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# ABOUT THIS REPORT



## Approach to Reporting

The Hong Kong and China Gas Company Limited (Towngas) has been reporting its environmental, social and governance (ESG) performance on an annual basis for over two decades. In this report, we cover our approach to ESG, which is based on our Towngas ESG Strategy, disclose our achievements in six key areas, and acknowledge where further improvements can be made.

## Reporting Scope and Boundary

Unless otherwise indicated, this report covers the material issues identified at Towngas and its subsidiaries (the Group) during the period from 1 January 2023 to 31 December 2023, in alignment with the Group's financial year.

## Reporting Guideline

This report was prepared in accordance with the Global Reporting Initiative (GRI) Universal Standards 2021 and GRI 11 Oil and Gas Sector Disclosures 2021, as well as the International Sustainability Standards Board's (ISSB) IFRS® Sustainability Disclosure Standards – IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures. The report also fulfils the mandatory disclosure requirements and the "comply or explain" provisions of the 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). For climate-related disclosures, it aligns with the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

For the GRI, IFRS S1 and S2, ESG Guide and TCFD Content Indexes, please refer to our [corporate website](#).

This report was also prepared with reference to the

- Chinese Academy of Social Sciences Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0); and
- Sustainability Accounting Standards Board (SASB) Standards for the Gas Utilities & Distributors sector.

This report aims to provide a balanced presentation of the Group's ESG management approach and performance during the year. Consistent methodologies are employed, using year-on-year data, for a meaningful comparison.

## Independent Assurance

We obtain independent assurance from a third party for the content of our ESG Report. Deloitte Touche Tohmatsu (Deloitte) was engaged to provide limited assurance on selected sustainability information contained in this report. The scope of work carried out by Deloitte is detailed in their assurance report.

## Acknowledgements

We sincerely appreciate our stakeholders for their contributions to this report, including their time, knowledge and insights. We also thank our employees, partners, customers and other stakeholders who share our sustainability vision.

## Your Feedback

The full version of this report is available on the [Towngas website](#) and the [website of the SEHK](#). Your comments on this report and opinions of our future ESG strategy can be shared with us by completing the [online questionnaire](#) or emailing us at [esg@towngas.com](mailto:esg@towngas.com).

# BOARD STATEMENT

The Towngas Board of Directors (the Board) is committed to our environmental, social and governance (ESG) development for a sustainable future. This commitment is reflected in our Vision and Mission, which guide our evolving ESG strategy.

Our ESG Strategy covers six key areas:

- Energising the Ecosystem
- Neutralising our Footprint
- Engaging with Society
- Revitalising our Strengths
- Greening the Future
- Young-at-heart with Resilience

Material ESG issues are prioritised and regularly reviewed through our engagement with stakeholders as well as monitoring of global trends. The Board has the overall responsibility of overseeing these material ESG issues and evaluating, determining and integrating relevant risks and opportunities into our key governance processes. Our governance procedures are applied to all areas of decision-making and strategic planning across Towngas.

To further integrate ESG practices into our business operations, Towngas has elevated the ESG Committee to the board level and established the Board ESG Committee (BESGC). The BESGC, chaired by the Managing Director, is responsible for assisting the Board in overseeing management of all ESG-related matters within the Group. Updates on ESG-related policies, initiatives, progress, goals, targets and achievements are reported and discussed.

The Board will continue our commitment to ESG efforts in every aspect of our operations as we work towards creating a sustainable world and long-term value for stakeholders.



# CHAIRMEN'S STATEMENT



**Dr. Lee Ka-kit**  
*Chairman*

**Dr. Lee Ka-shing**  
*Chairman*

As a clean and smart energy supplier, we are committed to building a harmonious world where our human and environmental resources are balanced and social and ecological benefits are unified. Our ultimate goal is to create a sustainable society. To that end, we are forging ahead and fulfilling our commitment to create long-term benefits for our planet, society and stakeholders. In an uncertain global business environment, we are well aware that our business will encounter various challenges. However, we firmly believe that these challenges also present significant opportunities for us to demonstrate our resilience, strength and dedication to fulfilling our sustainable development commitments.

Currently, the world economy is being influenced by the geopolitical situation, and the international energy market remains fragile. Coupled with the increasing frequency of extreme weather events caused by climate change, there is a global push for an accelerated energy transition to improve energy security and address carbon emissions. Under the national “30-60” dual carbon goals, innovation in the field of energy technology is rapidly developing, and a new energy system is quickly being built. The Group has also been actively seeking innovative energy solutions that support low-carbon transformation. This mission is indispensable for an energy company and is part of our responsibility to our planet, society and future generations. Therefore, the Group is committed to achieving carbon neutrality through energy transition and innovation by 2050. An interim carbon reduction target for Hong Kong's gas business was also formulated during the year.

Hydrogen, as a clean fuel for energy transition, will become an important part of the future national energy system, and Hong Kong is currently formulating a development strategy based on this fuel. Towntgas is also developing projects to directly extract hydrogen from its gas network in Hong Kong for electricity generation to charge electric vehicles. In addition, it is installing equipment at a Citybus depot to supply hydrogen for public buses as part of a green transportation initiative. On the Chinese mainland, the Group is participating in a feasibility study on blending hydrogen into the natural gas pipelines and as an end-use energy. By intensifying the green transformation of the existing gas pipeline network, it can reduce carbon emissions and achieve economic benefits.

Low-carbon transformation is a shared vision of countries worldwide. To realise this vision, we are working closely with the government, business partners and relevant stakeholders. During the year, the third TERA-Award Smart

Energy Innovation Competition, jointly organised by the Group and State Power Investment Corporation Limited attracted a record-high 450 submissions of zero-carbon technology entrepreneurial projects from 59 countries and regions globally. This impressive participation rate demonstrated how effective the platform has been in bringing together global energy technology entrepreneurs to create a zero-carbon world through innovative technologies and jointly promote green economic development to protect our home.

Furthermore, the Group has invested in an emerging energy storage company, EnerVenue, which focuses on new nickel-hydrogen battery technologies that ensure battery safety while reducing application costs. These technologies have broad and long-term applications in solar photovoltaics, wind energy, microgrids and rechargeable piles. EnerVenue has successfully attracted multiple investors, including Aramco Ventures, a subsidiary of Saudi Arabian Oil Group.

At the same time, we place great importance on the needs of our employees, customers, suppliers and communities. We provide training to employees to help them develop diverse skills, offer low-carbon energy solutions to customers to reduce emissions, promote innovative strategies to suppliers to accelerate their transformation, and advocate for energy education to nurture the next generation. All of these efforts are part of our commitment to establish a low-carbon economy in a fair and just manner towards a Just Transition.

Over the past year, we received numerous ESG-related awards from different organisations, including the Hong Kong Institute of Certified Public Accountants, Occupational Safety and Health Council, Federation of Hong Kong Industries, Office of the Privacy Commissioner for Personal Data, and The Hong Kong Jockey Club. Behind these achievements is the trust and support of all our stakeholders. We deeply understand that only through joint efforts from all sectors can we promote sustainable development – for our country, our city and our future generations.

On behalf of the Board of Directors, we would like to express our sincere gratitude to every employee, customer, shareholder and investor. Moving forward, let us continue to work hand in hand!

**Dr. Lee Ka-kit**  
*Chairman*

**Dr. Lee Ka-shing**  
*Chairman*

Hong Kong, 20 March 2024

# MANAGING DIRECTOR'S STATEMENT



Although the global economy slowly began to recover in 2023, the climate crisis and energy scarcity remained severe. In the face of these unprecedented challenges and difficulties, we recognised the importance of enhancing our ability to navigate this complex and rapidly-changing world, while also reducing the potential risks for our business and improving our environmental, social and governance (ESG) performance.

After more than 160 years of development, Towngas has evolved from a company providing city gas services into one that is achieving synergistic growth among our water and environment, renewable energy, extended businesses and gas supply chain business segment. ESG today permeates every facet of our operations and is driving the Group towards a green and sustainable future. As part of our commitment to a sustainable world powered by green energy, in 2023, we updated our corporate Vision and Mission. This grand objective highlights the Group's ambitions, responsibilities and values.

Over the past year, we made remarkable progress in our ESG journey. This included the distinction of being the only gas utility company to be listed in the Dow Jones Sustainability Asia Pacific Index for the second consecutive year. We also gained recognition from S&P Global with the Top 1% S&P Global ESG Score (China) and were featured in their inaugural Sustainability Yearbook (China). Locally, the Group was included in the Hang Seng Corporate Sustainability Index for a 13th consecutive year, with our rating upgraded from "AA" to "AA+". Additionally, we achieved four top rankings in The Chinese University of Hong Kong Business School's Business Sustainability Index. All these accolades reflect the external recognition of our leadership has received in the field of ESG.

## Moving towards Carbon Neutrality, Supporting a Just Transition

The Group is committed to achieving carbon neutrality by 2050, in alignment with the national "30-60" dual carbon goals and the Hong Kong SAR Government's 2050 carbon neutrality strategy. To that end, we formulated a decarbonisation strategy for Hong Kong's gas business, including the replacement of fossil fuels by zero-carbon fuels (such as green naphtha, green methane, green hydrogen, green methanol) in phases towards our target of reducing the total carbon intensity of town gas use by 36% (2019 baseline). In addition to reducing greenhouse gas emissions in our operations, we also provide low-carbon energy solutions to our customers, ensuring they have access to reliable, affordable and sustainable energy.

In 2023, we started incorporating ESG Due Diligence and Internal Carbon Pricing into our investment decision-making process and seizing opportunities for low-carbon transformation. In terms of financing channels, our subsidiary Towngas Smart Energy Company Limited became the first Hong Kong enterprise on the Chinese mainland to issue a sustainability-linked Panda Bond. The proceeds from this green bond are being used to promote low-carbon transformation.

Towngas attaches great importance to the diverse needs of our stakeholders during the energy transition. To safeguard ecosystems and conserve biodiversity, our renewable energy business installs solar photovoltaic systems on building rooftops to create Virtual Plants, thereby avoiding the construction of large-scale power projects in areas rich in biodiversity. Moreover, we provide training and cross-functional job rotation opportunities to our employees, enabling them to acquire the latest knowledge and skills in new energy, develop diversified skills and cultivate multiple talents. As for our suppliers, we work closely with them to accelerate their low-carbon transformation. This includes providing tools to quantify their carbon emissions and assisting them in identifying climate-related transition risks, both of which will help to make our supply chain more resilient.

## Respecting the Elderly, Caring for the Young, Investing in the Future

As Hong Kong is becoming an aging society, we are devoting more resources towards the elderly and helping them maintain their independence with employment opportunities that enhance their quality of life. Towngas has also been harnessing Internet of Things (IoT) technology to develop smart solutions, including remote control devices and an automatic gas supply cut-off function for stoves. These solutions improve home safety, which not only allows elderly users to continue enjoying the pleasures of cooking but also relieves stress for their caregivers. For families in need, our Company launched the Sending Warmth to Thousands with Smart Technology programme under which we committed to donate 10,000 Smart Controllers and Smart Meters.

In 2023, we marked the 24th consecutive year of our Rice Dumpling for the Community programme. During this event, we set a Guinness World Record™ for "the most people making rice dumplings simultaneously online and in a single venue". We also distributed a total of 200,000 rice dumplings to the elderly and those in need in celebration of the Dragon Boat Festival. Additionally, we organised three Sensory Restaurant on Wheels™ events with soft meal dim sum provided to elderly people with swallowing difficulties, enabling them to maintain their dignity while eating as well as their physical and mental well-being.

For the next generation, Towngas fully supports the Strive and Rise Programme with activities such as Towngas Green Day to educate students on topics related to environmental protection,

our low-carbon initiatives and ESG. We also organised the Towngas Green Flame Future Lab carnival for families, launched the Towngas Green Flame Energy Scientist Programme and developed our Energypedia learning cards. In collaboration with Commercial Radio Hong Kong, we introduced a new programme called *ESG 101*, in which experts and scholars discuss ESG concepts. All these initiatives raised ESG awareness among young people and the general public.

## Enhancing Governance, Upholding Integrity

During the year, the Group elevated the ESG Committee to the Board level. It also established ESG Steering Committee that work in collaboration to improve the overall ESG performance of our business operations. The variable compensation of relevant senior executives has also been linked with significant ESG targets, reflecting the Group's commitment to ESG and driving the enhancement of ESG performance.

As a public utility, we have always placed a high priority on the protection of our customers' data. Accordingly, we established a Privacy Management Programme online platform to enable digitalised operations and protect customers' personal information more effectively.

## Overcoming Adversity, Sustaining our Strengths

Although the future may be full of uncertainties, we firmly believe in "Overcoming Adversity, Sustaining our Strength". With unity and determination, we are committed to promoting the steady development of our Group's businesses, leveraging our strengths to adapt to changing times, fulfilling societal and national needs, and contributing to the sustainable development of society. This is our responsibility, our mission and ongoing source of strength.

**Mr. Peter Wong Wai-yeo**  
Managing Director  
Hong Kong, 20 March 2024

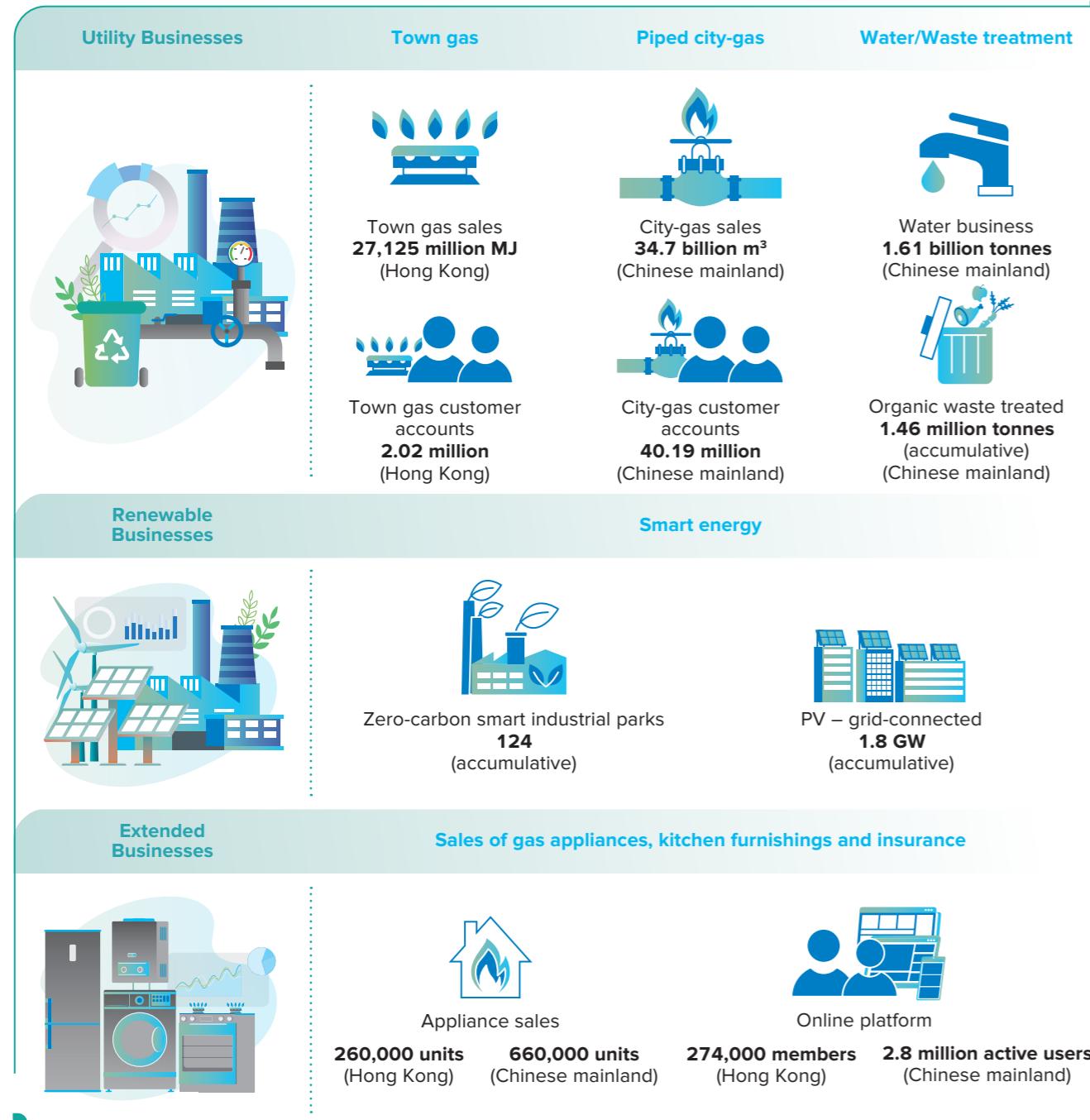
# BUSINESS PROFILE

## Towngas: More than 160 Years of Service

Towngas was founded in 1862 as Hong Kong's first public utility. Our Hong Kong-based business has evolved from simply supplying fuel for street lamps to an integrated clean energy supplier in Hong Kong and on the Chinese mainland. Currently, Towngas, a limited liability company, is incorporated and headquartered in Hong Kong and listed on The Stock Exchange of Hong Kong Limited (Stock Code: 3).

More information on the expansion of our business portfolio in 2023 is available in our [Annual Report 2023](#).

### 2023 Business Profile



### Financial Analysis

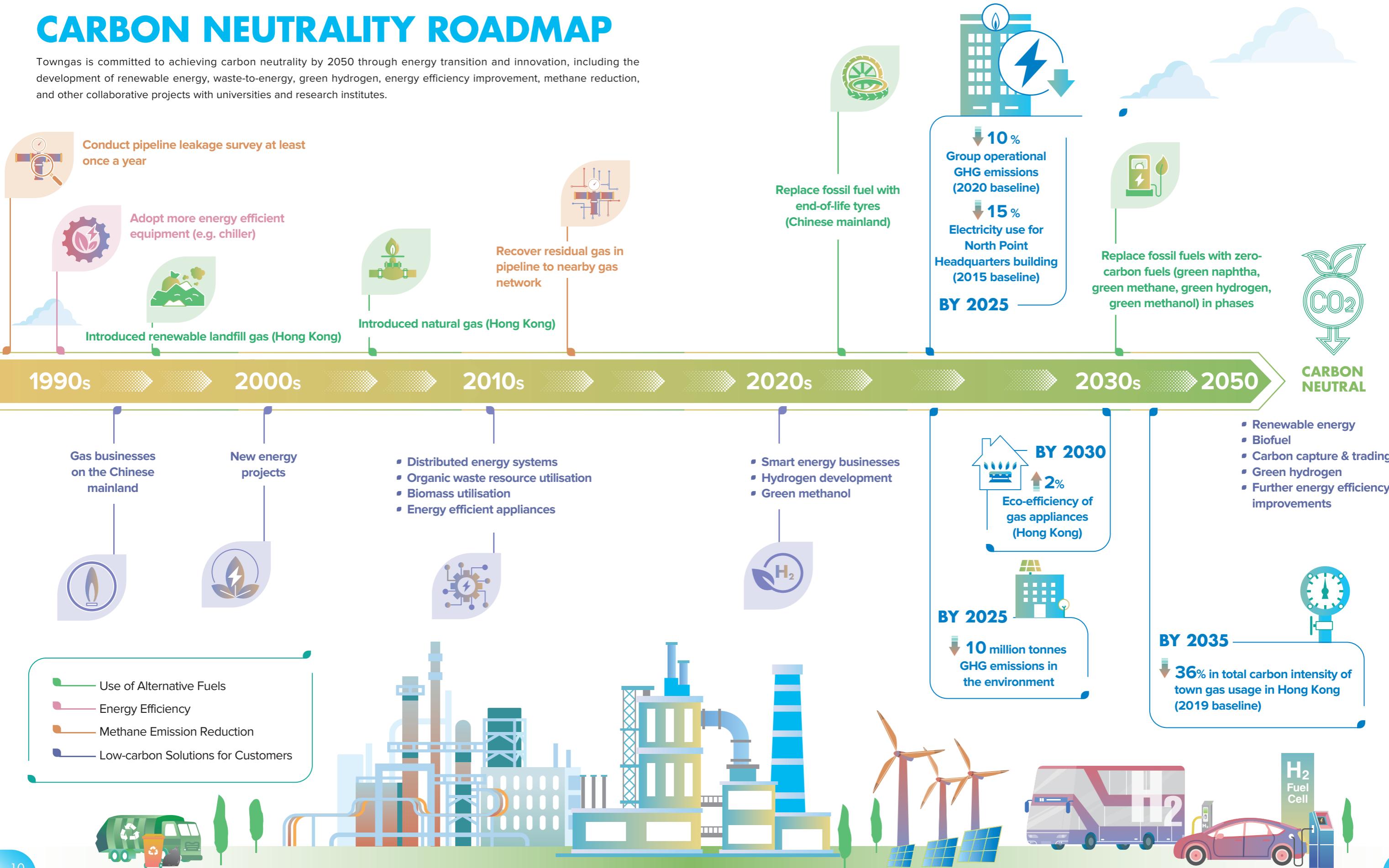


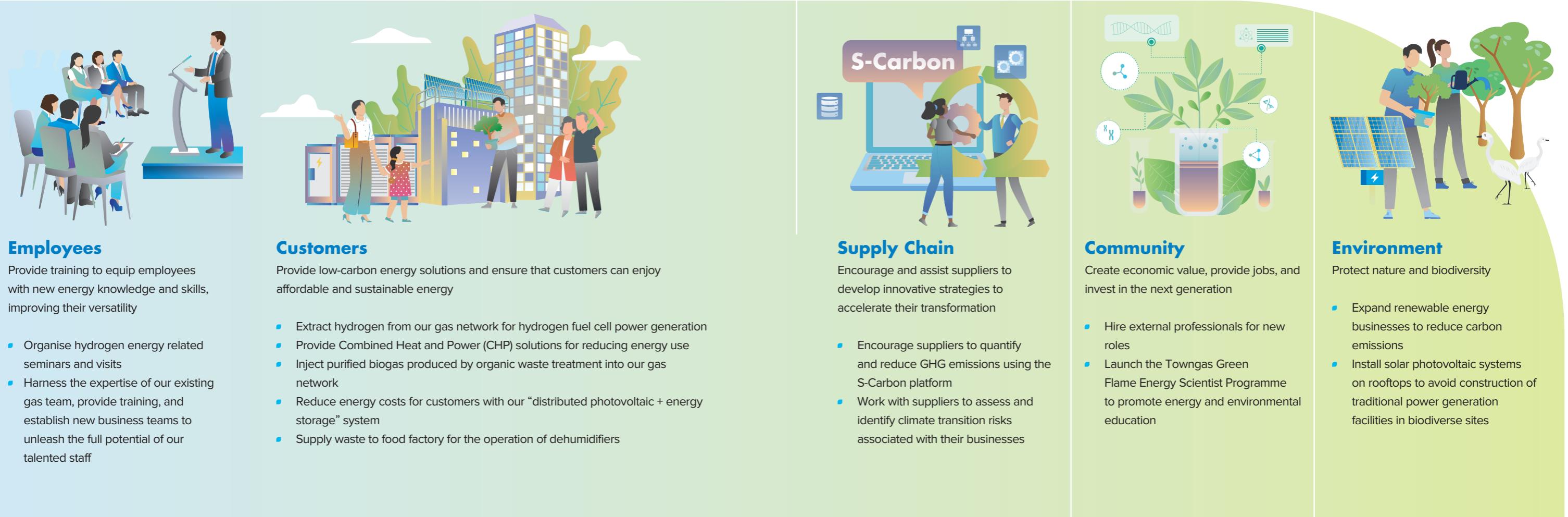
Based in Hong Kong, Towngas has a portfolio comprising **774** projects\* in 29 provincial regions on the Chinese mainland, as well as one in Thailand.



# CARBON NEUTRALITY ROADMAP

Towngas is committed to achieving carbon neutrality by 2050 through energy transition and innovation, including the development of renewable energy, waste-to-energy, green hydrogen, energy efficiency improvement, methane reduction, and other collaborative projects with universities and research institutes.





# JUST TRANSITION

The energy transition will undoubtedly have a positive impact on how we address climate change, but it will also give rise to new challenges. In this process, Towngas is committed to ensuring a “Just Transition” to a low-carbon economy in a fair and equitable manner.



