	Water bodies affected by water discharges and/or runoff	No water bodies are significantly affected by our Hong Kong operation.	•
Products and Services	G4-OG5	Volume and disposal of formation or produced water	Key Statistics (P.101, 103)  In 2019, our Hong Kong operation did not involve formation or produced water.	•
	G4-OG7	Amount of drilling waste (drill mud and cuttings) and strategies for treatment and disposal	In 2019, our Hong Kong operation did not involve drilling waste.	•
	G4-OG8	Benzene, lead and sulfur content in fuels	The composition of town gas is regulated by the Environmental Protection Department, and the benzene, lead and sulfur contents did not exceed the permitted levels during the reporting period.	•
307: Environmental Compliance 2016	103	Management approach	Protecting the Environment (P.51)	•
	307-1	Non-compliance with environmental laws and regulations	Strengthening Corporate Governance (P.94)	•
308: Supplier Environmental Assessment 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67,87-89)	•
	308-2	Negative environmental impacts in the supply chain and actions taken	Contributing to Stakeholders (P.87-89)	•
<b>400: Social</b>				
401: Employment 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67-75)	•
	401-1	New employee hires and employee turnover	Contributing to Stakeholders (P.71) Key Statistics (P.99, 103-104)	•
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Contributing to Stakeholders (P.69)	•
402: Labour/Management Relations 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67-75)	•
	402-1	Minimum notice periods regarding operational changes	Contributing to Stakeholders (P.69-70)	•

GRI Standards/ Material Topics	Disclosures		Cross Reference/Information	External Assurance
403: Occupational Health and Safety 2018	103	Management approach	Our ESG Approach (P.21-22) Ensuring Health and Safety (P.37-42) <b>HSE Policy</b>	•
	403-1	Occupational health and safety management system	Ensuring Health and Safety (P.37-39)	•
	403-2	Hazard identification, risk assessment, and incident investigation	Ensuring Health and Safety (P.37-39)	•
	403-3	Occupational health services	Ensuring Health and Safety (P.38-42)	•
	403-4	Worker participation, consultation, and communication on occupational health and safety	Ensuring Health and Safety (P.37-39)	•
	403-5	Worker training on occupational health and safety	Ensuring Health and Safety (P.38-41)	•
	403-6	Promotion of worker health	Ensuring Health and Safety (P.38-41)	•
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Ensuring Health and Safety (P.38-42)	•
	403-9	Work-related injuries	Ensuring Health and Safety (P.38-41) Key Statistics (P.98,102)	•
	403-10	Work-related ill health	Ensuring Health and Safety (P.38-41) Key Statistics (P.98,102)	•
404: Training and Education 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67-75)	•
	404-1	Average hours of training per year per employee	Key Statistics (P.100)	•
	404-2	Programmes for upgrading employee skills and transition assistance programmes	Contributing to Stakeholders (P.68-75)	•
	404-3	Percentage of employees receiving regular performance and career development reviews	Key Statistics (P.100)	•
405: Diversity and Equal Opportunity 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67-75)	•
	405-2	Ratio of basic salary and remuneration of women to men	Key Statistics (P.99-100, 103-104)	•
406: Non-discrimination 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67-75)	•
	406-1	Incidents of discrimination and corrective actions taken	Contributing to Stakeholders (P.75)	•

GRI Standards/ Material Topics	Disclosures		Cross Reference/Information	External Assurance
407: Freedom of Association and Collective Bargaining 2016	103	Management approach	Contributing to Stakeholders (P.67-70)	•
408: Child Labour 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67, 87-89) Strengthening Corporate Governance (P.91, 93)	•
	408-1	Operations and suppliers at significant risk for incidents of child labour	Contributing to Stakeholders (P.87-89) Strengthening Corporate Governance (P.93-94)	•
409: Forced or Compulsory Labour 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67, 87-89) Strengthening Corporate Governance (P.91, 93)	•
	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	Contributing to Stakeholders (P.87-89) Strengthening Corporate Governance (P.93-94)	•
410: Security Practices 2016	103	Management approach	Our ESG Approach (P.21-22) Strengthening Corporate Governance (P.91, 93)	•
	410-1	Security personnel trained in human rights policies or procedures	Strengthening Corporate Governance (P.93)	•
412: Human Rights Assessment 2016	103	Management approach	Our ESG Approach (P.21-22) Strengthening Corporate Governance (P.91, 93)	•
	412-2	Employee training on human rights policies or procedures	Strengthening Corporate Governance (P.94)	•
413: Local Communities 2016	103	Management approach	Ensuring Health and Safety (P.37, 45-49) Contributing to Stakeholders (P.67, 82-86) <b>District Council Focus Team</b> <b>Social Projects</b> <b>Towngas Concession Schemes</b>	•
	413-1	Operations with local community engagement, impact assessments and development programmes	Creating Value for Society (P.82-86)	•
	413-2	Operations with significant actual and potential negative impacts on local communities	Ensuring Health and Safety (P.37, 45-49)	•
	G4-OG11	Number of sites that have been decommissioned and sites that are in the process of being decommissioned	In 2019, our Hong Kong operation did not involve such sites.	•
414: Supplier Social Assessment 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67, 87-89)	•
	414-2	Negative social impacts in the supply chain and actions taken	Contributing to Stakeholders (P.87-89)	•