# 2023 HIGHLIGHTS



## Energising the Ecosystem

### Biodiversity Protection

- Accessed nature-related dependencies and impacts of our renewable energy business and its value chain



### Environmental Management

- Towngas and 51 of its project companies are ISO 14001 certified

### Resources Management

- Electricity use at North Point Headquarters building reduced by 13.5% (2023 vs 2015)



## Neutralising our Footprint

### Climate Change Management

- Incorporated ESG Due Diligence and Internal Carbon Pricing in investment decision-making processes to seize low-carbon opportunities and investments
- Extended Scope 3 GHG emissions quantification to the Group-level



## Engaging with Society

### Community Investment

- >42,000 households benefited from Towngas Concession Schemes totalling HK\$24 million
- Volunteer service hours:
  - 14,487 (Hong Kong)
  - >440,000 (Mainland Utility Businesses)



### GHG Emissions Reduction

- Launched self-developed Towngas Operation Platform for methane leakage management (Chinese mainland)
- Utilised fossil fuel with end-of-life tyres to produce green methanol (Chinese mainland)



### Reliable Gas Supply

- Achieved a 99.992% uninterrupted town gas supply rate
- Established a gas supply chain business segment to ensure reliable gas supply



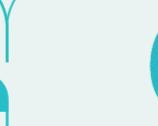
### Partnerships



## Revitalising our Strengths

### ESG Governance

- Established the Board ESG Committee to provide effective oversight of all ESG-related matters
- 5% of the variable compensation of the Managing Director and senior executives is linked to the achievement of ESG objectives



## Greening our Future

### Open Innovation

- TERA-Award 3rd edition received record-high 450 submissions from 59 countries and regions
- Developed smart appliances, controllers and meters with IoT technology



## Young-at-heart with Resilience

### Diversity and Inclusion

- Gender pay ratio (basic salary): 1:1 (Hong Kong)
- Organised Towngas Diversity & Inclusion Day with over 400 visits

### Learning and Development

- Average training hours per employee: 92.3 (Group)



### Supplier Engagement

- Adopted the S-Carbon platform to approximately 90% suppliers<sup>1</sup> for GHG quantification
- Assessed and identified climate-related transition risks of our suppliers (Mainland Utility Businesses)



### Business Integrity

- Provided anti-corruption training to the Board



### Data Privacy

- Upgraded the Privacy Management Programme online platform to enhance privacy management



### Green and Sustainable Finance

- Over HK\$5 billion in green and sustainable finance across the Group
- First Hong Kong-funded enterprise to issue a sustainability-linked Panda Bond on the Chinese mainland



### Health and Safety

- 1,190,700 regular safety inspections for customers (Hong Kong)
- Group Lost-time Injury Frequency Rate (accidents per 1,000,000 work-hours):
  - Employees: 0.43
  - Contractors: 0.32

<sup>1</sup> Based on the total purchase value of products and materials (Hong Kong operations).

## ESG Ratings and Recognitions



MSCI ESG Ratings 2023

A

Member of  
**Dow Jones  
Sustainability Indices**  
Powered by the S&P Global CSA

Dow Jones Sustainability Asia/Pacific  
Index 2023  
S&P Global ESG Score: 65



Sustainalytics  
ESG Risk Ratings 2023  
Medium Risk



CDP 2023  
Climate Change Score: A-



Hang Seng Corporate  
Sustainability  
Index Series Member 2023-2024

Hang Seng Corporate Sustainability  
Index 2023-2024  
AA+



### Business Sustainability Index (BSI)

- Global (Asia Pacific) BSI
- Greater China BSI
- Greater Bay Area BSI
- Hong Kong BSI

Ranked First, Exemplar Level

Centre for Business Sustainability,  
The Chinese University of Hong Kong Business School



Top 1% S&P Global ESG Score (China) –  
Gas Utilities  
Sustainability Yearbook (China) 2023 –  
Member

S&amp;P Global



BOCHK Corporate Low-Carbon  
Environmental Leadership Awards

- Manufacturing Sector Gold Award
- Sustainable Business Award
- Anti-Epidemic Caring Award

Federation of Hong Kong Industries

### UNSDG Achievements Awards Hong Kong 2023

#### Project Awards:

- Best Approach
- Individual SDG Award – Goal 1: No Poverty
- Individual SDG Award – Goal 12: Responsible Consumption and Production

Green Council

Master Insight's 5th Financial Summit  
and ESG Award Ceremony 2023  
ESG Corporate Exemplar Award

Master Insight Media



Hong Kong Green Awards 2023  
Sustainable Procurement Award (Large Corporation) –  
Climate Action on Supply Chain

Green Council

Smart Ageing Awards 2022  
Gold Prize in the Living & Lifestyle category

Golden Age Foundation

Privacy-Friendly Awards 2023  
Outstanding Gold Awards

Office of the Privacy Commissioner for Personal Data

### The 22nd Hong Kong Occupational Safety & Health Awards

- Safety Management System Award: Gold Award
- OSH Report Award: Gold Award
- 5S Good Housekeeping Best Practices Award: Gold Award
- Safety Performance Award – All Industries Category
  - The Hong Kong and China Gas Company Limited: Outstanding Award
  - Towngas – Gas Production Stream: Outstanding Award
  - Towngas – Network Stream: Certificate of Attainment
  - P-Tech Engineering Company Limited – SENT: Outstanding Award
  - Towngas Telecommunications Company Limited: Outstanding Award
- Safety Performance Award – Construction Industry Category
  - U-Tech Engineering Company Limited: Outstanding Award

Occupational Safety &amp; Health Council



Jockey Club Age-friendly City Partnership Scheme 2022  
Age-friendly Business Innovation Award

The Hong Kong Jockey Club Charities Trust



Corporate and Employee Contribution  
Programme 2022/2023  
Diamond Award

The Community Chest of Hong Kong

Financial Education and ESG Leadership Awards 2023  
Corporate Financial Education and ESG Leadership (Gold Award)

Institute of Financial Planners of Hong Kong

Best Corporate Governance and ESG Awards 2023  
ESG Awards (Hang Seng Index Category)

The Hong Kong Institute of Certified Public Accountants

Chief Happiness Officer Appreciation Award 2023  
Top 10 Happy Companies to Work For

Chief Happiness Officer Association



### Junzi Corporation Award

- Junzi Corporation Award with Exemplary Business Practices with Benevolence
- Junzi Corporation Awards

The Hang Seng University of Hong Kong

# OUR ESG APPROACH

As we transition from a traditional utility company into an integrated clean energy supplier, Towngas continues to prioritise environmental, social and governance (ESG) matters that contribute to a sustainable future.

In 2023, we took a significant step forward by integrating our ESG Strategy into our decision-making processes across our organisation. In line with our Vision and Mission, our aim is to ensure that the transition to a low-carbon or sustainable economy is fair and inclusive. In doing so, we consider the social and economic implications for employees, communities, and other stakeholders, according to the principles of the Just Transition.

Our ESG Strategy — ENERGY — comprises six key areas: Energising the Ecosystem, Neutralising our Footprint, Engaging with Society, Revitalising our Strengths, Greening the Future and Young-at-heart with Resilience. These areas take into account both the positive and negative impacts of our business on stakeholders.



## Energising the Ecosystem

Conserve and utilise resources mindfully with innovative technology and mitigate our impact on biodiversity

## Neutralising our Footprint

Decarbonise our operation and value chain to achieve carbon neutrality and strengthen climate resilience

## Engaging with Society

Fulfil our responsibilities as a corporate citizen and create shared value for our customers and communities

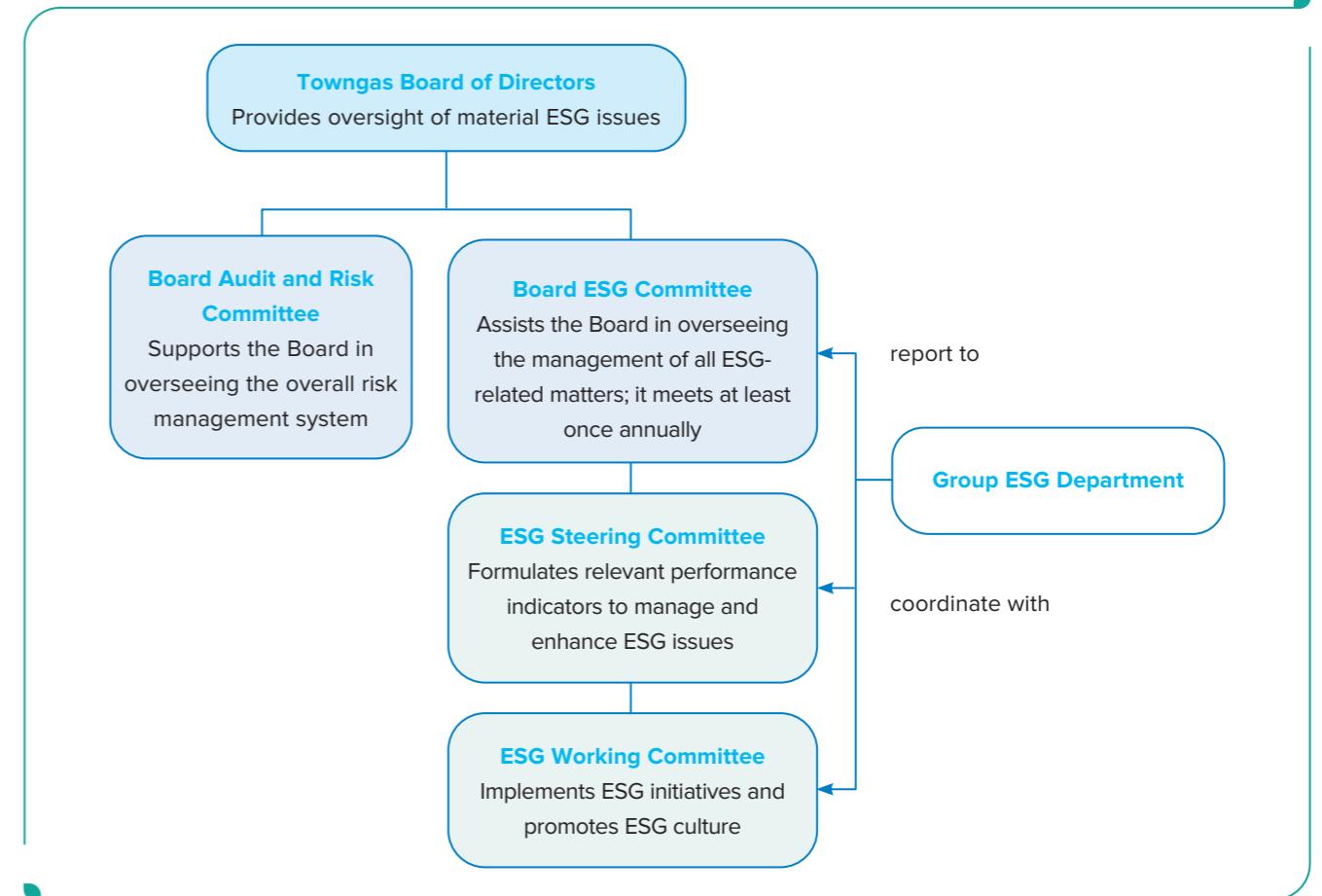
By focusing on these areas, we aim to achieve long-term business sustainability and generate shared value for all stakeholders.



## ESG Governance

The Towngas Board of Directors (the Board), the highest governance body, has the overall responsibility of overseeing material ESG issues. The Board ESG Committee (newly established in 2023), is responsible for handling ESG-related matters.

The Group's ESG governance structure is illustrated below:



**Board ESG Committee (BESGC):** To manage and ensure effective oversight of material ESG issues, Towngas elevated the ESG Committee to the board level during the year. Chaired by the Managing Director, the BESGC provides guidance to the Board on the management of all ESG-related matters within the Group.

**ESG Steering Committee:** Formed by different functional heads, the Committee is responsible for formulating relevant performance indicators to manage and enhance ESG performance. On the Chinese mainland, the Committee consists of representatives from major business units to promote an ESG culture and implement ESG work in project companies.

**ESG Working Committee:** The Committee has over 70 members working together to integrate ESG initiatives into the Group's business operations and promote ESG culture.

**Group ESG Department:** The Department reports to, discusses with and seeks approval of the BESGC on existing and new projects. It is responsible for implementing the Group's ESG strategy, improving ESG disclosures and identifying areas for improvement. It also monitors ESG trends and works closely with various stakeholder groups on ESG development.

**Board Audit and Risk Committee:** This Committee conducts a bi-annual review of the overall effectiveness of the Group's internal financial, operational and compliance control systems, risk management process, scope and quality of the management's risk monitoring and control systems, the effectiveness of financial reporting and compliance with the Listing Rules. For more details, please refer to the [Risk Management](#) section of this report and our [Annual Report 2023](#).

## Summary of BESGC Work

In 2023, the BESGC held one meeting to review:

- the results of the Group's key ESG ratings, including Dow Jones Sustainability Indices, MSCI ESG Ratings and the Hang Seng Corporate Sustainability Index Series, and discuss the latest requirements and expectations of these ratings;
- the key performance indicators of ESG Working Committee, including the implementation of internal carbon pricing, methane leakage reduction, health and safety performance enhancement, promotion of diversity and inclusion, supplier management enhancement and community investment;
- the updated results of the double materiality assessment and key material ESG topics identified for ESG Report 2023;
- the climate-related issues, including Hong Kong's gas business 2035 decarbonisation target, progress made towards the Group's carbon reduction targets and the results of its climate risk assessments;
- the ESG-linked compensation of the Managing Director and senior executives; and
- the enhanced disclosure of ESG risks and climate-related content as per latest local and international standards.

## ESG Policy

The ESG Policy states Towngas' commitment to carry out its business in an environmentally, socially and economically responsible manner. Approved by the Managing Director, it incorporates 23 ESG-related policies to guide us on our long-term sustainability journey. All policies were reviewed and nine were revised during the year to better align with the evolving environmental and social landscape. For example, we expanded the coverage of the Environmental Policy to include our operations, corporate processes and supply chain and specified in the Personal Data Privacy Policy that disciplinary actions would be taken for disclosure of personal data by employees without the Group's consent. The Code of Practice for Suppliers was also enhanced to include issues such as conflicts of interest, collective bargaining, climate change and biodiversity. For more details on our policies, please visit our [corporate website](#).

### ESG Policy



#### Environmental:

- [Climate Change Policy](#)
- [Environmental Policy\\*](#)



#### Governance:

- [Anti-Fraud Policy](#)
- [Board Diversity Policy](#)
- [Dividend Policy](#)
- [Information Security Policy](#)
- [Nomination Policy](#)
- [Personal Data Privacy Policy\\*](#)
- [Policy and Procedures on Disclosure of Inside Information\\*](#)
- [Policy on Shareholders' Communication\\*](#)
- [Risk Management Framework](#)
- [Security Policy](#)
- [Stakeholder Engagement Policy](#)
- [Whistleblowing Policy](#)



#### Social:

- [Anti-Discrimination Policy\\*](#)
- [Code of Conduct\\*](#)
- [Code of Practice for Suppliers\\*](#)
- [Customer Services Code of Conduct Policy](#)
- [Employee Policy](#)
- [Health and Safety Policy\\*](#)
- [Human Rights Policy\\*](#)
- [Social Investment Policy](#)
- [Sustainable Purchasing Policy](#)

\* Policies that were revised during the year.

## ESG Communication and Engagement

To build stakeholders' trust and interest in Towngas and enhance company's reputation, we communicate our ESG initiatives to both our internal and external stakeholders on a regular basis.

### Internal Engagement

Towngas believes that collective effort among all employees is essential for upholding our ESG commitments. In addition to mandating participation in our nine in-house ESG training videos for all employees and contractors, we also offer training sessions on specific topics relevant to ESG. In 2023, these included training in ESG development and opportunities for our employees, as well as two ESG exchange visits for our contractors to ensure they are well-informed on ESG issues and equipped with extensive ESG capabilities.



During the year, we launched the inaugural Towngas Award under the theme "Joining Hands for Sustainable Development, Nurturing the Seedlings of ESG". The purpose of the award scheme is to invite innovative ideas on how large corporations such as Towngas can instil ESG values in the younger generation from an early age. Furthermore, it is designed to act as a catalyst for motivating our employees and society to become involved in ESG issues.

For more details, please refer to the [Employee Engagement](#) section of this report.

### External Engagement

Towngas engages external parties to promote sustainable development and share our experiences in ESG. In 2023, we collaborated with Commercial Radio Hong Kong to launch a new programme, *ESG 101*, to discuss ESG-related concepts with experts and scholars from various fields.

Additionally, we organised visits to our North Point Headquarters building and Tai Po Gas Production Plant for ESG practitioners, members of professional bodies and students. These guided tours provided an opportunity for visitors to gain a deeper understanding of Towngas' ESG journey and to experience our sustainable practices firsthand.

To raise energy and ESG awareness among the younger generation, we developed a set of Energypedia learning cards and organised the inaugural Towngas Green Flame Energy Scientist Programme. The objective of the cards and programme was to spark students' interest in critical issues such as future energy and climate change. For more details, please refer to the [Community Engagement](#) section of this report.



## Thought Leadership

We participate in conferences and seminars to showcase successful examples of our achievements in ESG. By sharing our experiences and expertise, we hope to encourage other corporations to integrate ESG into their business strategies and operations. In 2023, we delivered talks on the following occasions:



Organiser	Conference/Seminar	Topic
Business Environment Council	BEC CEO Dialogue	Insights on Strategic Leadership in Leveraging Energy Transition Opportunities
Centre for Business Sustainability, CUHK Business School	Business Sustainability Conference 2023	Management Information System on Sustainability
City University of Hong Kong – MBA Programme	Sharp Forum	Reducing Environmental Footprint: Clean Energy Adoption Through Partnership and Innovation
Hong Kong Trade Development Council	Sustainability in the GBA	Unlocking Opportunities and Empowering Growth
Practicing Governance	Annual Conference 2023	ESG: the ISSB Journey
ReThink Hong Kong	ReThink HK 2023	Financing Biodiversity: The Next Frontier for Private Sector Leadership; The Case for Biodiversity Risk and Impact Disclosures; and Embracing the Future of a Smart Green City: Green Solutions & Materials

## Supporting the United Nations Sustainable Development Goals

We are committed to addressing the impacts of climate change and reducing carbon emissions in Hong Kong and on the Chinese mainland, in line with the United Nations Sustainable Development Goals (SDGs). Out of the 17 SDGs, we identified 4 that are most relevant to our operations and value chain.

We assessed the potential negative impacts of our business operations, including possible risks to people and the environment, and select products, services and investments that contribute the most to our sustainable development goals. Each of these SDGs and their impacts on our company and value chain is reviewed on an annual basis.

## Our Impacts on SDGs



Ensure availability and sustainable management of water and sanitation for all



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



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



Take urgent action to combat climate change and its impacts

- + Provide a safer and more reliable drinking water supply for our customers
- Production processes consume/generate a significant amount of water/wastewater

### Actions Taken/Achievements

- **2.93 million** customer accounts supplied with drinking water up to the national standard
- Over **120,000 m³** of water conserved through reverse osmosis systems at the Tai Po Gas Production Plant

- + Expand our gas supply coverage and promote coal/diesel to gas conversion
- + Develop a clean and smart energy business
- Fossil fuels used as our primary raw material for town gas production

### Actions Taken/Achievements

- **2.02 million** town gas customer accounts (Hong Kong)
- **40.19 million** city-gas customer accounts (Chinese mainland)
- Developed **124** zero-carbon smart industrial parks, with **1.8 GW** PV capacity connected to the grid (Chinese mainland)
- In Hong Kong, landfill gas takes up approximately **2%** of the town gas fuel mix
- **Hong Kong's first** hydrogen fuel cell charging facility for electric vehicle at a padel court in Sai Kung

- + Provide a safe and reliable energy supply
- + Encourage and promote recycling and reusing within our company's businesses
- Generate hazardous and non-hazardous waste during operations and along the value chain

### Actions Taken/Achievements

- Uninterrupted gas supply: **99.992%** (Hong Kong)
- **No major** incidents or chemical leakages at our chemical plants
- Cumulatively processed approximately **1.46 million tonnes** of organic waste
- Collected **>1,400 tonnes** of metal recovered through the Used Gas Appliance Recycling Programme in 2023

- + Encourage a low-carbon lifestyle along our value chain
- Our operations and businesses are exposed to physical and transition risks
- Generate GHG emissions that accelerate climate change

### Actions Taken/Achievements

- Committed to achieving **carbon neutrality by 2050** through energy transition and innovation, with a new medium-term carbon intensity reduction target of Hong Kong's gas business
- Disclosed climate-related financial information to enhance alignment with the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)
- Compared with the 2005 baseline, carbon intensity of Hong Kong gas production decreased by **28%**
- Incorporated **ESG Due Diligence** and **Internal Carbon Pricing** in investment decision-making

## Stakeholder Engagement and Double Materiality Assessment

We regularly collect feedback from both external and internal stakeholders on ESG issues material to Towngas as well as the impacts of our sustainability initiatives. This enables us to evaluate the effectiveness of our current ESG strategy, identify risks and opportunities, and improve our ESG performance.

### Stakeholder Engagement Approach

At Towngas, we highly value the concerns and feedback of our stakeholders. We have identified seven key external and internal stakeholder groups and are committed to engaging them in a manner that is both effective and inclusive. All stakeholder feedback will be integrated into our decision-making process and their needs and perspectives are thoroughly understood and addressed.

For more details, please refer to our [corporate website](#).

### Double Materiality Assessment

In 2023, we carried out a comprehensive double materiality assessment to ensure our ESG Report aligns with best global reporting practices. The assessment also enabled us to determine whether the topics addressed in the Report reflect their significant impact on the economy, environment and society as well as Towngas' enterprise value. As a result, we were able to further recognise significant risks and opportunities, both from a financial and non-financial standpoint, that could affect the ongoing development of our ESG strategy and targets.

This process gave us a deeper understanding of our stakeholders' concerns and interests regarding material issues that could affect them and Towngas. To guarantee transparency and impartiality, the analyses were conducted by an independent third-party consultant.

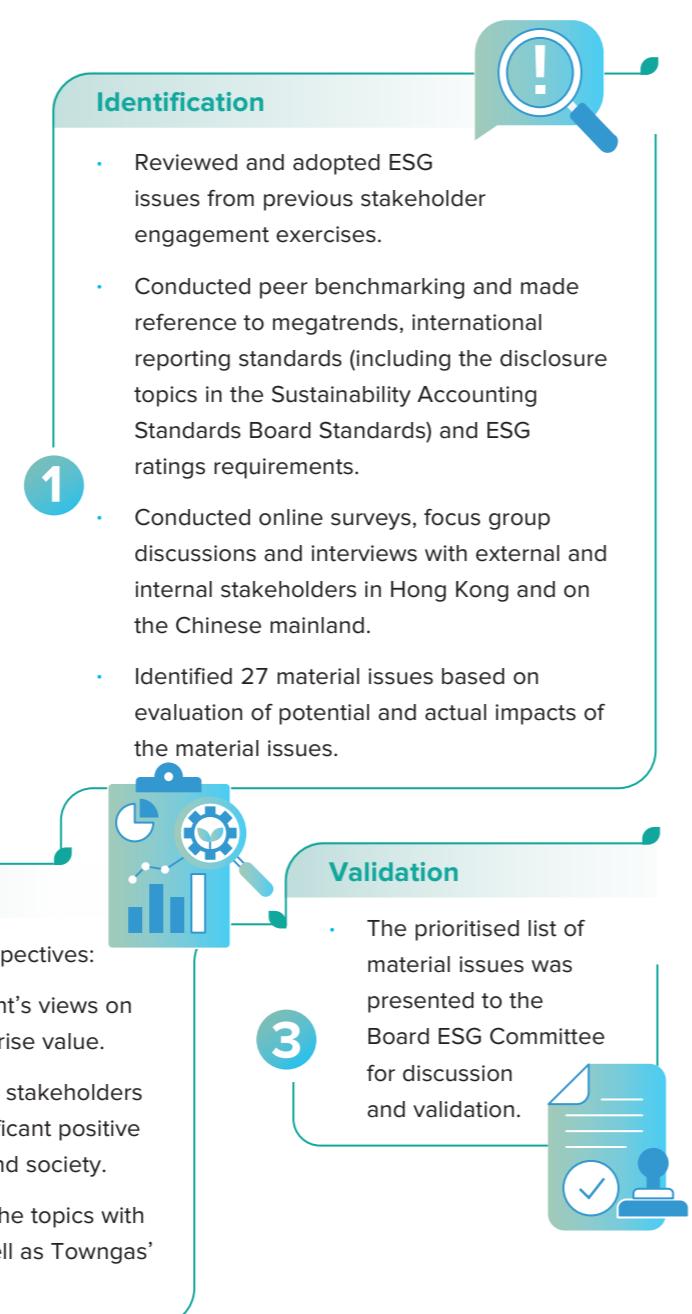
To reinforce the thoroughness and credibility of our findings, we used the internationally recommended three-step process of Identification, Prioritisation and Validation when conducting our double materiality assessment.

#### Prioritisation

- Stakeholders' feedback was considered from two perspectives:
  - Financial materiality: reflecting Towngas management's views on the positive and negative impacts on Towngas' enterprise value.
  - Impact materiality: reflecting the concerns of diverse stakeholders who believe selected ESG issues may contribute significant positive and negative impacts on the economy, environment and society.
- A revised materiality matrix was developed based on the topics with the most impact on society and the environment as well as Towngas' enterprise value.

#### Validation

- The prioritised list of material issues was presented to the Board ESG Committee for discussion and validation.



### Towngas 2023 Double Materiality Matrix

The double materiality matrix below summarises the relative importance of the 27 material issues, according to their impact on the economy, environment and society (Y-axis), and impact on Towngas' enterprise value (X-axis). Thirteen issues were prioritised as the most material.



#### Energising the Ecosystem

- Air emissions
- Nature and biodiversity
- Energy
- Materials
- Waste
- Water and effluents

#### Engaging with Society

- Community engagement
- Customer relationships
- Supply security and reliable production

#### Young-at-heart with Resilience

- Asset integrity and crisis management
- Customer health and safety
- Employee engagement and development
- Freedom of association and collective bargaining
- Human rights management
- Inclusion and diversity
- Occupational health and safety
- Supply chain management

#### Revitalising our Strengths

- Business integrity and compliance
- Corporate governance
- Data privacy and cyber security
- ESG strategy
- Tax

#### Neutralising our Footprint

- Climate resilience
- Fossil fuel alternatives (for customers)
- Greenhouse gas emissions

#### Greening the Future

- Economic impact
- Innovation

In 2023, the top five material issues for Towngas remained the same as last year: climate resilience, fossil fuel alternatives (for customers), greenhouse gas emissions, asset integrity and crisis management, and ESG strategy. Notably, our stakeholders expressed a growing concern regarding asset integrity and crisis management. Two other issues, namely corporate governance and data privacy and cybersecurity, were also raised as areas of awareness by our stakeholders.

Through our engagement with external stakeholders, we have identified that climate resilience together with asset integrity and crisis management are the two material issues that have the most significant impact on them.

Climate resilience is important because external stakeholders are concerned about the long-term viability of the utility services we provide in a period of growing climatic uncertainty. In response, Towngas is exploring and supplying low-carbon energy that provides customers with more choices. However, there could also be negative impacts for existing fossil fuel-related suppliers/contractors due to the shift in focus to cleaner energy.

The other material issue of concern, asset integrity and crisis management, is relevant because insufficient asset management may affect the safety of our infrastructure and cause an interruption to service. This could lead to serious incidents, such as a pipeline explosion causing operational disruption, injury or even loss of life in the community at large.

For more details, please refer to the [Risk Management](#), [Our Carbon Reduction Initiatives](#), and [Asset Integrity and Crisis Management](#) sections of this report.

## Boundaries and Impacts

This report covers all material issues and their corresponding boundaries, where their impacts occur, and Towngas' involvement in them, as shown in the table below.

Material Issues	Boundaries				Impacts
	Employees	Contractors and suppliers	Customers	Community	
1 Air emissions	✓	✓	✓	✓	Energising the Ecosystem
2 Nature and biodiversity	✓	✓	✓	✓	
3 Energy	✓	✓	✓	✓	
4 Materials	✓	✓			
5 Waste	✓	✓			
6 Water and effluents	✓	✓	✓	✓	
7 Climate resilience	✓	✓	✓	✓	Neutralising our Footprint
8 Fossil fuel alternatives (for customers)	✓	✓	✓	✓	
9 Greenhouse gas emissions	✓	✓	✓	✓	
10 Community engagement	✓				Engaging with Society
11 Customer relationships	✓	✓	✓		
12 Supply security and reliable production	✓	✓	✓	✓	
13 Business integrity and compliance	✓	✓	✓	✓	Revitalising our Strengths
14 Corporate governance	✓	✓	✓	✓	
15 Data privacy and cyber security	✓	✓	✓		
16 ESG strategy	✓	✓	✓	✓	
17 Tax	✓	✓			
18 Economic impacts	✓	✓	✓	✓	Greening the Future
19 Innovation	✓	✓	✓	✓	
20 Asset integrity and crisis management	✓	✓	✓	✓	Young-at-heart with Resilience
21 Customer health and safety	✓	✓	✓		
22 Employee engagement and development	✓				
23 Freedom of association and collective bargaining	✓	✓			
24 Human rights management	✓	✓			
25 Inclusion and diversity	✓	✓			
26 Occupational health and safety	✓	✓			
27 Supply chain management	✓	✓			

## Stakeholder Engagement Results and Our Responses

The table below summarises the most important material issues that arose from the stakeholder engagement process and our corresponding responses:

Area of Interest	Our Response
<b>Asset integrity and Crisis Management</b>  Solid asset integrity and crisis management are crucial for ensuring safety, regulatory compliance, business resilience, reputation management and environmental stewardship	Towngas provides a secure and reliable source of cleaner energy by upholding high standards of asset integrity and crisis management. To ensure stakeholder health and safety, we employ proactive risk management and advanced technologies that enable us to address gas leaks and infrastructure damage promptly. Our robust crisis management systems allow for early detection of gas leakages and timely infrastructure repairs.
<b>Stakeholder Group</b> 	For more information, please refer to the <a href="#">Asset Integrity and Crisis Management</a> section of this report.
<b>Area of Interest</b>  <b>Climate Change (Operation and Value Chain)</b> Stakeholders' focus on climate change has driven demand for transparent climate-related disclosures and a recognition of the imperative to transition to cleaner energy sources to achieve carbon neutrality.	Through climate scenario analysis, on-site assessments and comprehensive training, we enhance the adaptation and development of climate resilience within our workforce and operations. We also encourage our suppliers to monitor and manage their greenhouse gas emissions.
<b>Stakeholder Group</b> 	Additionally, in our transition into an integrated energy supplier, we have developed distributed energy systems, explored clean fuel sources such as hydrogen, established zero-carbon smart industrial parks and launched waste-to-energy projects. In 2023, we began incorporating ESG Due Diligence and Internal Carbon Pricing into our investment decision-making processes to seize low-carbon opportunities and investments.
<b>Area of Interest</b>  <b>ESG Strategy</b> Strong corporate governance is the backbone of any well-run company, which is essential for enhancing business resilience, ESG and long-term financial performance.	For more information, please refer to the <a href="#">Neutralising our Footprint</a> and <a href="#">Greening the Future</a> chapters.
<b>Stakeholder Group</b> 	In our commitment to effective ESG management, during the year we established the BESGC to assist the Board in overseeing and addressing ESG issues. Under the BESGC is the ESG Steering Committee that strives to enhance our overall ESG performance.
	To ensure accountability and drive performance improvement, variable compensation for the Managing Director and senior executives is linked with ESG material issues.
	We also aim to appoint at least one female board member by 31 December 2024 to enhance diversity and broaden decision-making perspectives.

# E ENERGISING THE ECOSYSTEM



## Air Emissions

## Resources Management

## Environmental Management

In response to escalating global challenges, it has become increasingly important to reduce polluting emissions and protect our natural resources, biodiversity and the environment. Towngas, in alignment with the national approach, recognises the importance of the energy transition and biodiversity conservation. Therefore, we have adopted green and low-carbon measures to pave the way towards a more sustainable future.

To reduce emissions and promote biodiversity conservation within the Group, we are transitioning to greener energy sources and practices. For example, we have installed solar PV power generation systems mainly on rooftops to avoid potential negative impacts on biodiversity. These endeavours underscore our unwavering commitment to environmental stewardship and a harmonious coexistence with nature.

## 2023 Performance Highlights

Assessed nature-related dependencies and impacts of our renewable energy business and its value chain



>1,400 tonnes of metal recovered through the Used Gas Appliance Recycling Programme



Towngas and 51 of its project companies are ISO 14001 certified



Conserved >120,000 m<sup>3</sup> of water via the reverse osmosis systems at the Tai Po Gas Production Plant



Electricity use at North Point Headquarters building reduced by 13.5% (2015 baseline)



## Future Actions and Targets

Reduce 15% electricity use for our North Point Headquarters building by 2025 (2015 baseline)



Achieve a 2% increase in the overall energy efficiency of gas appliances by 2030



Stay updated with the latest development of the TNFD framework and continuously enhance related actions



## Management Approach

Towngas has implemented a comprehensive *Environmental Policy*, under which we are committed to use resources responsibly, lower our emissions and waste, and minimise our impact on biodiversity.

At the Group level, we make every effort to improve air quality by controlling and monitoring the air emissions from our operations. We also make more efficient use of the natural resources we consume and reduce the waste

we generate whenever possible. In addition, we have established a *Sustainable Purchasing Policy* to promote the use of sustainable products and services. With regard to biodiversity, our objective is to mitigate the impact of our activities, with no net loss and a net positive impact.

Our customers and business partners along the value chain are also encouraged to follow our policies concerning the environment and sustainability.

For more information on our management approach and relevant environmental policies, please refer to our [corporate website](#).



# Protecting Natural Capital and Biodiversity

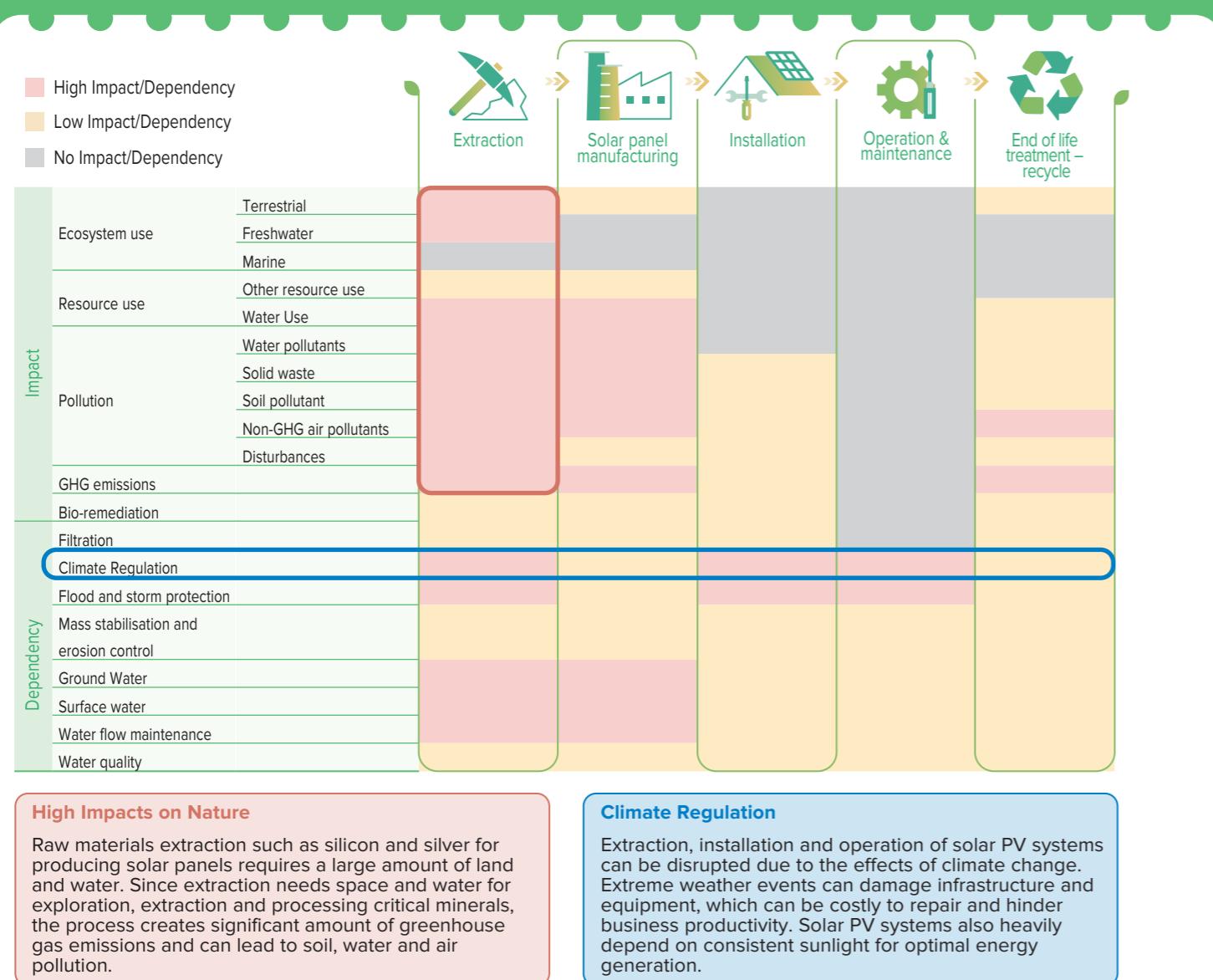
With the shift towards carbon neutrality in the global energy industry, we understand that an equilibrium must be attained between a just and equitable energy transition and the preservation of our planet's natural capital and biodiversity. In support of this, we have embraced the country's recent designation of 15 August each year as National Ecology Day, which aims to raise awareness of an ecological civilisation and the need for environmental action.

## Identification and Assessment of Nature-related Issues

Towngas is expanding its efforts to assess and manage nature-related risks and opportunities. In 2022, we began exploring our business impact and dependencies on nature, as well as our associated nature-related risks and opportunities. Recognising the importance of these issues, Towngas played a pioneering role with the publication of our *Climate-related and Nature-related Directive Guide* (the Guide), in response to the *Task Force on Nature-related Financial Disclosures* (TNFD) framework.

In 2023, we conducted a comprehensive life-cycle analysis over our renewable energy business' dependency on ecosystems that provide us natural services; as well as our impact on the local environment and biodiversity.

The table below illustrates potential materiality of impacts and dependencies resulting from the direct operations of our renewable energy business and its value chain. The analysis was prepared by combining the use of Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE) Tool with extensive review and assessment.



Mr Kenny Chan  
Director of Development  
WWF-Hong Kong



WWF-Hong Kong has been working since 1981 to transform Hong Kong into Asia's most sustainable city where nature is conserved, carbon pollution is reduced, and consumption is environmentally responsible.

**Nature and climate are inextricably linked. The natural world can provide solutions to some of the impacts of climate change; but climate change is also destroying some of nature's most vital elements. These twin crises can be tackled together by accelerating society's energy transition and restoring damaged ecosystems.**

## Positive Impacts of the Energy Transition on Nature

During our transition to cleaner energy, we are prioritising stakeholder concerns and safeguarding biodiversity, while minimising impact on biodiversity and promoting nature conservation. Evidence of this commitment can be seen in the expansion of our renewable energy businesses, which not only reduces carbon emissions that play a critical role in climate change but also contributes to the preservation of the ecosystem and biodiversity.

Although reducing emissions is an important element in our energy transition, we understand that we should also plan renewable energy projects in areas with a lower conservation priority to avoid potential negative impacts on biodiversity. Instead of building traditional solar farms, for example, we install solar PV power generation systems on the rooftops of production plants and logistics warehouses in industrial parks. This minimises our impact on nature in

accordance with the first step – Avoid – in the mitigation hierarchy. By embracing this alternative approach, we can prevent the potential negative consequences associated with more traditional power generation projects, such as land degradation, habitat destruction and loss of biodiversity.



To protect natural capital and biodiversity, rooftop solar systems offer the following notable advantages:

- Utilisation of Available Space**  
Making use of existing infrastructure helps to preserve natural habitats and ecosystems as the need for additional land to develop large-scale solar farms is minimised.
- Habitat Preservation**  
Less land will be required, as it is no longer necessary to remove vegetation to build new power lines, allowing natural habitats to remain intact.
- Reduce Landscape Fragmentation**  
By avoiding landscape fragmentation, wildlife mobility can be maintained and natural habitats preserved.

By choosing to focus on rooftop solar installations and consciously avoiding activities that could harm local ecosystems and biodiversity, we are reinforcing our commitment to sustainable practices and the protection of nature.





## From Awareness to Action

Recognising the power of education to promote biodiversity, we organise environmental programmes for our employees, contractors and the public. Initiatives range from guided tours and environmental projects to second-hand charity sales promoting reuse.



### Farming for Charity Project

Established in 2013, the Farming for Charity project encourages sustainable land use practices among farmers in Hong Kong, while educating our employees, their families, students, customers and the wider community on the use of regenerative agricultural methods. University professors, industry experts, NGOs and others are also invited to learn about the project's innovative approach to agriculture.

### Plantation Enhancement Project (PEP)

Since 2017, Towngas has been sponsoring the PEP by The Green Earth, a local NGO. One of the key features of the project is a long-term woodlands conversion initiative to improve plant diversity, which in turn provides nutrients and habitats for wildlife. With guidance from The Green Earth, we led 20 customers and volunteers on Tree Caring Day 2023 to care for the seedlings planted earlier at Shing Mun Country Park. The staff of The Green Earth also showed participants how to fertilise the soil and spoke about Hong Kong's native trees to enhance public awareness of the need for forest conservation.



### Mangrove Conservation in Shenzhen

Towngas Smart Energy recently partnered with the Shenzhen Spring Environmental Protection Volunteer Association (SENGO) in a collaborative effort to protect the mangroves at Baguang Yinye Wetland Park in Shenzhen. Our dedicated volunteer team participated in this event as they recognised the important role that mangroves play in water purification, wind and wave prevention, biodiversity preservation and carbon storage. Activities included species identification, mangrove fence conservation and a sea debris clean-up, as part of our efforts to make a meaningful contribution towards the preservation and protection of the mangrove ecosystem.



Through our participation in initiatives stated above, we are helping to raise awareness of the importance of biodiversity and nature conservation in our ecosystems.

## Resource Management Conserving Energy

We strive to reduce energy usage and contribute to a more sustainable future by focusing on both our own energy consumption and promoting energy conservation among our customers.

### Energy Conservation Actions

#### Action

##### Energy management at North Point Headquarters building

- Certified to energy management system ISO 50001:2018
- Conduct energy audits and identify opportunities for conserving energy
- Carry out improvement works to enhance building energy efficiency
- Target to reduce electricity use by 15% by 2025 (2015 baseline)



##### Energy efficient products

- Upgrade and improve the energy efficiency of our residential gas appliances
- Target to increase eco-efficiency of gas appliances by 2% by 2030



##### Energy assessment services and IoT application at commercial kitchens

- Provide energy assessment services on strategic products, e.g. dishwashers & steam cabinets for commercial and industrial (C&I) customers, to identify energy saving opportunities and drive product improvement
- Develop IoT applications that utilise big data analysis to improve kitchen efficiency and facilitate monitoring of energy usage in commercial kitchens, particularly for traditional Chinese cooking appliances



#### Updates/Performance

- Conducted an energy audit in 2023 and identified opportunities
- Replaced equipment such as air handling units, computer room air conditioners and office lighting fixtures with more energy-efficient alternatives
- Achieved electricity reduction of 13.5% (equivalent to >797,000 kWh) in 2023 (2015 baseline)
- Energy Intensity: 0.474 GJ/m<sup>2</sup>

- Around 70% of residential cooking appliances and water heaters acquired Grade 2 or above in the Mandatory Energy Efficiency Labelling Scheme (MEELS), with plans to acquire additional Grade 2 ratings for the remaining appliances by 2024

- Conducted energy assessment for a basket washing machines replacement project at a Maxim's food factory
  - o Achieved 6% energy reduction (equivalent to 63,000 kWh) and 59% water reduction (equivalent to 2,800 m<sup>3</sup> of water) annually
- Developed IoT appliances, namely a steam cabinet and wok range for Chinese cooking; fryer and burner range with oven for Western cooking
- Implemented a trial project in our C&I Showroom – Green Kitchen at our North Point Headquarters building, utilising IoT-ready gas appliances and platforms



## Conserving Water

We are committed to managing our water consumption responsibly, with the aim of achieving a water efficiency target of 96%. To reach this target, we have introduced a variety of measures such as a water leakage management system, process improvement and the adoption of innovative technologies.

At our Tai Po Gas Production Plant, we use three reverse osmosis systems for conserving water, which saved over 120,000 m<sup>3</sup> of water in 2023. We also have a rainwater collection tank at our North Point Headquarters building for cleaning and irrigation.

We also take special care to avoid or minimise effluent spills that could have a negative impact on the environment. In 2023 there were no reportable effluent spills at any of our operations sites.

## Managing Waste

We follow the 5Rs principle not only as a guide for managing our own waste but also for educating our customers, business partners, suppliers and the public on the importance of waste management in environmental protection.

For the past 22 consecutive years, we have achieved Wastewi\$e Certificates at the Excellence Level by implementing best waste management practices within our operations.

For our C&I customers, we developed a battery-less steam cabinet that eliminates the need for dry batteries by utilising waste heat to generate electrical energy for ignition. The steam cabinet is also equipped with an automatic steam control function that detects excess steam and adjusts the gas rating accordingly, enabling energy savings without making frequent manual adjustments.

## Green Renovation at North Point Headquarters building



In 2023, the North Point Headquarters building underwent a green renovation, as part of our commitment to the continuous pursuit of sustainability excellence. The main lobby now incorporates various eco-friendly elements and features, such as greenery in strategic locations to enhance the indoor environment and reclaimed wood from a local eco-social enterprise for the reception counter and bench. Dimmable lighting systems were also installed to conserve energy and improve the building's ambience. To ensure optimal air quality, we installed an energy-efficient air handling unit equipped with UV disinfection technology. Moreover, we implemented a paperless E-Visitor system and TV wall for event promotions to reduce paper waste or plastic banners.

For more details on the sustainability features at the North Point Headquarters building, please visit our [corporate website](#).

## Promoting Green Habits

To encourage our employees and contractors to adopt green habits, we installed a recycling machine that can handle aluminium cans and plastic bottles, as well as an intelligent book sharing machine at our North Point Headquarters building. In 2023, we also held electronic waste recycling and paper reduction campaigns and organised a market fair at our North Point Headquarters building, with a booth for social enterprises to promote sustainable products.

For customers, we introduced various initiatives to encourage paper saving. These included an option for customers to enjoy rebates by paying their gas bills via electronic channels and automatic bank transfers. We also encourage customers to scan the QR code on their gas appliances to reduce the use of hard copies, access up-to-date manuals or replace a lost manual. Moreover, we continued our Used Gas Appliance Recycling Programme to collect customers' unwanted appliances and sell them to recycling contractors, with all proceeds going towards environmental causes. In 2023, we recovered over 1,400 tonnes\* of scrap metal through this programme, bringing the total amount recovered over the previous 20 years to over 24,000 tonnes. Customers who participated received a magnetic sticker promoting recycling.



## Air Emissions

At Towngas, we not only fully comply with local regulations but also make every effort to reduce or mitigate our air emissions. These mainly comprise non-greenhouse gases such as nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>) and respirable suspended particulates (RSP).

Our emissions result primarily from the combustion of fuels in our operations, such as natural gas and naphtha, and by our vehicles. To mitigate air emissions associated with the combustion of fuels, we make monitoring air emissions in our chemical plants a top priority. At our town gas production sites, effective management practices also ensure that SO<sub>x</sub> and NO<sub>x</sub> emissions remain well below authorised limits.

In line with our commitment to sustainable transportation, we are replacing the current gasoline-powered vehicles in our fleet with electric vehicles and have installed charging facilities at our North Point Headquarters building. Besides, we have been exploring the feasibility of supplying hydrogen as an alternative fuel source for public buses that will help Hong Kong achieve its targets of zero vehicle emissions before 2050.

For more details on how we are controlling emissions and developing hydrogen as an alternative fuel source, please refer to the [Our Carbon Reduction Initiatives](#) and [Transition to a Hydrogen Economy](#) sections in this report.

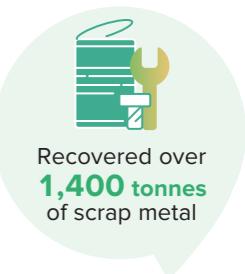


## Reduction of Volatile Organic Compounds (VOCs) Emissions

The State Council of the People's Republic of China has introduced the Action Plan for Continuous Improvement of Air Quality calling for the reduction of VOCs through measures such as source emissions reduction, rigorous process control and effective terminal management.

At our methanol plant in the Inner Mongolia Autonomous Region, we have launched various VOCs emissions reduction projects and made substantial investments to upgrade our facilities. These include the capture of VOCs during the production and wastewater treatment process and subsequently combust them in boilers for elimination. This approach has allowed us to refine our operations, enhance VOCs removal efficiency, reducing approximately 45 tonnes of VOCs emissions per year, significantly reducing their release into the atmosphere.

\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.



# N NEUTRALISING OUR FOOTPRINT

## Climate Change Management

## Carbon Neutrality

The year 2023 was marked by extraordinary heat, heavy rainfall and extreme weather, underscoring the need for immediate and strategic action to combat climate change, promote sustainability and manage associated risks. As a responsible corporate citizen, we are answering this by addressing the challenges of climate change and its impact on ecosystems.