GRI Standards/ Material Topics	Disclosures		Cross Reference/Information	External Assurance
416: Customer Health and Safety 2016	103	Management approach	Our ESG Approach (P.21-22) Ensuring Health and Safety (P.37, 43-49) Contributing to Stakeholders (P.67, 76-81) <b>Customer Safety</b> <b>Public Safety</b>	•
	416-1	Assessment of the health and safety impacts of product and service categories	Ensuring Health and Safety (P.43-49)	•
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Strengthening Corporate Governance (P.94)	•
417: Marketing and Labelling 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67, 76-81)	•
	417-2	Incidents of non-compliance concerning product and service information and labelling	Contributing to Stakeholders (P.79) Strengthening Corporate Governance (P.94)	•
	417-3	Incidents of non-compliance concerning marketing communications	Contributing to Stakeholders (P.79) Strengthening Corporate Governance (P.94)	•
418: Customer Privacy 2016	103	Management approach	Our ESG Approach (P.21-22) Contributing to Stakeholders (P.67, 76-81) <b>Privacy Policy Statement</b>	•
	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Contributing to Stakeholders (P.80)	•
419: Socioeconomic Compliance 2016	103	Management approach	Our ESG Approach (P.37) Ensuring Health and Safety (P.67) Strengthening Corporate Governance (P.91)	•
	419-1	Non-compliance with laws and regulations in the social and economic area	Strengthening Corporate Governance (P.94)	•
Emergency Preparedness	103	Management approach	Our ESG Approach (P.21-22) Ensuring Health and Safety (P.37, 46-48) <b>Public Safety</b>	•
Asset Integrity and Process Safety	103	Management approach	Our ESG Approach (P.21-22) Ensuring Health and Safety (P.37, 43-39) <b>Network Safety</b>	•
	G4-OG13	Number of process safety events, by business activity	Ensuring Health and Safety (P.47-48)	•
Fossil Fuel Substitutes	103	Management approach	Creating Business Opportunities (P.31-33) Protecting the Environment (P.56-57) <b>Landfill Gas</b>	•
	G4-OG14	Volume of biofuels produced and purchased meeting sustainability criteria	Creating Business Opportunities (P.31-33) Protecting the Environment (P.56-57)	•



## Environmental, Social and Governance Reporting Guide (ESG Guide) Content Index

This Report was in compliance with the mandatory disclosure requirements and “comply or explain” provisions of the latest ESG Guide of the Stock Exchange of Hong Kong Limited.

Aspects	General Disclosures and KPIs	Cross Reference/Information
<b>A. Environmental</b>		
A1 Emissions	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste	Protecting the Environment (P.51) Strengthening Corporate Governance (P.94) <b>HSE Policy</b> <b>Carbon Management</b>
A1.1	The types of emissions and respective emissions data	Key Statistics (P.101,103)
A1.2	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity	Protecting the Environment (P.52-57) Key Statistics (P.101,103)
A1.3	Total hazardous waste produced (in tonnes), and, where appropriate, intensity	Key Statistics (P.101,103)
A1.4	Total non-hazardous waste produced (in tonnes), and, where appropriate, intensity	Key Statistics (P.101,103)
A1.5	Description of emission target(s) set and steps taken to achieve them	Protecting the Environment (P.52-57) Key Statistics (101,103)
A1.6	Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them	Protecting the Environment (P.58-63) Key Statistics (101,103) <b>Waste Management</b>
A2 Use of Resources	General Disclosure Policies on the efficient use of resources, including energy, water and other raw materials	Protecting the Environment (P.51) <b>HSE Policy</b> <b>Green Building</b>
A2.1	Direct and/or indirect energy consumption by type in total and intensity	Key Statistics (P.100, 103)
A2.2	Water consumption in total and intensity	Key Statistics (P.101, 103)
A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them	Protecting the Environment (P.58-63) Key Statistics (P.100, 103)
A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them	Protecting the Environment (P.58-63) Key Statistics (P.100, 103)
A2.5	Total packaging material used for finished products (in tonnes)	Key Statistics (P.101)