At Towngas, we are committed to achieving carbon neutrality by 2050. In line with the principles of the Just Transition, however, we are not only working towards carbon neutrality but also considering the social aspects of this transition. In pursuit of this goal, Towngas began to incorporate ESG Due Diligence and Internal Carbon Pricing into its investment decision-making processes during the year to seize low-carbon opportunities and investments.



### 2023 Performance Highlights

Incorporated ESG Due Diligence and Internal Carbon Pricing in investment decision-making

Reduced carbon intensity from gas production by 28% (2005 baseline), reaching 0.549kg CO<sub>2</sub>e/unit of town gas

Disclosed climate-related information in alignment with the latest IFRS standards

Extended Scope 3 GHG emissions quantification and disclosures to the Group level

Replaced fossil fuel partially with biomass and recycled end-of-life tyres at the methanol plant

Launched self-developed Towngas Operation Platform for comprehensive monitoring of methane leakages

### Future Actions and Targets

Achieve carbon neutrality by 2050 with two interim carbon reduction targets

Enhance climate resilience by visiting our project companies on the Chinese mainland

Replace fossil fuel in phases by introducing and using zero-carbon fuels to reduce the total carbon intensity of using town gas by 36% by 2035 (2019 baseline)



### Management Approach

Our Climate Change Policy sets forth our commitment to combating climate change, which began in 2015 with a climate-related assessment. Then, in 2019, we started aligning our climate-related reporting according to the Recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), enhancing our understanding of the associated risks.

In addition to the climate-related risks we have identified, we continuously monitor our direct and indirect greenhouse gas (GHG) emissions and work towards reducing the GHG emissions that contribute to climate change. We also look for opportunities to become more resilient and adaptive to climate change as innovative technologies, products and services emerge.

At least twice a year, we will review and update our climate-related risks. Moreover, we will continue to align our disclosures with the TCFD recommendations to make our communications with stakeholders more transparent and to ensure our business grows sustainably.

For further details on our management approach and relevant policies, please refer to our corporate website.

## Climate Change Management

Towngas began addressing climate-related risks as early as 2015. As part of our commitment to enhance transparency and accountability, we have aligned our reporting with the Recommendations of the TCFD since 2019 and published the *Climate-related and Nature-related Directive Guide* (the Guide) in 2022.

In response to the increasing demand for comprehensive climate-related information from our stakeholders, we have aligned our disclosures with the *IFRS S2 Climate-related Disclosures* published by the International Sustainability Standards Board (ISSB) in June 2023. Consequently, stakeholders can gain a clearer understanding of our climate-related practices while investors will have a better basis on which to make decisions.

Climate change, along with other material ESG issues, is integrated into our business strategy and operations with oversight from the Towngas Board of Directors (the Board). The Board ESG Committee assists the Board in monitoring, managing and overseeing climate-related risks and opportunities, and the Board Audit and Risk Committee assists the Board in overseeing the overall risk management system. For more details, please refer to the *Corporate Governance* section.

### Identifying, Assessing, and Managing Climate-related Risks

To evaluate the potential impacts of climate change on our assets, businesses and value chain, we conduct comprehensive climate risk assessments using various climate models and scenarios analyses. This helps us account for a wide range of potential impacts and uncertainties and prepare for future climate-related risks. To ensure comprehensive strategic planning and informed decision-making for the future, we regularly review and update our assessments, strategies and scenario analysis to address emerging climate-related risks and opportunities in different time horizons. We also maintain open communication with stakeholders and explore strategies for strengthening our resilience against transition and physical climate-related risks. For more details, please refer to *the Guide* and sections below.



#### Physical Risks

Physical risks associated with climate change impacts can be broadly classified as acute (e.g., floods, droughts) and chronic (e.g., sea-level rise, temperature increases). In order to evaluate the impacts of physical risks present in our assets, three Representative Concentration Pathways (RCP) scenarios (RCP 2.6, RCP 4.5, RCP 8.5) were used. These scenarios ranged from limiting the global average temperature of 1.5°C to align with The Paris Agreement (RCP 2.6) to managing the challenges of a drastic increase in average temperature of 4°C (RCP 8.5).

In 2021 we conducted a deep asset physical risk assessment for our Tai Po Gas Production Plant and an asset level assessment of 100 major assets on the Chinese mainland. To extend the assessment coverage across the Chinese mainland, we included new projects and conducted asset level assessments of over 300 assets in 2023. Focusing on chronic risks, we used a climate model to identify climate-sensitive/vulnerable assets, i.e. assets most exposed to extreme impacts such as extreme temperature, rainfall and water stress.

Visits to over 10 selected assets were conducted in 2023 to understand their vulnerability and capacity to adapt to key hazards. We ensure that effective systems are in place to withstand different climate stressors. We also held ESG and climate change training for managerial employees on site to show them the climate impact projections for the assets, as well as to equip them with the knowledge required to tackle climate hazards in the future.



Risk	Time Horizon <sup>1</sup>	Potential Financial Implications	Mitigation Plan/Response
<b>Acute</b> Heavy rainfall and increased frequency and intensity of river floods	Medium to Long Term	↑ Costs and ↓ revenue from asset damage ↑ Resilience upgrade expenses ↑ Insurance costs and claims	<ul style="list-style-type: none"> <li>Review plan for adapting our infrastructure to climate change</li> <li>Strengthen crisis management plans</li> </ul>
<b>Chronic</b> Increased temperatures	Long Term	↓ Revenue from gas-related services ↑ Operating costs due to energy use	<ul style="list-style-type: none"> <li>Diversify businesses to transform into a multi-energy provider</li> </ul>

#### Transition Risks and Opportunities

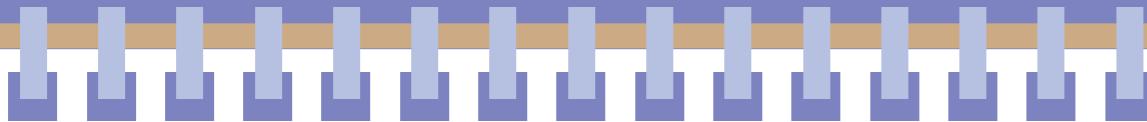
In 2020, we analysed various assumptions under four self-developed scenarios based on the International Energy Agency's (IEA) *World Energy Outlook 2019*, which consider technological advancements and policy implementations. This enabled us to identify potential transition risks that could impact the Group under different time horizons. To ensure our analysis aligns with the latest trends, we updated these scenarios using the Network for Greening the Financial System (NGFS) scenarios and developed the Net Zero 2050 Scenario to align with the goal of limiting a global temperature rise to 1.5°C. We then prioritised top transition risks under the Net Zero 2050 Scenario and Below 2°C Scenario specifically for gas-related businesses.

Risk	Time Horizon <sup>1</sup>	Potential Financial Implications	Mitigation Plan/Response Measure
<b>Policy and Legal</b> Mandates on/regulation of products and services	Short to Medium Term	↓ Revenue from gas-related services ↑ Compliance and insurance costs ↑ Income from low-carbon offerings	<ul style="list-style-type: none"> <li>Align with government policies for low-carbon development</li> <li>Reduce GHG emissions via low-carbon energy and efficiency improvements</li> </ul>
<b>Technology</b> Technological improvements or innovations to support the transition to a lower-carbon economy	Medium to Long Term	↑ Investment in new technologies ↑ R&D spending ↓ Operational costs due to energy efficiency	<ul style="list-style-type: none"> <li>Reduce operational GHG emissions</li> <li>Support R&amp;D with proprietary technologies</li> </ul>
<b>Market</b> Shifting consumer behaviour	Medium to Long Term	↓ Revenue from gas-related services ↑ Operating costs due to raw material price changes ↑ Income from low-carbon products	<ul style="list-style-type: none"> <li>Diversify businesses to transform into a multi-energy provider</li> </ul>
<b>Reputation</b> Shareholders are likely to divest from fossil fuels and invest in low-carbon businesses	Long Term	↓ Change in capital availability ↑ Communication costs	<ul style="list-style-type: none"> <li>Enhance open disclosure for increased capital availability</li> </ul>

<sup>1</sup>Short term runs to 2025, aligned with our near-term targets that cover carbon reduction, energy efficiency, etc.; medium term runs to 2035, aligned with the Group's plan to replace fossil fuels in phases by introducing and using zero-carbon fuels in our HK operations; long term runs to 2050, aligned with the Hong Kong's Climate Action Plan 2050 to achieve carbon neutral before 2050

# Incorporating ESG in Investment Decision-Making

Towngas is committed to leading climate action, reducing emissions and promoting positive change within the industry and beyond, contributing to a resilient, low-carbon future. In pursuit of these goals, we leverage two essential tools: ESG Due Diligence and Internal Carbon Pricing (ICP), enabling us to seamlessly integrate climate factors, social dimensions and responsible business conduct into our decision-making process.



ESG Due Diligence is a process for assessing ESG-related issues surrounding potential investments. This process allows investors to identify ESG risks, liabilities and opportunities so they can make more informed investment decisions.

ICP serves as a strategic instrument that enables companies to assign a value to carbon emissions. This approach is practical for identifying revenue opportunities, assessing risks, promoting energy efficiencies and saving costs, as well as guiding investment decisions. ICP is commonly implemented through four methods:



## Shadow Price



a hypothetical cost of carbon to guide low-carbon investments

## Implicit Price



the implicit cost incurred by a company for implementing emission reduction measures

## Internal Carbon Fee



charging responsible business units for their corresponding carbon emissions

## Internal Carbon Trading



allowing business units to trade allocated carbon credits based on their respective emissions



Mr Kenneth Liu  
Partner  
Affinity Equity Partners



Affinity Equity Partners is an independently owned and operated buyout fund manager, investing in Asia Private Equity since 1998.

**ESG investment is the evolution of traditional investment. By incorporating ESG factors into the investment decision-making process, we can mitigate hidden risks and improve long-term outcomes.**

At Towngas, we have been integrating ICP into our climate transition risk scenario analysis since 2020 to navigate the potential cost of national regulatory compliance.

In line with the growing expectations of stakeholders, we have taken further steps to enhance our business planning. In 2023, we began incorporating ESG Due Diligence and ICP into our investment decision-making processes to identify potential trade-offs and seize low-carbon opportunities and investments.

In the initial implementation phase, all new city gas and distributed photovoltaic projects meeting specified criteria must conduct an ESG Evaluation and ICP analysis, submit along with other project materials, for investment approval. 12 projects with investment amount over RMB300 million were submitted and approved in December 2023.



## ESG Due Diligence

- Eligible projects must complete an ESG Evaluation, which serves as a comprehensive assessment tool to identify key ESG risks.
- The Evaluation covers nine aspects, including environmental liabilities, ESG policies, labour practices, legal and compliance, among other things.

## Internal Carbon Pricing

We currently employ an approach that incorporates elements from both the Shadow Price and Implicit Price. For each project type, we have developed a methodology to quantify the implied cost of emissions or the benefits of emissions reduction (when applicable). The calculation is based on estimated carbon emissions or reduction volumes throughout the entire project cycle. It also includes projections of underlying unit carbon prices that are anchored by China's Carbon Emission Allowances (CEA) in the national emissions trading scheme<sup>1</sup>, which is updated on a monthly basis.

The following simplified method of calculation is for illustration purposes only:



### City Gas Projects

Implicit Carbon Emission Cost (\$) = Sum of the following over the period of the entire project life cycle:



Annual Gas Sales Volume (million m<sup>3</sup>)



Emission Factor (tCO<sub>2</sub>e/million m<sup>3</sup>)



Projected Carbon Price (\$/tCO<sub>2</sub>e) for the year



### Distributed Photovoltaic Projects

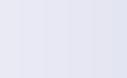
Implicit Carbon Reduction Benefit (\$) = Sum of the following over the period of the entire project life cycle:



Annual Green Power Generation (kWh)



Emission Reduction Factor (tCO<sub>2</sub>e/kWh)



Projected Carbon Price (\$/tCO<sub>2</sub>e) for the year

<sup>1</sup>The national emissions trading scheme (ETS) was established in 2017 as a climate policy tool to help the Chinese mainland achieve its Nationally Determined Contribution to the Paris Agreement on climate change and its own clean energy transition.

## Climate-related Financial Disclosures

By analysing the risk scenarios that have been developed, we can estimate the financial impacts of potential risks. The table below summarises the most significant negative effects on the Group's business in 2050.

### Potential Financial Impacts

Risk		Scenario	Type of Impact	Financial Impact (HK\$ million)		
				<500	500-1,500	>1,500
1.5 °C scenario	Transition	Policy and Legal	Net Zero 2050	EBITDA <sup>1</sup>	✓	
	Market			EBITDA <sup>1</sup>	✓	
	Technology			Expenditure	✓	
	Reputation			Expenditure	✓	
4 °C scenario	Physical	Acute	RCP 8.5	Expenditure		✓
		Chronic		EBITDA <sup>1</sup>	✓	

In our transition into an integrated clean energy supplier, we have been diversifying our business and financing low-carbon initiatives. These projects, which include energy efficiency improvements, construction and operation of renewable energy facilities, and utilisation of solid waste and biomass, are considered eligible under the 'Chinese Taxonomy'<sup>2</sup>. The revenue and investment of the Group's low-carbon businesses as compared with its gas business on the Chinese mainland (taxonomy-eligible) are shown below:

	2022	2023 <sup>3</sup>
Revenue	13%	4%
Investment	28%	125%



## Building Climate Resilience to Protect our Pipeline Infrastructure under Extreme Weather Risks

In recent years, extreme weather events have become increasingly common across the world. Hong Kong is no exception, as was the case when a once-in-500-years rainstorm swept across the city in September 2023, causing widespread flooding and damage.

Extreme weather events such as this one could affect Towngas' pipeline infrastructure and result in material losses. Accordingly, the need for a resilient pipeline infrastructure to protect against storms, heavy rainfall, floods and high temperatures has never been higher.

The Group has always placed the highest priority on the safety and integrity of its pipelines. Through continuous monitoring and upgrades to our pipeline infrastructure, we can ensure a more reliable and stable supply of gas, while reducing asset losses and economic damage caused by extreme weather.

In the past three years, our project companies have experienced incidents triggered by extreme weather, primarily in Liaoning province and Guangdong province. More than 90% of these incidents were rainfall related. In July 2023, for example, a weather-related incident occurred at one of our project companies in Chaoyang city, Liaoning province, where heavy rainfall washed out and therefore exposed underground pipelines, requiring prompt repairs to avoid gas leaks from pipeline ruptures. The total cost of emergency repair was approximately RMB350,000, and around 80% that cost was covered by our property damage insurance to reduce financial loss.

<sup>1</sup> For gas, water and related businesses in Hong Kong and on the Chinese mainland.

<sup>2</sup> The Green Bond Endorsed Projects Catalogue (2021 Edition) was jointly announced by the People's Bank of China, the National Development and Reform Commission and the China Securities Regulatory Commission on 21 April 2021. It identifies projects or economic activities that are considered as green and is referred to as the 'Chinese Taxonomy'.

<sup>3</sup> Subsequent to the two rounds of financing activities for EcoCeres, Inc., Towngas' equity interest in EcoCeres has dropped to less than 50%. To be consistent with the reporting scope of this report, the revenue from this business and its investment was excluded from calculations.

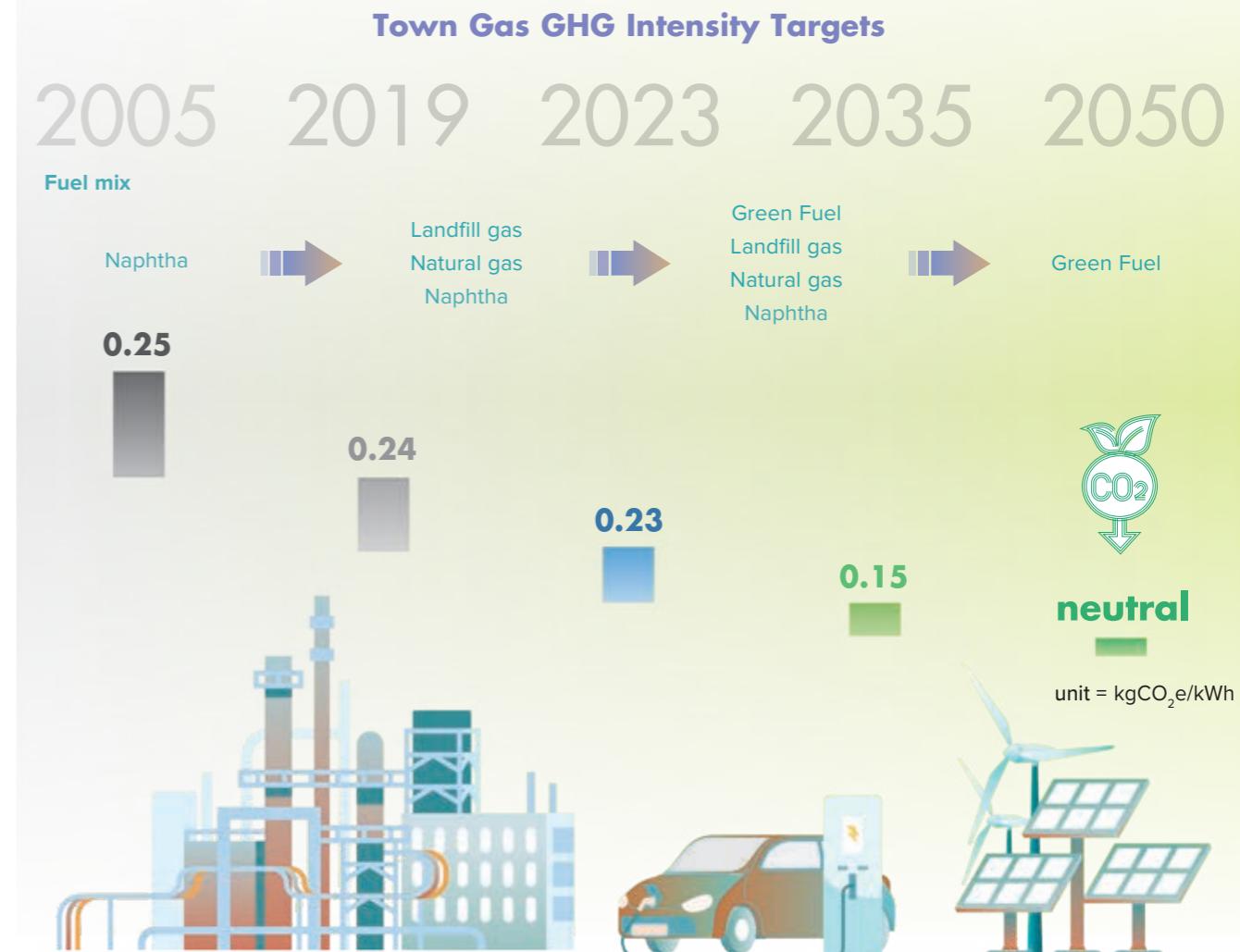
## Carbon Neutrality

The Board has been overseeing progress made on Towngas' commitment to achieving carbon neutrality by 2050, with interim targets for 2025.

Target	Measure	2023 Performance
Reduce Group operational GHG emissions by 10% (2020 baseline)	<ul style="list-style-type: none"> <li>Increased ratio of landfill gas and natural gas use in town gas production</li> <li>Utilised bio-fuel to replace fossil fuel</li> <li>Phased out carbon intensive assets/operations</li> </ul>	6%
Reduce 10 million tonnes of GHG emissions in the environment per year	<ul style="list-style-type: none"> <li>Developed coal-to-gas, solar photovoltaic power generation, and energy efficiency improvement projects</li> </ul>	7.8 million tCO <sub>2</sub> e

We also formulated a decarbonisation strategy for Hong Kong's gas business, including the replacement of fossil fuels by zero-carbon fuels (such as green naphtha, green methane, green hydrogen, green methanol) in phases, target to reduce the total carbon intensity of using town gas by 36% (2019 baseline) by 2035, reaching 0.15 kgCO<sub>2</sub>e/kWh.

At present, the Science Based Targets initiative (SBTi) is in the process of developing the Sectoral Decarbonisation Approach for the oil and gas sector to set science-based targets (SBTs), and currently does not accept commitments or validate targets. Nevertheless, we are preparing to set SBT and are closely monitoring their development.



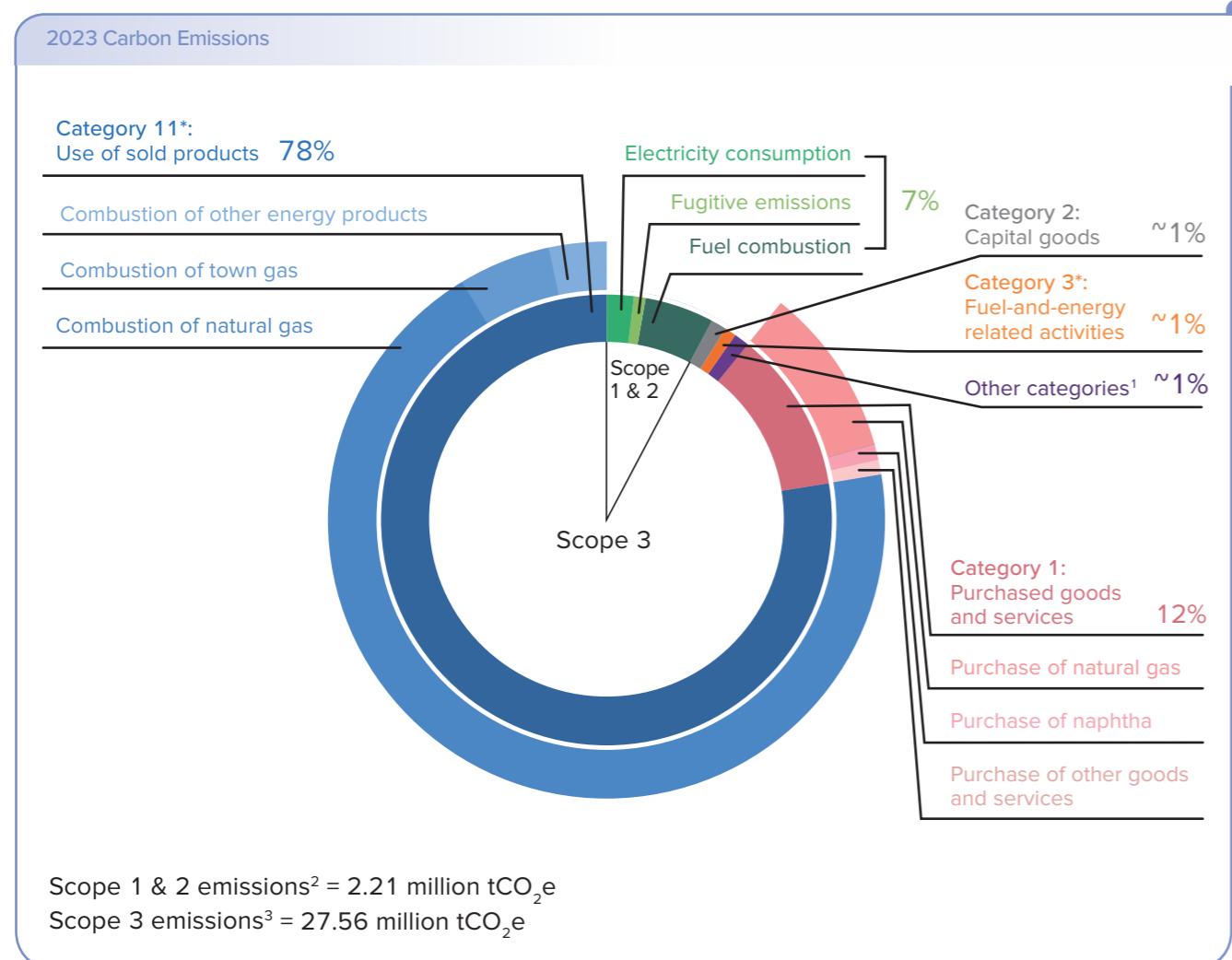
## Carbon Footprint

### Scope 1 and 2 Emissions

Our total scope 1 and 2 carbon emissions in 2023 were 2,214,000 tCO<sub>2</sub>e.

### Scope 3 Emissions

To recognise the significance of emissions throughout the value chain, we have been disclosing our scope 3 emissions since 2020. In 2023, Towngas conducted a comprehensive review of its scope 3 emissions and extended scope 3 emissions quantification from gas-related businesses to the Group to present a more comprehensive picture of our footprint along the value chain. Based on this analysis, Towngas updated the sources of emissions included in its carbon footprint related to scope 3. The total scope 3 carbon emissions in 2023 were 27,555,000 tCO<sub>2</sub>e, with the most significant source coming from Category 11 – use of sold products, as categorised by the Greenhouse Gas Protocol. Category 11 carbon emissions account for over 80% of our value chain emissions.