Aspects	General Disclosures and KPIs	Cross Reference/Information
A3 The Environment and Natural Resources	General Disclosure Policies on minimising the issuer's significant impacts on the environment and natural resources	Protecting the Environment (P.51) <b>HSE Policy</b>
A3.1	Description of the significant impacts of activities on the environment and natural resources and actions taken to manage them	Protecting the Environment (P.52-65)
A4 Climate Change	General Disclosure Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer	Protecting the Environment (P.51)
A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them	Protecting the Environment (P.52-57)
<b>B. Social</b>		
<b>Employment and Labour Practices</b>		
B1 Employment	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare	Contributing to Stakeholders (P.67) Strengthening Corporate Governance (P.94)
B1.1	Total workforce by gender, employment type, age group and geographical region	Contributing to Stakeholders (P.68-75) Key Statistics (P.99, 103)
B1.2	Employee turnover rate by gender, age group and geographical region	Contributing to Stakeholders (P.68-75) Key Statistics (P.99, 103)
B2 Health and Safety	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards	Ensuring Health and Safety (P.37) Strengthening Corporate Governance (P.94) <b>HSE Policy</b>
B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year	Key Statistics (P.98,102)
B2.2	Lost days due to work injury	Key Statistics (P.98,102)
B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored	Ensuring Health and Safety (P.38-42)

Aspects	General Disclosures and KPIs		Cross Reference/Information
B3 Development and Training	General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities	Contributing to Stakeholders (P.67)
	B3.1	Percentage of employees trained by gender and employee category	Key Statistics (P.100)
	B3.2	Average training hours completed per employee by gender and employee category	Key Statistics (P.100)
B4 Labour Standards	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour	Contributing to Stakeholders (P.67) Strengthening Corporate Governance (P.91, 94)
	B4.1	Description of measures to review employment practices to avoid child and forced labour	Strengthening Corporate Governance (P.93)
	B4.2	Description of steps taken to eliminate such practices when discovered	Strengthening Corporate Governance (P.93)
	<b>Operating Practices</b>		
B5 Supply Chain Management	General Disclosure	Policies on managing environmental and social risks of the supply chain	Contributing to Stakeholders (P.67, 87-89) Strengthening Corporate Governance (P.94) <b>CSR Code of Practice for Suppliers</b>
	B5.1	Number of suppliers by geographical region	Contributing to Stakeholders (P.87-89)
	B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored	Contributing to Stakeholders (P.87-89)
	B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored	Contributing to Stakeholders (P.87-89)
	B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored	Contributing to Stakeholders (P.87-89)

Aspects	General Disclosures and KPIs		Cross Reference/Information
B6 Product Responsibility	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress	Ensuring Health and Safety (P.37) Contributing to Stakeholders (P.67, 76-81) Strengthening Corporate Governance (P.91, 94) <b>Customer Safety Privacy Policy Statement Service Pledge</b>
	B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons	No relevant case was recorded.
	B6.2	Number of products and service related complaints received and how they are dealt with	Contributing to Stakeholders (P.76-81) <b>Service Pledge</b>
	B6.3	Description of practices relating to observing and protecting intellectual property rights	Strengthening Corporate Governance (P.91, 93) <b>Code of Conduct</b>
	B6.4	Description of quality assurance process and recall procedures	Ensuring Health and Safety (P.43-49) <b>Total Solution Services</b>
	B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored	Contributing to Stakeholders (P.67, 76-81) <b>Privacy Policy Statement</b>
B7 Anti- corruption	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering	Strengthening Corporate Governance (P.91, 94) <b>Corporate Governance</b>
	B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases	Strengthening Corporate Governance (P.94)
	B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored	Strengthening Corporate Governance (P.91-93) <b>Whistleblowing Policy</b>
	B7.3	Description of anti-corruption training provided to directors and staff	Strengthening Corporate Governance (P.93-94)
<b>Community</b>			
B8 Community Investment	General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests	Contributing to Stakeholders (P.91) <b>Social Projects</b>
	B8.1	Focus areas of contribution	Contributing to Stakeholders (P.82-86)
	B8.2	Resources contributed to the focus area	Contributing to Stakeholders (P.82-86) Key Statistics (P.102, 104)