<sup>1</sup>Denotes data that has been assured by Deloitte Touche Tohmatsu. The carbon emissions of Category 3 was 152,000 tCO<sub>2</sub>e and Category 11 was 23,133,000 tCO<sub>2</sub>e. Please refer to the Independent Assurance Limited Report for further details.

<sup>1</sup>Other categories included Category 4 – upstream transportation and distribution; Category 5 – Waste generated in operations; Category 6 – Business travel; Category 7 – Employee commuting; Category 9 – Downstream transportation and distribution; and, Category 12 – End-of-life treatment of sold products.

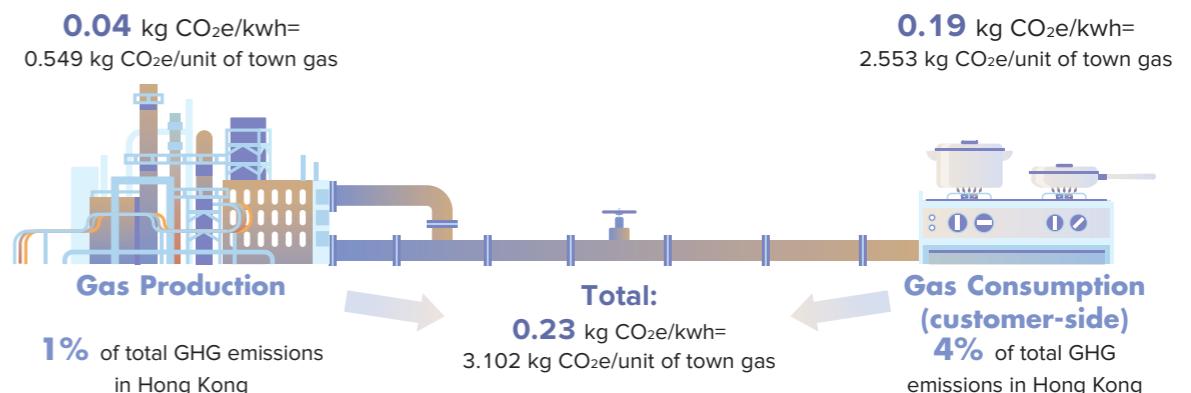
<sup>2</sup>Scope 1: direct emissions from owned or controlled sources.

Scope 2: indirect emissions from the generation of purchased. We operate in regions where the option to select our electricity supplier emission factors is not available; thus, we are unable to report marketbased scope 2 GHG emissions.

<sup>3</sup>Scope 3: other indirect emissions that occur in the value chain.

### Hong Kong Town Gas Emissions

For Hong Kong gas production, our scope 1 and 2 emissions totalled 310,016 tCO<sub>2</sub>e in 2023, the carbon intensity was: 0.549 kg CO<sub>2</sub>e per unit of town gas\* — a decrease of 28% compared to the 2005 baseline.

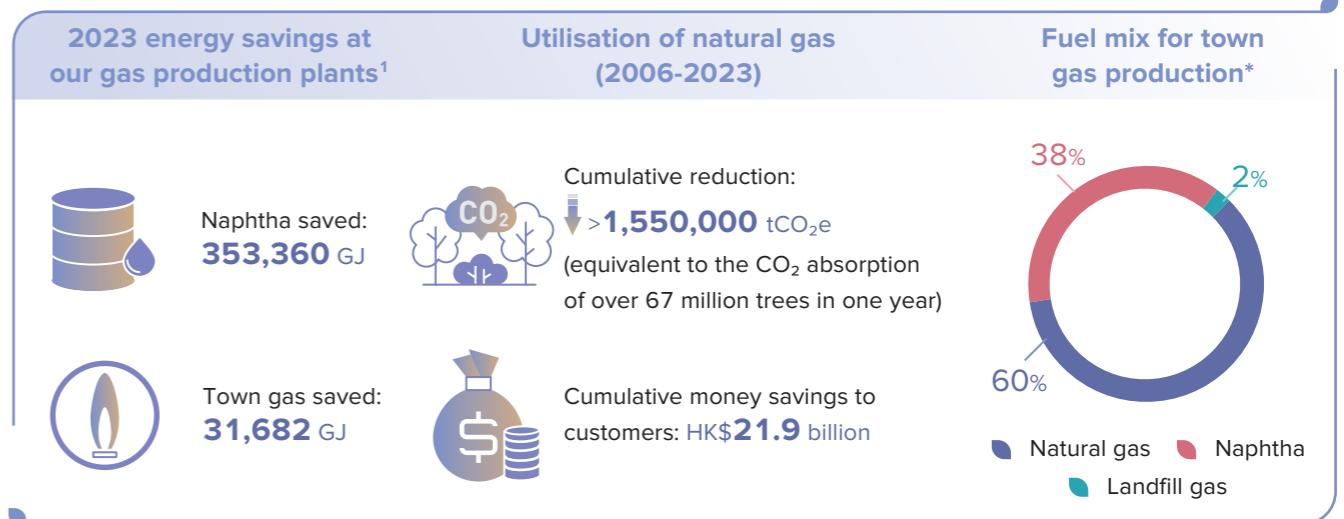


### Our Carbon Reduction Initiatives

To reduce our carbon footprint, we transitioned away from high-polluting coal in the 1960s, and progressively replaced it with cleaner fuels – naphtha, natural gas and landfill gas – to our fuel mix.

We were among the first companies in Hong Kong to make use of renewable fuels such as landfill gas, which we added to our production of town gas in 1999 (please refer to our [corporate website](#)). This was followed by the addition of natural gas to our town gas production in 2006. Since then, we have continued to follow up our commitment to decarbonisation by improving energy efficiency, reducing methane leakages and promoting the use of renewable energy.

In 2023, the carbon reduction from our use of landfill gas is 36,588 tCO<sub>2</sub>e. We are also exploring opportunities with customers to utilise landfill gas in Combined Heat and Power (CHP) systems.



In 2023, Towngas and Linde HKO Limited (Linde) signed a Memorandum of Understanding (MOU) to investigate the feasibility of capturing and transporting carbon dioxide generated from the Tai Po Gas Production Plant to the neighbouring Linde facility. This arrangement will allow Linde to access an additional source of carbon dioxide, while simultaneously enabling Towngas to reduce its carbon emissions during the production process through dedicated pipeline.

<sup>1</sup>Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

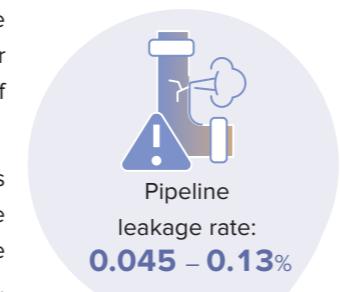
<sup>1</sup>As compared with the data of a reference year before implementing the respective environmental initiative.

## Preventing Methane Leakages with Advanced Technology

Methane, a potent greenhouse gas, is the second-largest contributor to global warming with a global warming effect 28 times greater than carbon dioxide. The methane content in town gas and natural gas is approximately 30% and 90% respectively. To prevent leakages and ensure a stable gas supply, we place a high priority on maintaining the integrity of our pipelines by monitoring leakage patterns in our gas pipeline network.

### Hong Kong

Last year, we collaborated with City University of Hong Kong on a detailed pipeline leakage study. By examining data and conducting on-site surveys, we determined that our pipeline leakage rate was between 0.045 – 0.13%. This is equivalent to a leakage rate of approximately 4,000 – 12,000 tonnes of carbon dioxide equivalent methane per year.



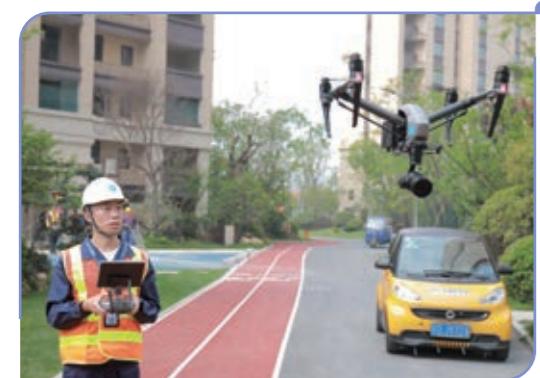
The research also revealed that fugitive GHG emissions primarily occur due to third-party damage, pipeline commissioning/decommissioning and permeation. To mitigate third-party damage, we closely coordinate with stakeholders, monitor excavation activities and conduct regular trench inspections. The Group has also replaced older metallic pipes with stainless steel or polyethylene pipes to minimise gas leaks. In addition, we employ advanced detection tools such as high precision gas detectors, laser methane detectors, sniffer dogs and vehicles equipped with ppm grade methane detectors to enhance accuracy and efficiency.

To further reduce fugitive GHG emissions, we efficiently recover the residual gas inside pipelines when depressurising them during pipeline connections. Gas inside pipelines is transferred to the nearby low-pressure network via gas governor rather than direct venting or flaring into the atmosphere.

### Chinese Mainland

Since some pipelines on the Chinese mainland are located in rural areas and thus require extra manpower for leakage detection, we use advanced technologies to prevent and detect leakages in our pipeline network.

In 2023, we launched the Towngas Operation Platform (TOP). By incorporating the Geographic Information System (GIS) and an Internet of Things (IoT) platform, TOP allows us to manage our operations and facilities, control risks and manage gas sources more effectively. To further standardise and digitalise our network, we plan to implement TOP in over 100 project companies in the next three years, covering over 400,000 gas facilities and 50,000 km of gas pipelines.



In addition, we carry out regular plant and station safety self-assessments in accordance with internal guidelines. These include evaluations of our operation management, equipment, pipelines, system maintenance, combustible gas leakage detection and alarm interlocking, all of which help us make timely rectifications when faults are discovered.

On the customer side, we have launched new smart gas meters with a series of safety features. These innovative gas meters will trigger a real time alarm whenever abnormal flows or micro-leakages are detected and will automatically cut off the gas supply to ensure customer safety. For more details, please refer to the [Smart Solutions](#) section of this report.

## Advantages of TOP

**Methane Emission Control Monitoring**  
TOP records and analyses methane emission data from our network operations, aiding us in setting and achieving our emission reduction targets. The resulting database helps us understand and calculate methane emissions for safer, more efficient emissions control.

[Methane leakage detection at gas discharge stack](#)

We have been encouraging project companies to install methane detection ports at their gas discharge stacks to monitor methane emission concentrations. If leakages are detected, we will promptly investigate and rectify faults.

**Smart Rescue**  
The TOP system can help analyse pipe bursts to accurately locate affected valves and governors. It will also help notify nearby emergency personnel to immediately support pipeline repairing, thereby reducing leakage emissions from damaged pipelines.

**Real-time Monitoring of Gas Facilities**  
IoT technology allows for real-time monitoring of our pipeline network and pressure regulating facilities. Data collected is consolidated and analysed with TOP. The platform has multi-level alarm threshold settings for risk management and 24/7 monitoring of high-risk construction sites via internet or mobile phone. This ensures the safety, stability, and economical operation of the gas supply network while improving management efficiency.

**Pipeline Defect Concentration Diagrams**  
In the past, PE pipe welded joints were inspected either visually or through destructive testing. Today, we use pioneering non-destructive testing technology, including ultrasonic phased array, to detect common defects in welded joints. This technology allows us to generate defect concentration diagrams based on site conditions to quickly identify defect types and levels, enabling us to proactively prevent issues.

**Facility Management and Leakage Measurements**  
TOP's digital capabilities allow us to carry out more efficient pipeline inspections, maintenance and repair, leakage measurements, and more. It also supports equipment lifecycle management with visual comparisons using uploaded photos. Additionally, the accurate calculations made possible through GIS enable better leak detection, measurement and management in our pipeline network.

**Digital Control of Pipeline Welding**  
Weld quality in PE pipelines is crucial for safety and longer service life of the gas pipeline network. Using TOP, we upload welding records and convert them into digitised data for analysis. AI technology allows us to review the data automatically, enhancing our supervision of welded joints and reducing the risk of gas leaks.





## Substituting Fossil Fuels with Low-Carbon Alternatives

At the methanol plant in Inner Mongolia Autonomous Region, we employ advanced environmentally friendly technologies to produce high-quality green methanol. To align with the national “30-60” dual carbon goals, we conducted extensive research and development and found that utilising biomass and end-of-life tyres as a feedstock could reduce reliance on fossil fuels to lower carbon emissions from our plant.

## Towngas Tan Hui: A New and Inclusive Carbon Scheme and Platform for Towngas Employees

In 2023, we developed and launched the Towngas Tan Hui Platform, an inclusive carbon platform to instil low-carbon habits among our employees on the Chinese mainland and engage them in our emission reduction efforts. The Towngas Tan Hui Platform can be accessed through the Moment App. When using this app, employees are encouraged to embrace low-carbon actions. These include participating in the Clean Plate campaign, paying gas bills online, walking instead of taking rides, recycling clothes, holding meetings online, purchasing green products and using electronic rather than paper invoices. In addition to reducing their carbon footprints, employees will also have the opportunity to earn green energy points via the app.

During the year, around 22,000 employees and members of the public participated in the use of the app and achieved a total carbon reduction of about 900 tCO<sub>2</sub>e. We are also in the process of developing personal carbon accounts, which will enable employees to track and display their carbon footprint digitally, further carrying out personal responsibility and laying the groundwork for our corporate carbon management.



## Curbing Emissions in our Value Chain and our City

Through various initiatives, we are working to reduce GHG emissions of downstream operations, primarily from the use of energy by our customers. These include generating renewable energy, implementing Combined Heat and Power (CHP) solutions, improving the efficiency of gas appliances, and exploring different waste-to-energy projects.

For more details, please refer to the [Empowering Customers for the Transition](#) and the [Energy Transition](#) sections of this report.

### Solar PV Systems

In 2023, we completed the installation of Phase II photovoltaic (PV) systems at our Tai Po Gas Production Plant. The capacity of this new installation is around double of that of our Phase I installation. We also installed solar panels on our governor kiosks to power monitoring equipment such as gas detectors, pressure loggers, door sensors and surveillance cameras. Together with the existing PV systems at our North Point Headquarters building and offtake & pigging stations, these facilities generated over 560,000 kWh in 2023, an 84% increase from 2022 during the year.



### Continuing our Carbon Neutral Voyages

Following our first carbon-neutral voyage in 2022, we organised another two voyages in 2023 for delivering naphtha from Malaysia to Hong Kong, where it was used for the production of town gas. The two voyages covered 3,200 nautical miles and neutralised approximately 700 tCO<sub>2</sub>e through an offset by a Reducing Emissions from Deforestation and Forest Degradation (REDD+) project in Cambodia, under the Verified Carbon Standard.

## Partners in Carbon Neutrality

We believe forging global partnerships with both local and international organisations are essential for combating climate change and its impacts on the environment.

TCFD Supporter	To demonstrate our commitment to transparency and sustainability.
BEC Net-zero Carbon Charter	As a signatory, we are collectively contributing to Hong Kong's long-term decarbonisation journey through our pledge to set targets and actions for a net-zero future. Towngas also participates in public consultations and advisory groups organised by the Business Environment Council (BEC) for the transition to a net-zero economy.
Carbon Neutrality Partnership	To support the HKSAR Government's drive for carbon neutrality by 2050.
China Oil and Gas Methane Alliance	To help reach the target of “reducing the average methane intensity in natural gas production to below 0.25% by 2025”. (Towngas Smart Energy)
Chinese City-Gas Enterprise Methane Emission Control Proposal	We pledged to develop and promote methane emissions control technology on the Chinese mainland.
Climate Governance Initiatives	As one of eight founding partners in Hong Kong, we are working to mobilise boards of directors to address climate change in their businesses. (Towngas Smart Energy)
Methane Guiding Principles	As a signatory, we collaborate with industry peers to reduce methane emissions across the production value chain.

# ENGAGING WITH SOCIETY



## Customer Experience

## Community Engagement

Towngas is committed to the principles of the Just Transition and societal engagement. We understand that our operations have significant impacts on society and the environment and are thus making a concerted effort to broaden our positive impacts to create long-term value.

As we navigate the energy transition, we will focus on working closely with customers to develop innovative, sustainable and affordable products and services. We will also contribute to the development of sustainable communities by allocating resources that improve human and social capital and investing in the next generation.



## 2023 Performance Highlights

99.992% uninterrupted town gas supply rate



>42,000 households benefited from Towngas Concession Schemes totalling HK\$24 million

Volunteer service hours:

14,487 (Hong Kong)

>440,000 (Mainland Utility Businesses)



Established a gas supply chain business segment to ensure reliable gas supply

Commissioned the first inter-plant waste-to-energy facility from the Tai Po Gas Production Plant to a neighbouring food factory



Rice Dumplings for the Community programme set a Guinness World Record™



Service quality – efficiency: 8.96\*

Service quality – courteous and friendly attitude: 8.94\*

\*Exceeded target (score of 8.5 out of 10)



## Future Actions and Targets

Expand the implementation/application of SROI analysis for new projects



Develop and launch smart IoT products to enhance home safety and user convenience



## Management Approach

For more than 160 years, Towngas has prided itself on being a socially responsible company that provides efficient customer service and creates long-term value for society. This commitment is outlined in our [Customer Service Code of Conduct Policy](#), [Social Investment Policy](#) and [Stakeholder Engagement Policy](#).

We strive to align our business activities with these policies and develop relationships of trust with our stakeholders. Furthermore, we maintain high standards of safety and reliability in our gas supply as well as the other products and services we provide. To ensure customers receive excellent service, we have established a variety of internal policies, programmes and targets. Among these is the [Towngas Service Pledge](#), which outlines the quality of service we have committed to deliver. We also provide communication channels for customers to access information on our products and services or to provide feedback so that we can better understand their needs.

We are a caring company, with a corporate philosophy that focuses on corporate social responsibility. Our programmes and initiatives for bettering the community are centred on three areas:

- Community health and wellness
- The environment
- Youth development

For more information on our management approach and relevant policies, please refer to our [corporate website](#).

## Customer Experience

### Energy Customers Can Count On

While contributing to the energy transition, Towngas maintained its commitment to provide an efficient and reliable supply of energy to customers. During the year, the Group officially established a gas supply chain business segment to optimise the Group's gas supply chain structure and improve the natural gas supply chain in order to ensure supply and reduce costs. For our renewable energy business, we provide customers with comprehensive energy management solutions, including energy storage, to ensure the stable and reliable operation of our zero-carbon smart industrial parks.



In Hong Kong, we achieved a 99.992% uninterrupted town gas supply rate in 2023. This achievement was made possible by our efficient maintenance and emergency-handling system, dual feedstock system and a support system to increase our gas production capacity. In 2023, we commissioned a Synthetic Natural Gas Back Up Plant to provide uninterrupted gas supply for customers. The primary purpose of this plant is to serve as a backup facility that can be activated if the supply of landfill gas from the North East New Territories Landfill is interrupted. By having this backup system in place, we can effectively mitigate the impact of potential disruptions and maintain a reliable gas supply for customers.

#### Reliable Gas Supply

For Towngas, ensuring a stable and reliable gas supply on the Chinese mainland is paramount. To achieve this, we have implemented strategic measures aimed at strengthening our self-sufficiency in natural gas supply and stabilising prices, particularly during peak seasons. In 2023, this led to the establishment of a dedicated gas supply chain business segment, which synergises gas source coordination of all businesses.

We have refined the Group's gas supply chain structure with a three-pronged approach of procurement, transmission and distribution, and gas storage. This approach has been designed to guarantee a stable supply, achieve cost reductions and enhance our profit margins. According to our diversified sourcing and procurement strategy, we plan to purchase from international resources through liquefied natural gas (LNG) receiving stations strategically located in Tangshan, Shanghai, Tianjin, and Shenzhen. The inaugural direct LNG shipment we purchased in 2023 was successfully imported, further improving the efficiency of the distribution network, and ensuring more direct import through terminals to downstream distribution. Moreover, we amplified our self-operated gas sources through the utilisation of unconventional gas sources such as coalbed methane liquefaction in Shanxi province, and shale gas liquefaction in Sichuan province, among others.

In 2023, the Group's storage capabilities grew substantially, with two new gas wells augmenting our underground salt-cavern gas storage facility in Jintan, Changzhou, Jiangsu province, now capable of storing nearly 400 million m<sup>3</sup>. Collaborations with logistics partners and the interconnection of national pipelines networks such as the West-to-East and the Sichuan-to-East Gas Pipelines further optimised our storage turnover. The initiation of the trial operation of our shale gas liquefaction project in Weiyuan, Sichuan province, showcases our progress in cross-border gas trading.

Looking forwards, the storage tanks at the receiving terminal in Caofeidian district, Tangshan, Hebei province, will be commissioned in 2024, with a storage capacity of 180,000 tonnes.

#### Serving Our Customers

The Group's Superior Quality Service (SQS) programme and corporate philosophy of "Growth = innovation x implementation" (G = i x i) are the driving forces behind our efforts to improve our products and services. With over 30% of Hong Kong employees as SQS members, we have completed over 1,990 projects that have increased customer satisfaction and saved around HK\$670 million in the past 31 years.

To improve customer convenience, we introduced Tinny, a 24/7 AI chatbot that supported the Hotline to handle 14% of total customer enquiries in 2023. Our eService platform has also been continuously enhanced, allowing customers to access more online conveniences. During the year, 38% of our maintenance services were booked online and, when combined with our Interactive Voice Response System (IVRS), achieved a 50% self-order rate by customers for our maintenance services.

Our Towngas Service Pledge also commits us to providing friendly, competent and efficient service at the highest level. In 2023, all targets were achieved. For more information, please refer to our [2024 Service Pledge](#).



Tinny, our **24/7** virtual assistant, helped cover **14%** of total enquiries



**38%** of our maintenance services were booked online



Achieved a **50%** self-order rate by customers for our maintenance services



advanced system enables close monitoring of the real-time status of its gas appliances and seamless tracking of gas usage, allowing CulinArt 1862 to continue delivering exceptional service while prioritising sustainability and efficiency. Also featured is a smart mobile farm that allows the chefs to harvest hydroponic microgreen to preserve their freshness and nutritional value.

On 20 August 2023, we partnered with the Dialogue In The Dark (HK) Foundation to offer a unique baking activity at the restaurant that promoted social inclusion, diversity and equality. During the class, participants baked a loaf of bread in complete darkness, followed by a sharing session with People of Differences (PoDs) who have visual or hearing impairments.

With programmes like this, CulinArt 1862 aims to set an inspiring example for the industry by demonstrating how businesses can make a positive impact on both the environment and the community.

#### Towngas Lifestyle for Customers

At Towngas Lifestyle, we are dedicated to providing customers with high-quality products and services such as smart kitchen solutions, gas insurance, home services and community retail. In 2023, we launched the Towngas Lifestyle Smart Alarm platform, leveraging cutting-edge digital technology and a "product + platform + service" total solution to ensure home safety and business efficiency.

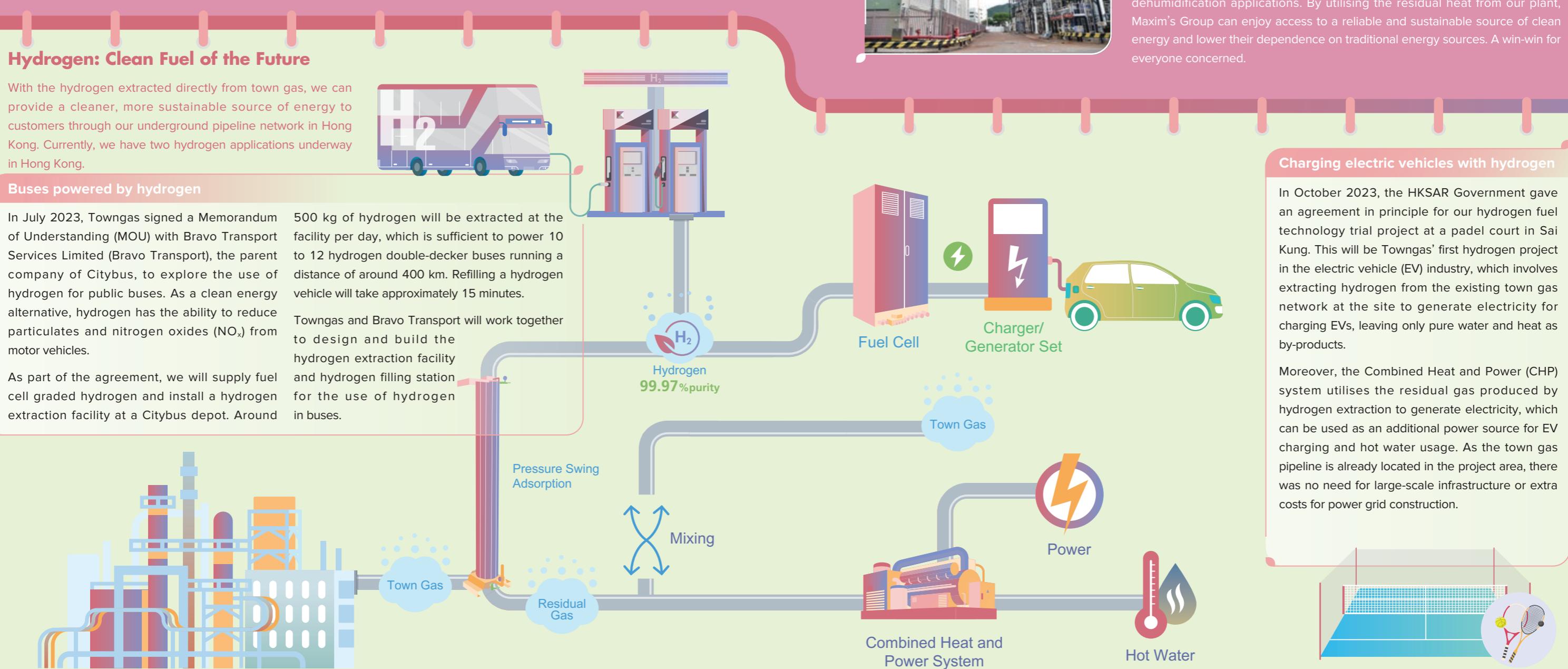
Recognising the growing demand for smart home solutions, we developed the Towngas Lifestyle Cloud (TLC). This innovative smart cloud platform seamlessly integrates gas, smart kitchens, and lifestyle services, catering to our customers' digitalisation needs. By achieving a synergy between our extended businesses and gas business, TLC had attracted an impressive 17 million members by the end of 2023.

Moreover, 2023 marked a year of substantial advancements for Towngas Security Chips (TGSE CHIP), with sales reaching 1.6 million units of our RISC-V IoT security chips. Towngas Lifestyle established the country's first RISC-V & 5G Smart Gas Joint Innovation Centre in collaboration with China Mobile IoT, XinSheng Technology, and StarFive during the year. Together, we will develop gas safety-related products for smart kitchen and TGSE CHIP solutions and will promote these applications to businesses within our Group as well as other gas companies.

# Empowering Customers for Energy Transition

At Towngas our mission goes beyond the provision of low-carbon energy solutions to customers. We also collaborate with them to reduce their carbon emissions and support Hong Kong's commitment to carbon neutrality by 2050. What's more, we work closely with stakeholders to develop innovative, sustainable and affordable products, ensuring a seamless transition to a cleaner energy future aligned with the principles of the Just Transition.

The following are just a few examples of how we have been working with customers to help them achieve their clean energy goals.



Ms Catherine Cheung  
Head of Project and Engineering,  
Maxim's Caterers Limited



Maxim Group delivers memorable moments to their customers by providing quality dining experiences under their homegrown brands and renowned global brands.

## Improving Accessibility for All

Our goal is to ensure that our products and services are accessible to everyone, including individuals with reduced mobility and the disadvantaged. With that in mind, we have been incorporating advanced technologies into our products and services to cater for the needs of all customers. For example, special designs for the safe operation of gas stoves and automated metering systems were adopted to provide convenient and confident usage for users.



**Ethnic Minorities**  
Our customer service hotline is available in English, Cantonese, Putonghua, Tagalog and Bahasa Indonesia



**Visually Impaired Persons**  
Bills and gas appliance instructions are available in braille for the visually impaired



**Persons with reduced mobility**  
Wheelchair access is provided at customer centres



**Disadvantaged Groups**  
Towngas Concession Schemes are available to people in need. In 2023 over **42,000** households benefited from concessions totalling **HK\$24 million**

## Community Engagement

Towngas is making a lasting and positive impact on the communities we serve. This is being accomplished through direct and indirect social investment programmes, particularly those that focus on community health and wellness, the environment and youth development. We also form partnerships with associations and institutions that align with our values.

In 2023, Towngas donated HK\$4.1 million towards community activities and provided over 14,000 volunteer hours to assist approximately 548,000 beneficiaries in Hong Kong. On the Chinese mainland, with nearly 11,000 employees from our mainland utility businesses participating, the team spent over 440,000 hours in volunteer services.

Additionally, we completed a trial project to evaluate and quantify social return on investment (SROI) in 2023. By identifying and measuring the social, environmental and economic outcomes generated by a project, we can evaluate the financial value and positive impacts of our community investment programmes. This analysis helps us assess the impact on stakeholders, identify areas for performance improvement and enhance the effectiveness of our investments. In the years ahead, we will continue to expand the implementation/application of SROI analysis for new projects.

To advocate for local communities and facilitate social dialogue, we contribute to public policy for the utility industry by providing our input in major consultations to support the Government's decision-making process. It should be noted that Towngas does not make any monetary contributions to political campaigns, political organisations, lobbyists or lobbying organisations.

## Community Health and Wellness

Towngas has a long-standing tradition of helping the community through various initiatives and events, with programmes designed to spread joy among the elderly, low-income families, persons with disabilities and others in need. In 2023, we continued to donate festive food for the community in Hong Kong.



**Mooncakes for the Community**  
**330,000**



**Rice Dumplings for the Community**  
**200,000**



**Soup to Warm the Heart**  
**1,800**

On the Chinese mainland, nearly 90 project companies wrapped and distributed more than 32,000 rice dumplings for welfare groups and people in need in 2023.

## Setting a Guinness World Record™: "The most people making rice dumplings simultaneously online and in a single venue"



In 2023, we organised the Rice Dumplings for the Community programme for the 24th consecutive year, which set a Guinness World Record™ for "the most people making rice dumplings simultaneously online and in a single venue". For this event, which was themed "The Heritage of Love and Care", distributed 200,000 rice dumplings to support the elderly and those in need during the Dragon Boat Festival.

In addition, the event served as a meaningful engagement between the Towngas Volunteer Service Team and various community groups. During this collaboration, participants eagerly embraced the art of rice dumpling wrapping. The interactions allowed members of ethnic minorities to gain deeper insights into this Chinese festival and enjoy moments of cultural exchange.



## Sensory Restaurant on Wheels™

Towngas joined forces with the elderly-focused social enterprise, The Project Futurus, to organise three Sensory Restaurant on Wheels™ events that created a traditional yum cha experience for the elderly. For this event, elderly care homes were transformed into nostalgic dim sum restaurants featuring freshly made soft meal dim sum to enhance the appetite of elderly people with dementia. Members of the Towngas Volunteer Service Team, who took on roles such as chefs, restaurant managers and waiters, helped serve the seniors to the venue so they could relive familiar memories and tastes.



## Love on Delivery

Since 2020, Towngas has partnered with the Christian Family Service Centre to bring the Love on Delivery programme to grassroots families. During the COVID-19 pandemic, this initiative organised several engaging activities under the theme "Exploring Fresh Culinary Ideas". Activities included a tabletop game competition, farming activity and cooking competition, all designed to promote the physical and mental well-being of the families.

## Support for Earthquake Relief Efforts

Towngas also assisted local residents affected by the 6.2-magnitude earthquake that struck Gansu province on 18 December 2023. To assist those in need and express our sympathy, the company donated RMB1 million in support of relevant relief organisations on the Chinese mainland, so that people can resume their daily lives as soon as possible.

## Sending Warmth to Thousands with Smart Technology

Towngas partnered with several social welfare organisations to launch this programme, and committed to donate Smart Controllers and Smart Meters to around 10,000 households in need to improve home safety for elderly.

These devices are especially beneficial for elderly people with mild cognitive impairments, as users can monitor and control cooking appliances remotely via a mobile app. The Smart Meters are also equipped with an abnormal usage detection feature, which lets users know they should shut off the device if they forget to do so, and an automatic meter reading capability that eliminates the need for seniors to read their own meters.



## Promoting Mental Wellness through ESG Series

The Towngas Cooking Centre partnered with New Life Psychiatric Rehabilitation Association to create a 6-episode ESG video series. With a focus on mental health awareness and stress management through open-flame cooking, the programme features chef Alice Ho. During the programme, she shared her personal experiences dealing with depression accompanied by discussions with clinical psychologists, while demonstrating healthy recipes. In addition to promoting open-flame cooking, the videos reflect our commitment to bringing viewers innovative social programmes for the benefit of diverse sectors in the community.

## The Environment

During the year, Towngas continued to support green groups and government-led environmental protection programmes, including The Green Earth's Plantation Enrichment Project to build native tree woodlands and WWF's Big Bird Race 2023 to promote habitat management. On the Chinese mainland, we organised a variety of low-carbon, environmental programmes under the theme "Forging a Green and Low-Carbon Future". More than 100 of our project companies participated in these programmes in 2023, during which they planted over 7,000 saplings and saved over 8,400 kWh of electricity.



also interactive sessions on hydrogen energy production and its applications in Hong Kong. Participants found these sessions especially interesting as they provided a better understanding of the potential contributions this new energy could have in future.

We also inaugurated the Towngas Green Flame Energy Scientist Programme, delivered by a new Green Flame Education Team comprising employees with a professional engineering background or ESG knowledge. The primary purpose of the programme is to visit schools and teach students about topics such as future energy and climate change. 22 primary schools have enrolled in this programme so far, with 100 Green Flame Campus Ambassadors assigned to help spread the message of sustainable energy and environmental conservation.



## Environmental Education through Energypedia Learning Cards

In an innovative project designed to make environmental protection education more fun, Towngas launched the Energypedia learning cards as a supplementary teaching aid for schools. Tailored to upper primary to junior secondary students, the 52 cards in the set cover five topics, including historical anecdotes, new energy knowledge, scientific fun facts, an ESG glossary and expert insights. Each set also includes a booklet with detailed information for independent or parent-guided reading.

The ultimate goal of the Energypedia project is to stimulate students' interest in energy science and engineering, as well as green and low-carbon living. To further spread energy knowledge and environmental awareness in Hong Kong, Towngas plans to distribute free copies of the Energypedia learning cards to primary schools in the 2024-25 school year.



## Youth Development

### Strive and Rise Programme

Towngas actively participated in the Strive and Rise Programme organised by HKSAR Government to aid students with disadvantages and from grassroots families in Hong Kong. In 2023, we hosted three Towngas Green Day events for over 100 participants. For this event, we invited students to our North Point Headquarters building and the Tai Po Gas Production Plant for an immersive learning experience about the development of our energy services and clean energy.



Mentors accompanied their mentees on various activities and experiences, while helping these young people establish a clearer direction for their life planning.

### Exploring Sustainable Farm to Kitchen Practices

To address the critical challenge of food security, the Towngas Cooking Centre joined the EBZ Consilium Education Foundation in 2023 to organise a parent-child workshop on AI agricultural technology and sustainable farming. During the workshop participants learned about Achiever 4 (IoT), an AI tool used to enhance crop yields and quality with less manpower. Also included in this hands-on approach to learning was a lesson in cooking desserts using natural ingredients.



In another sustainable education programme, the Towngas Cooking Centre collaborated with District Offices to promote green culinary concepts and open-flame cooking through the ESG Youth Era COOK Training Programme. The five-day programme covered cooking techniques, ingredient selection, dining etiquette and sustainable dining principles, all with the aim of opening a possible career pathway for the young participants.



### Gentle Breeze Movement

Celebrating its 10th anniversary this year, the Gentle Breeze Movement continued to enhance the educational environment for teachers and students on the Chinese mainland.

Over the past decade, this initiative has undertaken projects in over 50 schools and donated educational materials valued at over RMB5 million. The Gentle Breeze Movement has also constructed Towngas Charity Libraries that provide nearly 20,000 books to students. As a result, children have been exposed to literature and had their perspectives broadened to the world beyond their school walls.

# R REVITALISING OUR STRENGTHS

- Corporate Governance
- Risk Management
- Business Integrity
- Data Privacy and Cyber Security

Towngas is deeply committed to sustainable development and strong corporate governance practices. In recognition of the need to promote greener, more resilient economies and societies that are fair and inclusive, we have established a Board ESG Committee to elevate ESG issues to the board level.

Risk management is a top priority at Towngas. We believe we can successfully manage the ESG risks that arise during the Just Transition period and benefit from the opportunities associated with them. We are also confident that this approach will enable us to enhance the trust of our stakeholders and achieve our sustainable development goals for long-term prosperity.

## 2023 Performance Highlights

Established the **Board ESG Committee** to provide effective oversight of all ESG-related matters



Upgraded the **Privacy Management Programme** online platform to enhance privacy management



Provided anti-corruption training to the **Board**



## Future Actions and Targets

Regularly review relevant policies, guidelines and **effectiveness of our risk management system** in a dynamic business environment



Coordinate with law enforcement to exchange knowledge and guard against **cyber threats**



Promote awareness of **corporate culture and cybersecurity** through e-learning programmes



## Management Approach

The Board of Directors (the Board) is our highest governance body at Towngas. Its members are fully committed to the highest standards of accountability, transparency and governance practices.

Our **Board Diversity Policy** and **Nomination Policy** mandate that the Board maintains a balanced and diverse mix of skills, professional experience and diversity of perspectives among its members that are relevant to the requirements of the Company's businesses.

Risk management is a top priority at Towngas. We have put in place a robust system of risk management practices and internal controls, covering all business units in the organisation.

To maintain the integrity of our business, we uphold a rigorous set of ethical standards and expect employees and suppliers to do the same, as stated in our **Code of Conduct**

and **Code of Practice for Suppliers**, respectively. We have also established an **Anti-Fraud Policy** to promote integrity as a core company value and a **Whistleblowing Policy** that encourages employees and stakeholders to report suspected cases of misconduct, malpractice or irregularities.

We build trust with our stakeholders by ensuring their data is protected. Our **Personal Data Privacy Policy** provides guidelines for the collection, use, sharing and protection of related data, while our **Information Security Policy** helps to ensure the confidentiality, integrity and accessibility of our information and technology assets. With the introduction of a holistic Privacy Management Programme, we have improved our data protection strategy beyond regulatory requirements to meet our customers' highest expectations of data privacy.

For more information on our management approach and relevant policies, please refer to our **corporate website**.

## Corporate Governance

As at 31 December 2023, the Towngas Board of Directors (the Board) comprised a total of nine directors, of which two are executive directors, four are non-executive directors, and three are independent non-executive directors.



### Non-executive Directors

Dr. Lee Ka-kit (Chairman), Dr. Lee Ka-shing (Chairman), Dr. Colin Lam Ko-yin and Mr. Andrew Fung Hau-chung



### Independent Non-executive Directors

Dr. the Hon. Sir David Li Kwok-po, Prof. the Hon. Poon Chung-kwong and Dr. the Hon. Moses Cheng Mo-chi



### Executive Directors

Mr. Peter Wong Wai-ye and Mr. John Ho Hon-ming\*

\*Mr. John Ho Hon-ming retired and ceased to be an Executive Director on 1 January 2024 and Mr. Edmund Yeung Lui-ming was appointed by the Board as Executive Director with effect from 1 January 2024.

As part of our commitment to diversity, we have set a goal to appoint at least one female board member to the Board by 31 December 2024.

For further information on the Board, its composition, biographical details, remuneration, operation and committees, please refer to our [corporate website](#) or the [Annual Report 2023](#).

## Managing ESG at Towngas

The Board ESG Committee provides effective oversight of all ESG- and climate-related matters. This committee plays a crucial role in assisting the Board to oversee the management of ESG.

Furthermore, we have implemented comprehensive ESG- and climate-related strategic initiatives, which enable us to identify new opportunities while effectively mitigating relevant risks associated with ESG and climate change. By implementing these initiatives, we aim to gain a better understanding of and manage the risks posed by ESG- and climate-related factors.

For more details, please refer to the [corporate website](#) or the [ESG Governance](#) section of this report.

## ESG-linked Compensation

The variable compensation of the Managing Director and senior executives is linked to a broad range of financial returns (including return on assets, equity and capital) and ESG material issues, with 5% of the variable compensation linked to the achievement of ESG objectives, such as enhancement of ESG ratings, reduction of greenhouse gas (GHG) emissions, and achievement of health and safety performance targets. Compensation can either increase or decrease based on the effectiveness of achieving those objectives.

In Hong Kong, additional performance bonuses are provided to encourage all employees to implement ESG projects and initiatives. In 2024, ESG performance will continue to be a key performance indicator for the senior executives in their annual performance appraisals.

## New ESG Data Manual

In today's rapidly-evolving ESG landscape, pressure is growing among regulators, investors and other stakeholders for companies to be more transparent in their ESG disclosures, leading to greater demand for detailed data.

To align our disclosures with current ESG standards and ratings, we developed the ESG Data Manual during the year. It contains detailed descriptions and calculation formulas that help us collect data more efficiently. The manual also serves as a valuable tool for maintaining data integrity, which builds confidence among stakeholders.

## Risk Management

As part of our ongoing risk management efforts, the company conducts risk assessment at least annually, which include the identification of key risks and mitigation measures to ensure risks are effectively managed. The Board Audit and Risk Committee ensures that a review of the effectiveness of the Group's risk management system has been conducted at least annually. This process involves close monitoring of business environment, assessing and prioritising risks.

In 2023, the key risks (and emerging risks) across all businesses and our value chain are summarised in the table below.

### Details of Key Risks

Potential Impact	Mitigation Measure	Value Chain Impact <sup>1</sup>
<b>Market</b>	<b>Severe market competition:</b> Slowing demand due to global warming concerns, competition, direct sales and alternative energy sources could affect revenue and market share.  <b>Finance</b> <b>Liquidity risk:</b> Unexpected cash outflow for investment purposes or insufficient cash inflow from operation due to unpredictable changes.  <b>Credit risk:</b> Customer default in repayment.	<b>Diversify sector and market dependency:</b> Explore new business opportunities and gas applications both in Hong Kong and on the Chinese mainland.
<b>Climate Change</b>	<b>Increased capital expenditure:</b> Investments in new technologies and infrastructure may be required for reducing GHG emissions and adapting to climate change.  <b>Decline in gas demand:</b> Increasing awareness and concern about climate change among consumers and investors can influence market dynamics, leading a decline in gas demand.	<b>Implement financial liquidity stabilising measures:</b> Maintain healthy cash flow and sufficient marketable securities, with an adequate amount of credit facilities and ability to close out market positions.  <b>Credit Monitoring:</b> The Group has a credit policy to handle the credit risk of customers. Significant concentration of sales to any individual customer is avoided.
		<b>Enhance resilience plans for extreme weather events:</b> Develop and implement comprehensive resilience plans to prepare for and respond to climate change-induced extreme weather, including vulnerability assessments and infrastructure strengthening.  <b>Reduce GHG emissions and set reduction targets with concrete action plans:</b> Implement measures to reduce emissions and establish long-medium-short term targets aligned with global climate goals.
	<b>Invest and diversify businesses for energy transition:</b> Allocate investments to low-carbon technologies, explore renewable energy sources, and adopt sustainable practices to reduce reliance on fossil fuels and facilitate the transition to a more sustainable energy system.	1 2 3

<sup>1</sup> 1 – Upstream Supply Chain; 2 – Towngas Operations; 3 – Downstream Customers

Potential Impact	Mitigation Measure	Value Chain Impact <sup>1</sup>
<b>Facility and Operation</b>		
<p><b>Gas leakages, supply disruptions, fire/explosions:</b> Failure of major assets, including the transmission and distribution network, production plants and storage facilities and distributed energy systems, could lead to major gas leaks, supply interruption, fire or explosions which could pose safety hazards to workers, residents and the environment.</p> <p><b>Severe damage to Tawngas critical infrastructure/facilities:</b> A physical attack or extreme weather events could damage critical facilities, leading to safety incidents and supply disruptions.</p>	<p><b>Undertake active leakage and repair (LDAR) programmes:</b> Utilise Supervisory Control and Data Acquisition (SCADA) to monitor and control our gas network and all governors, employ gas detectors and smart gas meter to detect leaks and enhance security.</p> <p><b>Collaborate with regulatory authorities and industry peers:</b> Comply with regulations, participate in safety audits, and engage with regulatory authorities and industry peers to improve safety and operational standards.</p> <p><b>Develop and strengthen emergency response plans:</b> Create contingency plans for various scenarios, with clear procedures, communication protocols and coordination with authorities.</p> <p><b>Apply for insurance:</b> Use insurance to protect against loss from supply disruptions.</p> <p><b>Provide adequate training:</b> Provide training on handling procedures, equipment operation, emergency response and hazard awareness. Conduct regular practice drills to enhance preparedness.</p>	1 2 3
<b>Occupational Health and Safety</b>		
	<p><b>Disruption of operations:</b> Occupational health and safety issues could cause shutdowns or delays to operation.</p> <p><b>Injuries and loss of life:</b> Serious safety incidents could cause injuries and loss of life.</p>	
<b>Human Resources</b>		
	<p><b>Manpower crisis:</b> Key management or mass workforce absenteeism could have a material impact on our operations.</p> <p><b>Manpower shortage and retention challenge:</b> The inability to retain or attract skilled professionals could affect our operations.</p>	
	<p><b>Emergency plans to ensure business continuity:</b> Establish emergency plans and a mechanism to ensure business continuity in case of a crisis outbreak or spreading of communicable disease.</p> <p><b>Manpower succession:</b> A manpower succession plan is in place to match existing and future human capital needs against business strategy.</p>	2

<sup>1</sup>1 – Upstream Supply Chain; 2 – Tawngas Operations; 3 – Downstream Customers<sup>1</sup>1 – Upstream Supply Chain; 2 – Tawngas Operations; 3 – Downstream Customers

Potential Impact	Mitigation Measure	Value Chain Impact <sup>1</sup>	Potential Impact	Mitigation Measure	Value Chain Impact <sup>1</sup>
<b>Legal</b>			<b>Materials</b>		
<b>Influence on operations from regulatory changes:</b> Changes in laws, regulations or rules could affect operations.	<b>Active and on-going monitoring of regulatory changes and requirements:</b> Ongoing monitoring by the Group of regulatory changes and requirements to ensure compliance.	2	<b>Feedstock supply interruption:</b> Significant interruptions in the supply of natural gas or naphtha could impact production capabilities.	<b>Diversify fuel sources:</b> Source natural gas and naphtha from multiple regions or countries, purchase liquefied natural gas directly from overseas, and obtain unconventional piped natural gas and gas to reduce dependence on a single source.	1 2 3
<b>Information Technology</b>			<b>Increased fuel cost:</b> Supply chain disruptions could drive up natural gas prices, impacting customers and businesses.	<b>Increase gas storage capacity:</b> Expand gas storage capacity with multiple storage facilities (e.g. underground salt caverns in Jiangsu province) for more efficient gas inventory management and reduce supply bottlenecks during high-demand periods.	
<b>Disruption of operations:</b> Critical system failures or severe cyber-attacks could cause loss of productivity.	<b>Adopt robust protective system:</b> Implement firewalls, intrusion detection systems and access controls to safeguard against cyber attacks.	1 2 3	<b>Nonconforming quality of key materials for gas business:</b> Significant impact on operations due to nonconforming quality of key materials for gas business.	<b>Establish a dedicated team for gas supply chain management:</b> Coordinate natural gas supply and transmission strategically.	
<b>Data breach and loss of sensitive information:</b> Cybersecurity breaches could result in the leakage of customer data and reputation damage.	<b>Conduct regular security assessments:</b> Commission third-party assessments of systems to identify vulnerabilities and improve security standards.		<b>Impact on downstream customers:</b> Supply chain disruptions could affect operations (e.g. gas business), leading to reduced supply and increased costs.	<b>Conduct regular supplier evaluation and quality inspections:</b> establish regular checking and evaluation procedures to ensure material quality.	
<b>Financial loss:</b> Cybersecurity incidents could lead to financial burdens, including remediation costs and potential fines.	<b>Develop and strengthen contingency plans:</b> Develop comprehensive contingency plans, establish system and data backup, and conduct drills to ensure business continuity.				
<b>Regulatory non-compliance:</b> Non-compliance with information security regulations could cause penalties and legal consequences.	<b>Ongoing monitoring on information security regulations:</b> Stay updated on information security regulations and ensure compliance, particularly on the Chinese mainland.				
	<b>Provide adequate training:</b> Implement programmes to educate employees on cybersecurity and safe information handling practices.				
			<b>Reputation, Ethics and Integrity</b>		
			<b>Fraudulent activities:</b> Internal fraud could lead to serious impact.	<b>Implement whistleblowing programme:</b> Establish formal channels for reporting suspected cases of fraud.	2
			<b>Employee misbehaviour and media attacks:</b> Employee misbehaviour and media attacks could harm our corporate image.	<b>Develop clear ethical standards and policies:</b> Communicate Towngas ethical standards and <i>Code of Conduct</i> to all stakeholders.	
				<b>Provide adequate training:</b> Provide regular training to employees.	