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## APPENDICES

## Appendix I: Our Roles and Services

Hong Kong Gas Business	
The Hong Kong and China Gas Company Limited	<ul style="list-style-type: none"> <li>Gas production and distribution</li> <li>Marketing and sale of gas and gas appliances</li> <li>Comprehensive after-sales services</li> </ul>
Towngas Engineering Academy	<ul style="list-style-type: none"> <li>Technical and professional training</li> </ul>
Quality Testing Services Limited	<ul style="list-style-type: none"> <li>Appliance and polyethylene (PE) joint testing and gas meter calibration</li> </ul>
Mainland Utility Businesses	
Hong Kong & China Gas Investment Limited	<ul style="list-style-type: none"> <li>Management of Towngas investments in mainland China</li> </ul>
Hong Kong and China Water Limited	<ul style="list-style-type: none"> <li>Management of water business investments in mainland China</li> </ul>
Towngas China Company Limited	<ul style="list-style-type: none"> <li>Focus on piped city gas projects in mainland China</li> </ul>
Towngas Engineering Academy	<ul style="list-style-type: none"> <li>Technical and professional training</li> </ul>
New Energy Business	
ECO Environmental Investments Limited	<ul style="list-style-type: none"> <li>Liquefied petroleum gas (LPG), liquefied natural gas (LNG) and compressed natural gas (CNG) filling stations in Hong Kong and mainland China</li> <li>Construction and operation of ECO Aviation Fuel Facility (EAFF) in Hong Kong</li> <li>Exploration, research, development and utilisation of new and environmentally friendly energy sources, such as coalbed methane, coal-based chemical projects, tar oil and biomass activities</li> <li>Infrastructure and logistics projects in mainland China</li> <li>An oil exploration and production project in Thailand</li> </ul>
Diversified Businesses	
GH-Fusion Corporation Limited (a joint venture with British Fusion Group)	<ul style="list-style-type: none"> <li>Manufacture and supply of PE products and equipment for gas and water piping systems</li> </ul>
G-Tech Piping System (Zhongshan) Company Limited	<ul style="list-style-type: none"> <li>Manufacture of quality PE piping</li> </ul>
Towngas Telecommunications Company Limited	<ul style="list-style-type: none"> <li>Provision of telecommunications infrastructure and quality network solutions in Hong Kong and mainland China</li> </ul>
U-Tech Engineering Company Limited	<ul style="list-style-type: none"> <li>Specialises in a variety of projects, including building services, LPG projects, civil works, waterworks and other pipeline infrastructure projects</li> </ul>
P-Tech Engineering Company Limited	<ul style="list-style-type: none"> <li>Plant design and construction</li> <li>Planning and operation of landfill gas utilisation projects in Hong Kong</li> </ul>
M-Tech Metering Solutions Company Limited	<ul style="list-style-type: none"> <li>Development and supply of smart metering solutions for the gas industry</li> </ul>
S-Tech Technology Holding Limited	<ul style="list-style-type: none"> <li>Product development, solution implementation and system integration</li> <li>Provision of cloud computing solutions and other information technology products as well as consulting services to companies</li> </ul>

## Appendix II: Memberships in Associations

## Hong Kong and Mainland China

- Association of Engineering Professionals in Society Ltd.
- British Chamber of Commerce in Hong Kong
- Business Environment Council Ltd.
- China Gas Association (Beijing)
- Employers' Federation of Hong Kong
- Federation of Hong Kong Industries
- Green Cross Group
- Hong Kong Association of Energy Engineers
- Hong Kong Bakery and Confectionery Association Ltd.
- Hong Kong Computer Society
- Hong Kong General Chamber of Commerce
- Hong Kong Green Building Council
- Hong Kong Green Finance Association
- Hong Kong Institute of Human Resources Management
- Hong Kong Institute of Marketing
- Hong Kong Management Association
- Hong Kong Quality Management Association
- Hong Kong Retail Management Association
- Hong Kong Waste Management Association
- Institution of Fire Engineers (Hong Kong Branch)
- The Chamber of Hong Kong Listed Companies
- The Chinese General Chamber of Commerce
- The Chinese Manufacturers' Association of Hong Kong
- The Goods Vehicle Fleet Owners Association Ltd.
- The Green Council
- The Green Earth Limited
- The Hong Kong Advertisers' Association
- The Institute of Purchasing & Supply of Hong Kong
- World Wide Fund for Nature Hong Kong

## International

- Institution of Gas Engineers and Managers (IGEM)
- International Gas Union (IGU)
- World Energy Council
- World LP Gas Association