We will further enhance our ability to assess the potential impacts of our decision-making processes and the uncertainties inherent in estimating future events. This enhanced foresight will enable us to proactively prepare for, and navigate a broad spectrum of, potential scenarios and variables, particularly those with uncertain yet materially significant outcomes. In our evaluations, we will continue to carefully consider all potential risks and opportunities.

For further information about risk management at Towngas, please refer to our [Annual Report 2023](#).

## Business Integrity

In order to maintain the highest standards of business integrity, we closely monitor emerging regulations and provide mandatory training to our employees in anti-corruption and the *Code of Conduct*. In 2023, we held over 35,000 hours of anti-corruption training for employees in Hong Kong and on the Chinese mainland, as well as training for members of the Board. There was no reporting on breaches on conflicts of interest in Hong Kong.

To extend our commitment to integrity and avoid any potential conflicts of interest, we invited 26 management personnel from various service contractors to attend an anti-corruption seminar conducted by the Independent Commission Against Corruption (ICAC).

## Legal Compliance

The Group complies with all relevant laws and regulations in all material respects, both in Hong Kong and on the Chinese mainland, that have a significant impact on the businesses or operations of the Group's core business segments. These include laws and regulations related to business ethics, health and safety, employees, customers and the environment, which are the basic requirements of how we operate.

 Business Ethics	Anti-corruption Anti-competitive behaviour Labour standards (child and forced labour) Money laundering or insider trading	No reported cases No reported cases No reported cases No reported cases
 Health and Safety	Occupational health and safety Customers and the public	No reportable <sup>1</sup> cases <sup>2</sup> No reportable <sup>1</sup> cases
 Employees	Employment practices <sup>3</sup>	No reportable <sup>1</sup> cases
 Customers	Customer privacy Product and service information and labelling, and marketing information	No reported cases
 The Environment	–	No reportable <sup>1</sup> cases

<sup>1</sup>These include material violations that resulted in fines greater than HK\$1 million or non-monetary sanctions.

<sup>2</sup>For work-related injury cases, please refer to the *Occupational Safety and Health* section of this report.

<sup>3</sup>Employment practices related to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, anti-discrimination and other benefits and welfare.

## Data Privacy and Cyber Security

To manage and monitor our customers' personal data effectively, we have developed a Privacy Management Programme (PMP) online platform. In 2023, this online platform was upgraded with enhanced features and enriched content to increase the efficiency of programme controls, including personal data inventory, risk assessment tools, handling of data breach incidents and data processor management. The upgraded platform ensures that all initiatives, projects and services take privacy protection into consideration at all stages. In addition, we will leverage the dashboards in our revamped PMP online platform to enhance privacy management by providing management with a centralised interface to monitor, control and manage privacy practices.

With the rise in complex cyber-attacks, cybersecurity has become an issue of growing concern for Towngas. To protect ourselves against these threats, we have implemented a range of measures across the Group and extended businesses.

One of these is a comprehensive cyber security framework as part of our *Information Security Policy* to ensure the confidentiality, integrity and availability of our information and technology assets. At the heart of this system is a Security Operation Centre (SOC), which continuously monitors and improves our security around the clock. It is built on the ATT&CK (Adversarial Tactics, Techniques, and Common Knowledge) Framework to prevent data leakages and intellectual property loss, with minimal interruptions to business continuity, thereby reducing data privacy and cyber security risks.

During the year, we completed an external vulnerability assessment with verification by an independent party, which included a critical system vulnerability assessment and firewalls review. Email and SMS phishing simulations were carried out to raise awareness of these increasing threats. In addition, we have established an internal vulnerability assessment platform to continuously detect and repair loopholes.

Apart from the aforementioned vulnerability assessment, we performed a cybersecurity risk assessment for Information Technology and Operation Technology, based on international standards and frameworks with peer benchmarking against our cybersecurity readiness and control measures. The outcome of this assessment will help us recognise our current security posture and formulate a plan to strengthen our governance. We also conducted an Attack Simulation (aka Red Teaming) to identify any blind spots in our defence system for continuous improvement.

To improve our preparedness in response to potential cyber incidents, we conducted a Cybersecurity Tabletop Exercise focusing on testing and refining our incident response plans and procedures related to cyber security issues. The drill scenario included a data leakage simulation and malware outbreak.

In 2023, the Towngas data centre operation in Hong Kong was certified to ISO 27001. The Group was also in compliance during the year with all regulatory requirements and did not receive any customer complaints regarding data loss or breaches of data privacy in Hong Kong.



# GREENING THE FUTURE

Business Innovation Energy Transition Green and Sustainable Finance

Towngas is playing a pivotal role in the Just Transition, as we move away from traditional energy sources. We are fully committed to providing a secure and reliable clean energy supply at an affordable cost to our customers, and progressively switching from fossil fuels and diversifying into energy sources with cleaner options such as hydrogen and solar energy towards a low-carbon economy.

By harnessing innovation and sharing technical expertise through collaboration and partnerships, we are not only supporting our own business growth. We are also encouraging the development of smart and clean energy solutions for all. Through our proactive efforts, we are confident that we can make a significant contribution to the Just Transition and create a more sustainable and equitable future.



## 2023 Performance Highlights

354 renewable energy projects



Produced green methanol successfully



First Hong Kong-funded enterprise to issue a sustainability-linked Panda Bond on the Chinese mainland



3rd TERA-Award received record-high 450 submissions from 59 countries and regions



Hong Kong's first hydrogen fuel cell charging facility for electric vehicles at a padel court in Sai Kung



Zero-carbon Technology Investment Fund reached fundraising goal of RMB5 billion



## Future Actions and Targets

Explore sustainability-linked financing initiatives



Further explore the possibility of commercialising hydrogen applications in Hong Kong



## Management Approach

In line with a vision for a greener future, we adopt clean and smart energy solutions with the help of green finance tools to achieve sustainable growth.

We meet this commitment by providing safe, reliable, clean and smart energy to our customers, while exploring and utilising fossil fuel alternatives and promoting innovation to enhance the economic and social wellbeing of our stakeholders and the ecosystem.

To thrive as a sustainable energy supplier in an ever-changing global business environment, we have embedded our "**Growth = innovation x implementation**" ( $G = i \times i$ ) philosophy into corporate culture and business operations to motivate and empower our employees to pursue new and innovative ideas. We also encourage our employees and the wider community to bring forward innovative concepts that drive our growth and support a low-carbon future.

For more information on our management approach, please refer to our [corporate website](#).

## Business Innovation

In the age of Just Transition, the link between business innovation and sustainable business growth is becoming even stronger. This is why we embrace openness to advanced products and services, support internal creativity and pursue partnerships with other organisations at the cutting-edge of technology. Through these strategic initiatives, we are able to stay ahead of market trends and deliver innovative solutions that meet the evolving needs of our customers in the dynamic energy landscape.

### Innovation in Action

In 2016, Towngas established an Innovation Funding programme that invites our employees to submit proposals for growth. The programme was then extended to the Chinese mainland in 2019. So far, the Group has awarded a total of HK\$1.8 million to 32 projects for research and development under this programme.

We also support energy startups through financial investment, and provide assistance in strategy formulation, product implementation and market development. We are helping EnerVenue develop its new nickel-hydrogen batteries, which can last up to 30 years and withstand ultra-high and ultra-low temperatures. This makes them suitable for a wide range of applications, such as photovoltaics, wind energy, microgrids and charging piles, and as a low-cost solution to the challenges of energy storage during the current energy transition era.



### TERA-Award Smart Energy Innovation Competition



The award presentation ceremony for the second TERA-Award Smart Energy Innovation Competition, which recognises organisations that achieve innovative breakthroughs in smart energy and related fields, was held on 28 March 2023.

Towngas supports the winners in the form of funding and providing resources to help build carbon-neutral infrastructure. We have already committed to providing a testing ground and application scenarios for i2Cool Limited (i2Cool), the Gold Award winner. We plan to apply i2Cool product to the surface of our naphtha tank at the Tai Po Gas Production Plant to reduce solar radiation absorption, lower the tank temperature and reduce the vaporisation of naphtha.

#### Top winners of the second TERA-Award:



##### Gold

Electricity-free Cooling Technology  
i2Cool Limited



##### Silver

Co<sub>2</sub> Reduction with Microalgae from Coal-fired Fuel Gas  
The SPIC Research Institute of Smart Energy Company Limited; The State Key Laboratory of Clean Energy Utilisation of Zhejiang University; and The Key Laboratory of Low-grade Energy Utilisation Technologies & Systems of the Ministry of Education of Chongqing University



##### Bronze

HydroPro  
HydroPro New Energy Corporation

The third edition of the TERA-Award Smart Energy Innovation Competition attracted 450 zero-carbon technology projects from 59 countries and regions. This represents a significant increase of over 40% and 60% respectively compared with the previous edition and reflects the growing international reach of the competition.

Further details on the competition are available at the [TERA-Award website](#).

## Towngas Energy Academy

The Towngas Energy Academy (TEA) plays an important role in facilitating collaboration between the government, enterprises, institutions and industrial experts in the Greater Bay Area. Its primary focus is on smart green energy, including renewable energy, hydrogen, energy conservation, carbon capture and utilisation, energy digitalisation, and waste and wastewater treatment.



TEA is the first Hong Kong-funded clean energy application research institute settled in Shenzhen, focusing on research and development of core key technologies in the field of clean energy and is committed to creating a zero-carbon smart energy ecosystem. In 2023, we signed a cooperation agreement with the People's Government of Futian District, Shenzhen for the TEA and Towngas Digital Intelligence Energy Technology Company Limited to settle in the Shenzhen-Hong Kong Innovation and Technology Cooperation Zone in Futian, Shenzhen. With this agreement, the way has now been opened for closer collaboration between Shenzhen and Hong Kong.

## Smart Solutions

Towngas is constantly identifying innovative ideas that improve operational efficiency and customer experience. Smart products developed by Towngas, including smart appliances, controllers, meters, and governors, have been rolled out to customers in Hong Kong and across our network.



The smart controllers and meters produced by Towngas incorporate Internet of Things (IoT) technology, allowing customers to monitor the appliance's status and turn it off remotely using a mobile app. The smart meter can also automatically cut off gas supply in case of anomalies, and customers can monitor gas and water consumption or pre-set hot water temperatures by adding an external communication control unit. By the end of 2023, 31% of our customers in Hong Kong were using smart meters.



The smart governors we have developed to improve operational efficiency utilise advanced narrowband IoT (NB-IoT) technology for wireless data transmission. This offers benefits such as low power consumption, cost-effectiveness and long-distance communication. With this system in place, on-site inspections by employees are no-longer needed as the governors allow for 24 hourly monitoring and real-time updates. What's more, they are equipped with solar power systems, allowing them to be operated more sustainably and environmentally friendly.

To date, we have upgraded 80 existing gas governors with this smart system in various districts across Hong Kong. In line with our ongoing commitment to sustainability, we plan to double the number by the end of 2025.

## Zero-carbon Technology Investment Fund

The Group and IDG Capital launched the first Zero-carbon Technology Investment Fund on the Chinese mainland, which has now reached its fundraising goal of RMB5 billion. Set up to promote the development of new energy and zero-carbon solutions, the fund has received support from local governments, leading sovereign wealth funds, large domestic and foreign insurance funds, government venture capital funds, and other renowned institutions.



The fund invests in innovative technologies that address carbon emissions challenges. Among its priorities for investment are solar energy, energy storage, smart grids, battery charging and swapping, hydrogen energy and carbon capture, as well as carbon trading and management, etc.

## Energy Transition

To transform our business into a low-carbon energy provider, we are focusing on the development of natural gas and renewable energy, with new gas projects mostly focusing on Distributed Energy Systems (DES), coal-to-gas conversion and hydrogen development. We also invest in renewable energy, including the establishment of zero-carbon smart industrial parks and innovative waste-to-energy projects. This strategy combined with our technology leadership will enable Towngas to transition smoothly towards a low-carbon future.

### The Role of Gas in Energy Transition

In 2023, the total gas sales of Hong Kong have remained relatively steady, totalling approximately 27,125 million MJ.

In Hong Kong, apart from the Combined Heat and Power (CHP) system driven by landfill gas to reduced carbon emissions for our commercial and industrial customer, we are actively exploring opportunities to implement our Desiccant-wheel Primary Air Handling Unit (D-PAU) system. For instance, Union Hospital plans to incorporate the D-PAU system in their newly-expanded ancillary wards to enhance humidity control and indoor air quality.

Meanwhile, the Chinese mainland's "30-60" dual carbon goals have led to the implementation of robust policies and stricter energy efficiency standards across industries and public sectors. This has created a growing demand for versatile energy solutions and sophisticated energy management services. Therefore, we are expanding our "Gas+" business, which focuses on providing comprehensive, low-carbon, high-efficiency, and asset-light energy service solutions.

On the Chinese mainland, the total volume of city gas sales in 2023 was approximately 34.7 billion m<sup>3</sup>. Additionally, the total number of customers reached 40.19 million, marking an increase of 7.8% throughout the year.

### Transition to a Hydrogen Economy

Hydrogen is a clean fuel with a wide range of applications, such as fuel-cell vehicle, heating system, electricity generation and storage. In 2023, Towngas made remarkable progress exploring these opportunities in Hong Kong, on the Chinese mainland and around the world.

#### Hydrogen in Hong Kong

As town gas is composed of approximately 50% hydrogen, we have been exploring the potential of using hydrogen directly extracted from our underground pipeline network across Hong Kong.

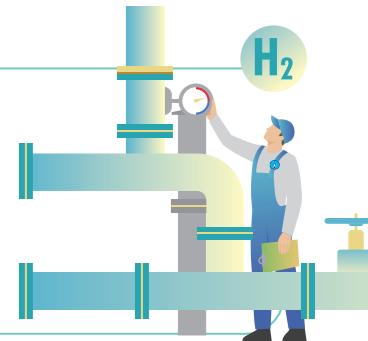
In 2023, the Inter-departmental Working Group on Using Hydrogen as Fuel led by the Environment and Ecology Bureau of Hong Kong gave its agreement-in-principle to our two hydrogen trial projects. These include the hydrogen extraction system at the Tai Po Gas Production Plant and hydrogen extracted from the existing town gas network in Sai Kung to generate electricity for charging electric vehicles.

To accelerate the energy transition in Hong Kong, Towngas has formed partnerships and collaboration agreements with various stakeholders. One is the agreement with Bravo Transport Services Limited (the parent company of Citybus), which signed a Memorandum of Understanding (MOU) with Towngas to explore hydrogen as an alternative source of fuel for public buses. We have also been proactively discussing with government and other stakeholders to explore more hydrogen applications in Hong Kong.



The benefits of hydrogen distribution with underground pipelines include the following:

- ✓ Uninterrupted supply
- ✓ Reduce new investment cost by utilising existing gas infrastructure
- ✓ Not affected by weather and road traffic conditions
- ✓ Minimise road transportation risks and lower transportation costs, reducing carbon emissions



To promote the use of clean hydrogen energy, we share our knowledge and experiences with external stakeholders, including government officials, professional bodies and customers, at meetings such as the International Gas Union (IGU) 2023 Council Meeting.

#### Hydrogen on the Chinese Mainland

On the Chinese mainland, delivering hydrogen blended with natural gas to end users can substantially reduce carbon emissions from natural gas pipelines.

To accelerate the adoption of hydrogen technology nationally, we have been playing a major role in the development of multiple hydrogen energy utilisation standards. We were also the co-organiser of a conference that announced the results of a feasibility study conducted on blending natural gas pipeline with hydrogen. The conference sparked in-depth discussions among the industry professionals who attended.

The feasibility study proposed a development path for blending hydrogen into the natural gas pipeline network and promoted the implementation of more demonstration projects. With its extensive gas infrastructure across the Chinese mainland, the Group has the advantage of participating in national natural gas hydrogen blending research projects. These include the Hydrogen into Ten Thousand Homes demonstration project in Weifang city, Shandong province, targeting approximately 100,000 households with a hydrogen-blending ratio of 10%.

Despite challenges, we support trial projects for hydrogen and its commercialisation, as it could play a critical role for a greener low-carbon future on the Chinese mainland. Thus, Towngas will remain wholeheartedly committed to driving forward the development of hydrogen as a source of clean energy.

#### New development in hydrogen sensors

Together with Tsinghua Shenzhen University International Graduate School and M-Tech Metering Solutions Company Limited, the Towngas Energy Academy has achieved a breakthrough in hydrogen transmission technology with the introduction of its Micro-Electro-Mechanical System (MEMS) hydrogen sensor.

This sensor is capable of monitoring and detecting hydrogen leakages and pipeline hydrogen content in real time, at a lower cost and with a longer lifespan. At the same time, this sensor can be widely used in hydrogen fuel cell vehicles, electric vehicles, lithium battery energy storage, transformers, and other related hydrogen applications. The cooperative arrangement will also provide strong technical support for the Group's business of blending hydrogen with natural gas.

#### Hydrogen around the world

Towngas is seeking new ideas in hydrogen technology from all around the world through initiatives such as the TERA-Award Smart Energy Innovation Competition. Technology and innovation teams from across the globe submitted their innovative technology ideas and solutions, with hydrogen as one of the main focus areas. In the second TERA-Award, the Bronze Award was given to the HydroPro project, a next-generation hydrogen production system. Along with other winning entries, it has become an early-stage incubation project of the Towngas Energy Academy.

# Making Clean Energy Reliable and Affordable

Promoting the transition to a green economy can present challenges. If not handled properly, the shift away from fossil fuels towards renewable energy sources could result in higher costs and impact energy supply.

One of the greatest challenges with traditional renewable energy is its strong dependence on weather conditions, which cannot always be predicted or controlled. Nevertheless, we recognise the overarching need to provide a secure and reliable energy supply at an affordable cost to our customers and will continue to explore renewable energy solutions in alignment with the Just Transition principles.



## A Reliable and Secure Energy Provider

With over 160 years of experience in energy supply, Towngas has always made the security and reliability of its energy services a top priority.

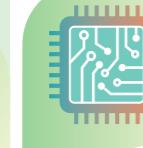
This tradition will continue as we make the transition from a traditional utility company into a leading integrated supplier of clean energy. To achieve this, we have allocated substantial resources towards the research and development of low-carbon technologies and our renewable energy business. We have also established the Towngas Energy Academy, a research institute dedicated to developing clean energy applications and providing affordable zero-carbon solutions for customers.



## Three Pillars of Smart, Affordable Energy



Integrated Energy Solutions



Decarbonisation



Digitalisation

Our renewable energy business rests on three core pillars: Integrated Energy Solutions, Decarbonisation and Digitalisation. Building and managing zero-carbon smart industrial parks is a new business model for Towngas. Designed to bring customers all-encompassing integrated smart energy solutions, they include the use of prominent solar photovoltaic power generation systems, cutting-edge technologies for energy storage, and charging and swapping power stations. We also enhanced our Towngas Smart Energy Platform in collaboration with Tencent Cloud to launch "Tera Planet." This advanced platform has been upgraded to version 2.0 to improve energy security and renewable energy usage in customer's fuel mix.



Dr. Hin-Lap Yip

Associate Director, Hong Kong Institute for Clean Energy  
City University of Hong Kong



Hong Kong Institute for Clean Energy  
香港清潔能源研究員  
CityU is a public research university and innovation hub for research and professional education.

Smart energy plays a key role in promoting the transformation of the green economy. Application of photovoltaic systems and comprehensive energy efficiency management not only bring us sustainable and affordable energy solutions, but also provide solid support for achieving the country's "30-60" dual carbon goals and creating a sustainable society.

Our integrated energy solutions are already well established across the Chinese mainland, allowing our industrial and commercial customers to enjoy substantial cost savings. As at the end of 2023, the Group has invested in over 354 renewable energy projects. We also signed contracts with a total PV capacity of 2.96 GW, and connected more than 1.8 GW to the grid. By the end of 2023, we had developed 124 zero-carbon smart industrial parks providing integrated energy services.

Our dedication to low-carbon technology has led us to partner with industry leaders, in response to the growing demand for advancing the country's socio-economic development.

## Development of a Photovoltaic Power Station for a Steel Mill

Our mission at Towngas is to develop and deliver comprehensive integrated energy solutions that drive energy conservation, reduce carbon footprints, enhance cost-efficiency and performance, and promote sustainable growth. These solutions empower our customers to achieve their decarbonisation goals.

An example is the photovoltaic (PV) power station for a large-scale steel mill in Guangzhou, Guangdong province. Commissioned in 2023, this station is the largest distributed PV station in Guangdong province by individual capacity. With installed PV capacity of 29 MW, the power station is expected to generate 30 million kWh of green electricity annually.



## Pioneering a Virtual Plant in Shenzhen

The first virtual plant of a public institution in Shenzhen, the Futian District Party Committee Compound's virtual power plant, officially started operation in 2023. This virtual power plant provides PV power, energy storage, charging piles, Vehicle-to-Grid (V2G), central air conditioning system and other distributed energy resources. With 3.6 MW of aggregated load resources and an instantaneous adjustable capacity of 300 kW, the plant can balance supply and demand flexibly and effectively during peak usage periods via its digital system.



## Urban Waste Utilisation

The Group is fostering low-carbon development in cities and projects throughout the Chinese mainland by broadening our service portfolio to incorporate urban waste utilisation and organic waste treatment. In 2023, the Group processed 1.46 million tonnes of organic waste, an increase of 5% over the previous year.



Our urban organic waste resource utilisation project in Suzhou Industrial Park transforms food waste into valuable biomethane gas through advanced fermentation and purification processes. This not only demonstrates our ability to promote recycling and upcycling but also underscores our dedication to environmental responsibility.

The Group has also secured the bid for an integrated franchise project of municipal waste collection and disposal in Wujin district, Changzhou. This project includes a municipal solid waste incineration plant with a designed capacity of 1,500 tonnes per day.

## Utilisation of Biomass

Towngas' success with EcoCeres, Inc. since 2021 highlights the significant strides it has made in the field of sustainable energy. EcoCeres is an innovative platform that converts waste-based biomass into renewable fuels and products. These include sustainable aviation fuel (SAF), hydro-treated vegetable oil (HVO) and cellulosic ethanol. EcoCeres has positioned itself as a leading promoter of greener energy alternatives.

In 2023, EcoCeres achieved significant milestones. It produced over 100,000 tonnes SAF in Zhangjiagang, Jiangsu province and emerged as one of the world's leading SAF producers. The construction of the production facility in Johor, Malaysia, is in good progress and will increase the company's production capabilities for SAF and HVO by over 100%.



## Green Methanol

Our green investment in the methanol plant in the Inner Mongolia Autonomous Region yielded significant results, with the facility now producing green methanol from recycled end-of-life tyres. This first phase of upgrade completed in early 2023, and obtained certifications under International Sustainability and Carbon Certification (ISCC) EU and ISCC PLUS schemes, demonstrating that the products meet the European Union's requirements for sustainable biofuels and chemical products.

In October 2023, Towngas dispatched its inaugural shipment of green methanol. Responding to the robust demand within the maritime industry for low-carbon fuels, we are poised to expand our green methanol production capacity to 120,000 tonnes in 2025.



## Green and Sustainable Finance

Since 2017, Towngas has launched several green and sustainable financing mechanisms that provide funding for low-carbon projects and other ESG initiatives. The total amount of green and sustainable finance for the Group now exceeds HK\$5 billion.



### Green Bond

In 2017, Towngas became the first company in Hong Kong's energy utility sector to issue a green bond for financing its green initiatives. The bond proceeds have been fully allocated to green projects since 2017.

The [Towngas Green Bond Framework](#) serves as the guiding principle for all our green initiatives.

### ESG Loans

In 2021, we concluded ESG loans totalling HK\$2 billion, demonstrating the banks' support and trust in our commitment to ESG excellence. The loans referenced six ESG key performance indicators, including greenhouse gas emissions reduction, renewable energy generation, scrap metal recycling and safety, etc.

### Sustainability-linked Bond and Green Loan

In April 2022, Towngas Smart Energy issued a sustainability-linked bond — the first by an energy company in Hong Kong — that raised a total of US\$200 million. With this bond, we came one step closer to realising our vision of being a leading smart energy business based on integration, digitalisation and decarbonisation.

The Bond was issued with reference to the Sustainability-Linked Financing Framework and in accordance with the Sustainability-Linked Bond Principles and Sustainability-Linked Loan Principles. The proceeds from this sustainability-linked bond are being used to achieve Towngas Smart Energy's Sustainability Performance Targets (SPTs).