## Appendix III: External Environmental, Social and Governance Charters and Initiatives

Charters and Initiatives	Issuing Bodies
<b>Corporate Governance</b>	
Companies Ordinance, Chapter 622 of the laws of Hong Kong	The Government of the Hong Kong Special Administrative Region
Securities and Futures Ordinance, Chapter 571 of the laws of Hong Kong	
Corporate Governance Code, Appendix 14 to the Listing Rules	The Stock Exchange of Hong Kong Limited
Environmental, Social and Governance Reporting Guide, Appendix 27 to the Listing Rules	
<b>Environment</b>	
Carbon Footprint Repository for Listed Company in Hong Kong	Environment Bureau
Carbon Reduction Charter: Carbon Audit • Green Partners	
Energy Saving Charter	Environment Bureau and Electrical and Mechanical Services Department
4Ts Charter	
Hong Kong Green Organisation	Environmental Campaign Committee
IAQwi\$e Label	
Wastewi\$e Label	
"Let's save 10L Water" Campaign	
"Let's save 10L Water" Campaign	Water Supplies Department
Sustainable Procurement Charter	Green Council
Hong Kong Zero Carbon Partnership	The University of Hong Kong
Innovation Partner of CarbonCare Open Innovation Lab	CarbonCare InnoLab
Green Bottle Charter	The Green Earth
Hong Kong Green Shop Alliance	The Hong Kong Green Building Council
<b>Occupational Safety &amp; Health</b>	
Safety Charter	Occupational Safety and Health Council
International Safe Workplace Program	
Charter on Preferential Appointment of OSH Star Enterprises	
Joyful@Healthy Workplace Charter	
<b>Social Responsibility</b>	
Barrier-free Company	The Hong Kong Council of Social Service
Talent-Wise Employment Charter and Inclusive Organisations Recognition Scheme	Labour and Welfare Bureau

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## VERIFICATION STATEMENT



### Scope of Verification

Hong Kong Quality Assurance Agency (HKQAA) has been commissioned by The Hong Kong and China Gas Company Limited (Towngas) to undertake an independent verification for its Environmental, Social and Governance (ESG) Report 2019 (the Report). The scope of HKQAA's verification covers the information on ESG performance of Towngas businesses in Hong Kong and mainland China for the period from 1st January 2019 to 31st December 2019.

The aim of this verification is to provide a reasonable assurance on the reliability of the report contents. The report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option and with reference to the GRI G4 Oil and Gas Sector Disclosures. It also fulfils the "comply or explain" provisions as well as "recommended disclosures" of the Environmental, Social and Governance Reporting Guide (ESG Guide), under Appendix 27 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.

### Level of Assurance and Methodology

The process applied in this verification was referring to the International Standard on Assurance Engagements 3000 (Revised), Assurance Engagements Other Than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standards Board. Our evidence gathering process was designed to obtain a reasonable level of assurance for devising the verification conclusion.

In order to understand the process that Towngas adopted to ascertain the key ESG issues and impacts, the Report compilation process was discussed including stakeholder engagement and materiality assessment processes. Also, system and process for collecting, collating and reporting ESG performance data were verified. Our verification procedure covered reviewing relevant documentation, interviewing responsible personnel with accountability for preparing the Report and verifying the selected representative sample of data and information used for preparing the Report. Raw data and supporting evidence of the selected samples were also thoroughly examined during the verification process.

### Independence

Towngas is responsible for the collection and presentation of the information presented. HKQAA does not involve in calculating, compiling, or in the development of the Report. Our verification activities are independent from Towngas.

### Conclusion

On the basis of our verification results and in accordance with the verification procedures undertaken, it is the opinion of the HKQAA's verification team that:

- The Report has been prepared in accordance with the GRI Standards: Core option and with reference to the GRI G4 Oil and Gas Sector Disclosures, also it fulfills the ESG Guide for disclosure;
- The Report illustrates Towngas ESG performance, covering all material and relevant aspects in a balanced, comparable, clear and timely manner; and
- The data and information disclosed in the Report are reliable and complete.

The Report reflects Towngas ESG context and materiality. Also, it allows stakeholders to understand the commitments and stewardship of Towngas towards sustainability.

### Signed on behalf of Hong Kong Quality Assurance Agency

**Connie Sham**  
Head of Audit  
March 2020

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 in the [online questionnaire](#) or contact us:

Corporate Sustainability Department  
The Hong Kong and China Gas Company Limited

Address	21 <sup>st</sup> Floor, 363 Java Road, North Point, Hong Kong
Fax	(852) 2590 6344
Email	<a href="mailto:cad@towngas.com">cad@towngas.com</a>
Website	<a href="http://www.towngas.com">www.towngas.com</a>