Also in 2023, Towngas Smart Energy arranged a 7-year green loan of RMB500 million for the development of its renewable energy business. The loan proceeds have been fully allocated to investments in photovoltaic systems for the generation of solar energy.

### Sustainability-linked Panda Bond

In June 2023 Towngas Smart Energy issued its first Panda Bond. Raising a total of RMB1.5 billion (of which RMB500 million is sustainability-linked), the bond is the first sustainability-linked Panda Bond issued by a Hong Kong-funded enterprise on the Chinese mainland. It was oversubscribed due to strong investor interest.

This bond issuance reflects Towngas' dedication to green initiatives and will play a significant role in the low-carbon transformation of our operations. By utilising sustainable finance and implementing environmentally friendly projects, Towngas is contributing to a greener future.

# Y+ **YOUNG-AT-HEART WITH RESILIENCE**

- **Health and Safety**
- **Employee Engagement**
- **Supply Chain Resilience**

Our strengths and resilience as a company are deeply rooted in our people and partners. Recognising the importance of transitioning to environmentally sustainable practices and societies, we strive to create an equitable and inclusive environment for all stakeholders.

We have implemented measures to safeguard our assets, protect people's health and safety, and improve our crisis management. To facilitate a smooth Just Transition, we have launched new strategic initiatives to shape our human resources models and introduced training programmes to help reskill and upskill our workforce. We also support our suppliers by proactively assisting them to accelerate their transformation towards a resilient supply chain.

## 2023 Performance Highlights

Gender pay ratio (basic salary): 1:1  
(Hong Kong)



1,190,700 regular safety inspections (RSIs)  
(Hong Kong)



Average training hours per employee: 92.3  
(Group)



Approximately 90% of suppliers<sup>1</sup> in our  
Hong Kong operation adopted the S-Carbon  
platform



Group Lost-time Injury Frequency Rate  
(accidents per 1,000,000 work-hours):

- \* Employees 0.43
- \* Contractors 0.32



No major incidents or chemical leakages at  
our chemical plants (Chinese mainland)



## Future Actions and Targets

Continue to enrich our talent development  
and training programmes, with ESG elements  
and new business know-how in preparation  
for business transformation



Set up a non-zero Lost Time Injury Frequency  
Rate target for health and safety



Create a sustainable talent pipeline by  
engaging the younger generation



Further develop, collect and evaluate leading  
and lagging process safety metrics at our  
chemical plants

## Management Approach

With a history going back more than 160 years, Towngas has a responsibility to provide safe and reliable gas-related services while also protecting the health and safety of our employees, stakeholders in the community and supply chain partners.

That tradition continues to this day. In our workplace, we place the highest priority on the health, safety and wellbeing of our employees, contractors, customers and the public, all of whom are covered under our [Health and Safety Policy](#).

In line with the principles of the Just Transition, we have become even more committed to providing a diverse and inclusive workplace. We also clearly communicate

the standards we expect of our employees, which are documented in our policies and guidelines. These include our [Employee Policy](#), [Anti-Discrimination Policy](#), [Code of Conduct](#) and [Human Rights Policy](#), as well as a [Security Policy](#) to protect employees and company assets from harm or loss while minimising potential security threats.

We further recognise the value of building long-term relationships with our business partners and suppliers. Through our [Towngas Purchasing Policy](#), we are helping our suppliers compete in a fair and impartial environment. We also require all our suppliers to comply with our ESG requirements as outlined in the [Code of Practice for Suppliers](#). On a continual basis, we monitor sustainability risks in our supply chain and work closely with suppliers to improve their ESG performance. To the greatest extent possible, we will make use of environmentally friendly products and services, as outlined in our [Sustainable Purchasing Policy](#).

For more information on our management approach and relevant policies, please refer to our [corporate website](#).



<sup>1</sup> Based on the total purchase value of products and materials (Hong Kong operations).

## Health and Safety

### Asset Integrity and Crisis Management

At Towngas we uphold a high standard of asset integrity and crisis management in our operations to ensure a safe, secure and efficient energy supply for stakeholders. Through proactive risk prevention, innovation and continual improvement, we are able to minimise health and safety hazards.

(Updated) Our infrastructure, equipment, and facilities are regularly maintained to keep them in optimal condition. One example of this is how we retrofitted the slam shut valves in some of our gas governors. With the slam shut valve, gas flow in the pipelines can be immediately cut off if the gas pressure is abnormal (both over-pressure and under-pressure), thereby improving the safety of our gas supply to customers and protecting the integrity of our infrastructure assets at downstream. In Hong Kong, we continued to replace the aging gas pipes and recondition corroded riser bases, further ensuring the safety and reliability of our supply system. In 2023 about 11.6 km of ageing metal pipes were replaced.

On the customer side, we have developed smart appliances, controllers and meters that take advantage of IoT technology to provide a range of advanced safety features. These include the ability to remotely control gas appliances and automatically cut off gas supply when abnormal usage or leaks are detected.

In 2023, we conducted a Group Crisis Management Exercise for our extended businesses and gas-related businesses in Hong Kong and on the Chinese mainland, with the aim of improving our management team's ability to handle emergency situations and prepare employees to handle real-life disasters. The exercise focused on cybersecurity and customer service emergencies. Through a simulated large-scale failure, we assessed employees' responses and tested the effectiveness of our emergency plans and measures in mitigating the impact on customers. This cross-business unit crisis management exercise strengthened our collaboration and communication capabilities and provided us with valuable insights on managing potential crises in future.

On the Chinese mainland, we utilise advanced technologies such as the Towngas Operation Platform — a platform we developed that integrates cutting-edge technologies such as the Internet of Things (IoT), big data analysis and artificial intelligence. As a result of this new intelligent asset management technology, operational safety has been greatly enhanced.

We also entered into a joint venture agreement with the China Special Equipment Inspection and Research Institute (CSEI) to integrate our quality and safety management systems with the professional talent, equipment and technology of CSEI. As a result of this integration, we now have a more comprehensive approach that allows us to manage and control our pipelines and gas facilities to the highest standards of quality and safety.

For more details on our pipeline management efforts, please refer to the [Preventing Methane Leaks with Advanced Technology](#) section of this report.



About **11.6 km** of ageing metal pipes were replaced

#### Actions taken to reduce risk:



Conducted **1,190,700** regular safety inspections for customers in Hong Kong



Conducted **236** internal HSE audits for project companies on the Chinese mainland



Performed **155,744** trench inspections at **9,340** active sites and surveyed **7,689** km of pipeline in Hong Kong

Our commitment to asset integrity and crisis management is evidenced in the downward trend of 292 customer-related emergency reports, and further substantiated by a 15% decrease in public-reported gas leakage incidents per 10 km of network compared with 2022, as well as a dramatic 50% reduction in incidents of third-party damage to underground pipes in 2023.

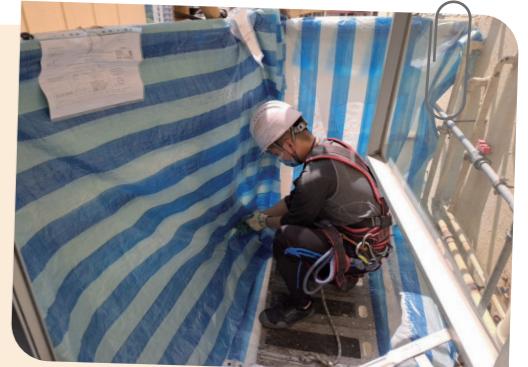
Towngas' rapid emergency response continued to achieve a world-class standard of promptness:

Emergency team's average arrival time

 Target: arrive on-site within **25** minutes  
2023 Results: within **21.3** minutes

### Managing the Risks of Scaffolding

Bamboo scaffolding is used for town gas pipe installation, maintenance and, occasionally, for inspections. While these temporary structures are necessary for carrying out construction work at elevated heights, they can also put our employees, contractors, the public and property at risk. To further strengthen and improve the occupational safety of workers engaged in bamboo scaffolding work, Towngas implemented a series of enhanced safety measures.



One of these is a dual protection mechanism. It involves the installation of multiple eyebolts and the use of Transportable Temporary Anchor Devices (TTADs) connected to double lanyards to help eliminate falling hazards. Additionally, all workers are required to use hand tools equipped with lanyards to prevent these tools from falling and injuring people underneath.

Another danger is extreme weather conditions, especially high winds. To protect workers, we have implemented measures that include dismantling truss-out bamboo scaffolding and securing other scaffolding before adverse weather events, especially super typhoons. During inclement weather, especially when tropical cyclone warning signal is in effect, outdoor work should be avoided. We will carry out thorough inspections and implement necessary safety measures prior to resuming work.

In 2023, we organised a three-week special inspection campaign on the erection, dismantling and use of scaffolding. We also requested all contractor scaffolders to attend additional training courses, in preparation for the upcoming requirements set by the Labour Department for workmen trained in the erection, addition, alteration and dismantling of truss-out bamboo scaffolds.

## Occupational Safety and Health

### Safety Performance

We create the safest possible working environment for our employees by assessing all major projects for health and safety and conducting regular audits after completion. Towngas and 52 of its project companies have obtained ISO 45001 Occupational Health and Safety certifications, demonstrating our firm commitment to safe work environments.

In Hong Kong, we participate in the International Safe Workplace Programme (ISWP) for the safety and health of workers.

On the Chinese mainland, we have established an internal Safety Responsibility System. Key performance indicators such as third-party damage and incident rates are reported to management on the Safety Committee on a regular basis. Risk audits are conducted at our project companies to ensure compliance.

In 2023, there was no work-related fatalities in Hong Kong and on the Chinese mainland among our employees and contractors.

In 2023, the main types of work-related injuries included slips, trips and falls on the same level. To prevent similar types of work-related injuries, we have organised a variety of safety programmes. For example, we established a special safety inspection task force for high-risk operations, organised contractor safety sessions and provided online training and webinars to highlight the lessons learnt from past incidents.

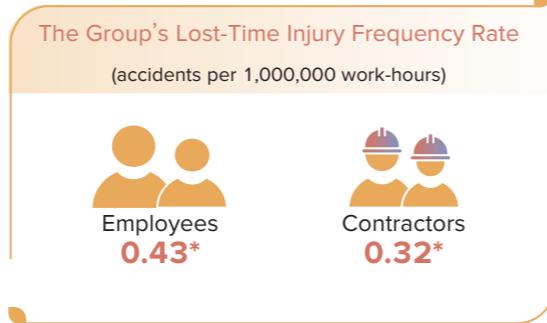
### Safety Promotion

Towngas regularly organises initiatives to promote safety awareness among our employees and contractors.

During the year, we arranged a visit for our employees to the Safety Experience Training Centre (SETC) of the Hong Kong Institute of Construction, where they underwent simulated accident scenarios using virtual reality (VR). Topics covered included work-at-height, lifting operations, electrical operations, proper usage of personal protective equipment and other common safety practices. Apart from the visit, we arranged VR safety trainings at our North Point Headquarters building for our employees and contractors.

We also held an Occupational Safety and Health Seminar for contractors to raise awareness of occupational health and safety, including gas safety, with the aim of preventing accidents and health issues before they arise.

In addition, we organised the Safety Equipment and Tools Exhibition at our North Point Headquarters building. Employees and contractors had the opportunity to explore advances in cordless, dust-proof, noise-reducing and ergonomically designed handheld power tools. The exhibition also highlighted a range of safety equipment and SME funding programmes.



\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

On the Chinese mainland, we held the 2023 Safety Culture Promotion Workshop in Changzhou, Jiangsu province. This workshop attracted around 150 physical attendees and over 1,500 online participants from approximately 130 project companies. We also developed a training course on working in confined spaces as well as a course for High and Medium Pressure Gas System Maintenance Operators that included both theory and practical training. Our goal with these courses is to achieve 100% certification for all personnel working in confined spaces by the end of 2024 and all High and Medium Pressure Maintenance Operators by the end of 2025.



### Safety Training Hours



### Enhancing Employee Wellbeing

For the health of our employees and their immediate families, we have launched a variety of ongoing programmes. These include group medical insurance, voluntary dental plans, subsidised seasonal influenza vaccinations and in-house clinical services, among others. Additionally, we grant extra paid leave to qualified employees who need to care for family members with serious illnesses.

In response to the growing incidence of vision problems among young people, Towngas collaborated with PolyVision Eyecare Centre to organise the Healthy Workplace for Healthy Eyes workshop. We also place a strong emphasis on the mental well-being of our employees and will organise various outdoor activities to promote healthy lifestyles. These activities include water park outings, dragon boat races and a fencing experience day, which not only provide enjoyment and relaxation but also foster team spirit among employees.

Furthermore, we hosted a Health and Safety Expo that featured a seminar, occupational health check-ups and interactive mini-games to raise employees' awareness of health and safety. In future, we plan to continue offering similar activities for the wellbeing of our employees.

We share the principles of justice, fairness and social acceptance as stated in the International Labour Organisation's advocacy of a Just Transition. To encourage the development of a workplace culture that is supportive, fair and inclusive, Towngas is ensuring that no one is left behind as we embark on this transformative journey.



## Employee Engagement

### Attracting and Retaining Employees

As a caring employer, we offer flexible working opportunities such as part-time work, work-from-home and flexible hours to help employees achieve work-life balance. We also provide maternity and paternity benefits that exceed Hong Kong's Employment Ordinance requirement and time-off for employees to attend their children's school educational events, among other benefits.



### Developing a Sustainable Talent Pipeline

During the year, Towngas continued to fulfil its commitment to develop a sustainable talent pipeline. Our proactive approach allows employees to gain practical knowledge and skills while learning about our operations.



### Nurturing the Next Generation

In order to develop the industry leaders of tomorrow, we have developed the Career in a Nutshell programme. In the 2023/24 academic year, 89 students participated in this programme that gives them exposure to the gas industry and career-related activities.

As part of our ongoing efforts to nurture young talents, we supported the Scheme on Corporate Summer Internship on the Mainland and Overseas initiated by the HKSAR Government. Nine tertiary students were recruited for the 2023 summer session, during which they underwent an eight-week internship in Shenzhen or Suzhou. The internship not only provided the students valuable working experience, but also gave them the chance to appreciate the living culture of our home country and build a solid foundation for their future career development. To date, we have provided internship opportunities and training to nearly 60 students.

Additionally, we have provided a hydroponic farm with a self-developed IoT control system to schools at no cost, enabling students to gain valuable STEM knowledge through the practice of smart farming.



### Internal Training Programme

We prepare our employees for our business needs today while building a resilient workforce ready to take on the challenges of a sustainable, low-carbon future.

In 2023, we continued to offer our Corporate Management Trainee (MT) Programme and introduced a new training initiative designed to bring together MTs from Hong Kong and the Chinese mainland. This not only facilitates better communication between our Hong Kong and Chinese mainland colleagues, but also allows for more flexible deployment across positions. During the year, 17 new MTs joined the programme.

The Towngas Leadership Competencies Acceleration Programme (TLC+) and Young TLC+ were launched in 2008 and 2017 respectively to establish an adequate supply of future leaders. During the 18-month programme, members participated in a series of training programmes, mentoring, action learning projects and company visits to accelerate their development. As at 2023, 2.5% of our employees in Hong Kong had completed the programmes with a promotion rate of over 80% after completion. In late 2023, we launched two new development programmes: one for senior managerial employees and one for junior managerial employees.

To address the declining interest in technical careers among young people, Towngas continued the Technician Trainee Programme (TTP) and established the Towngas Training Institute (TTI) as part of our long-term succession planning for gas technicians. A total of 35 Technician Trainees were recruited during the year.

In addition, we are addressing the shortage of frontline technicians and the need to integrate our business in Hong Kong and Chinese mainland operations. This is being achieved through a pilot programme that is paving the way for the movement of technical and skilled talent across the regions. To date, it has provided training in Hong Kong for 40 frontline technicians from the Chinese mainland. We also sent one trainer from the TTI and five experienced maintenance technicians specialised in PE pipe welding to the Chinese mainland to acquire the national qualification on residential installation, maintenance and emergency work. All underwent official testing and successfully obtained qualifications as gas technicians working in operational maintenance and repair on the Chinese mainland.

We established a total of nine accredited training organisations to provide training that meets our technical requirements, with a plan to extend that to 12 organisations covering multiple regions of the Chinese mainland.

### External Training and Development

We collaborate with external partners to offer employees subsidised training courses for their personal and professional development. These courses enable them to acquire new skills, stay with industry trends and fill knowledge gaps or competency needs. In 2023, we developed a global vision for various levels of employees to further enhance their understanding of national and local policies. Additionally, we invited prestigious speakers to conduct a series of seminars on relevant topics, which were attended by 276 employees from various levels.

Gas engineering courses are offered in collaboration with universities in Hong Kong, such as City University of Hong Kong and The University of Hong Kong. During the year, 17 students were enrolled in these courses. In 2018, we launched the first Professional Diploma in Gas Engineering programme in collaboration with VTC to provide theoretical and practical training that prepares young people for a career in the gas industry. A total of 31 students are currently enrolled in this programme, including 22 from Towngas.

The renovated NewGen Programme under a new partnership was completed in 2023. Ten young employees from Towngas joined the 10-month training programme together with 27 other participants from three companies: McDonald's Hong Kong, AXA Hong Kong and MTR Corporation. The programme featured workshops, management sharing sessions, site visits, and action learning projects, where participants had the opportunity to share their knowledge and experiences with one another.



The renovated NewGen Programme with new partnership was completed in **2023**

# Strategic Approach to Workforce Transformation

We recognise that decarbonisation is shaping the future of our industry and having an impact on both Towngas and our employees. In response, we have implemented new strategic initiatives designed to enhance our adaptability and meet evolving needs. To ensure our workforce is well prepared to navigate this transition and thrive in the changing landscape, we have established the following three initiatives.



Ms Titania Woo  
Executive Director  
The Hong Kong Management Association



HKMA is a non-profit-making organisation with a vision to be the leading professional organisation advancing management excellence in Hong Kong and the region.

In response to the global shift towards sustainability, companies must proactively reshape their workforce strategy. An integral aspect of this strategy involves enhancing the knowledge and skillsets of their employees, thereby cultivating a future-ready workforce. By prioritising workforce development, companies not only contribute to their own growth but also to the overall human capital development of Hong Kong and the region.

## Shaping Human Resources Models for the Future



During the year, we set up the Human Resources Management Committee, comprising the Group's Executive Committee members and representatives from each business unit, to prepare ourselves for the green transition that is underway. This committee has the responsibility of developing the Group's human resources development plans, strategies and policies from the top down, in line with our corporate direction of creating a sustainable world driven by clean energy.

We also established a new Corporate Human Resources Mainland Businesses Office on the Chinese mainland to capitalise on the synergy that exists among our various business segments. It will ensure that the Groups' resources are appropriately allocated to create an efficient, high-quality motivated team ready to take on the challenges of the evolving business environment while minimising the impacts of labour market transitions. Through this initiative, we believe we can develop a skilled workforce that contributes meaningfully to our sustainability goals.

## Keeping Employees Informed and Engaged



Our Strategy Ambassador Club keeps our employees fully informed about the future plans of the Company and our strategic direction, while also gathering their feedback. Over 80 employee representatives of the Club from across Towngas, including frontline employees and managers, meet regularly in seminars, workshops and on business tours to keep our workforce current on business developments and new opportunities for the Group.

During the year, we organised management sharing sessions to promote Towngas' new Vision, Mission and Core Values as well as business briefings on digitalisation, innovation and our water and environmental businesses. We also provided opportunities for employees to participate in senior management meetings. This has helped to strengthen two-way communication so that everyone is kept informed and involved in the Company's energy transition and business restructuring.

In addition, we established the Sustainable Green Energy Hub in December 2023. Staffed by a dynamic team of young professionals, this new office tracks the latest new energy developments and keeps our employees informed and engaged. The Hub focuses on research in green energy businesses and development strategies, expansion of political and business network, project planning and implementation, business operations, and energy services. We believe that by staying informed and engaged, our employees can make significant contributions to our mission of providing sustainable energy solutions.

## Reskilling and Upskilling for a Low-Carbon Transition



Reskilling and upskilling our workforce is essential for successfully navigating the Group's low-carbon transition. With a focus on addressing potential skills gaps, we are prioritising the growth and development of our employees through tailored job opportunities and comprehensive training programmes that allow them to adapt to the evolving energy sector. Specific emphasis is placed on areas such as renewables, energy efficiency and circular economy.

In 2023, we organised numerous seminars and visits on hydrogen development, renewable energy and energy storage in Hong Kong. We ensured that our workforce remains well-prepared and up-to-date on the latest advances and challenges in the field of sustainable energy.

In line with the country's "30-60" dual carbon goals, Towngas is developing low-carbon businesses and training employees in preparation for a new era of clean energy. We also encourage colleagues from other business sectors to join our renewable energy business, while helping gas employees gain a deeper understanding of this business. Topics covered in the training include the zero-carbon smart industrial parks and the latest standards in rooftop distributed photovoltaic projects.

In addition, we organised seminars to share our experiences in the development of zero-carbon smart industrial parks as well as cross business segments projects. For involved employees, we provide attractive compensation, benefits and incentive plans. They also have the opportunity to gain practical experience in renewable energy and learn skills required for the development of the new energy market.

Our ultimate goal is to ensure our employees have the skills needed to grow professionally and remain competitive in today's new energy market. This will not only contribute to the company's long-term development but also the promotion of a green economy.



## Promoting Diversity and Inclusion

We have a strong commitment to fostering diversity and inclusion within our company, ensuring support for everyone. Our efforts are focused on empowering women through recruitment, development, and retention initiatives. We also provide amenities such as lactation facilities and flexible work options for working mothers.



**Hiring more women:**  
28%\* of managerial employees were female (Hong Kong)



**Gender pay ratio (basic salary):**  
1:1 (Hong Kong)



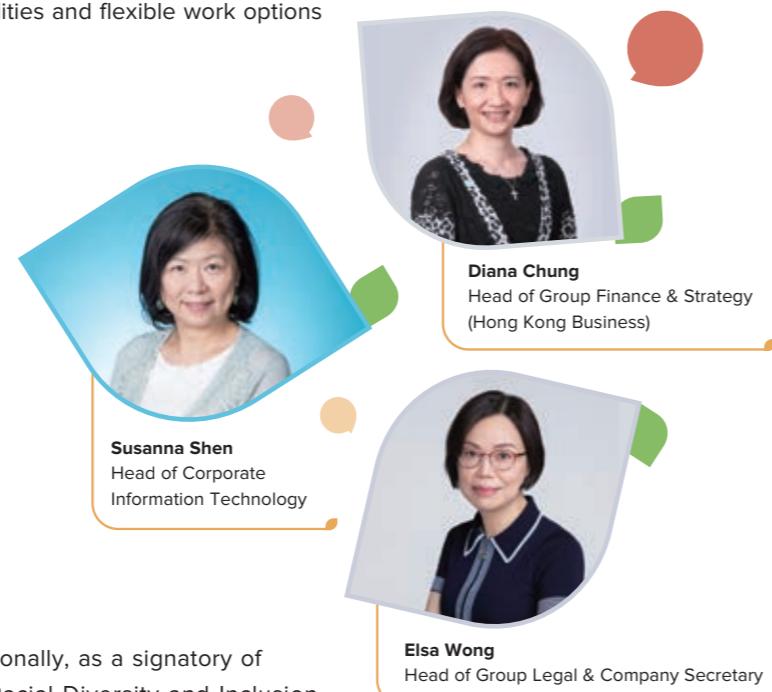
**Gender ratio (male: female):**  
3.5:1 (Hong Kong)  
2.3:1 (Outside Hong Kong)



Non-local Employees<sup>1</sup> 18



Disabled Employees 12



Additionally, as a signatory of The Racial Diversity and Inclusion Charter for Employers by the Equal Opportunity Commission (EOC) in Hong Kong, we have pledged to promote racial diversity by hiring employees from diverse ethnicities. To create an inclusive workplace, we offer barrier-free facilities and a buddy system to assist employees with disabilities. What's more, we offer job opportunities to retirees and individuals from underprivileged groups.



### Towngas Diversity & Inclusion Day

During the year, we furthered our commitment to be an inclusive and diverse workplace with the launch of our first Towngas Diversity & Inclusion Day at our North Point Headquarters building. This initiative was designed not only to celebrate diversity and inclusion within our organisation, but also to promote empathy and understanding in a diverse and increasingly interconnected world. To host this event, we partnered with Dialogue in the Dark, a renowned social enterprise. Activities were led by People of Difference (Pods), a team of trainers with various disabilities such as visual impairment, hearing loss and mobility challenges.

The highlight of the event was an immersive experience, during which participants were guided through a series of activities in complete darkness to emulate the everyday challenges faced by those with visual impairments.

More than 400 visits were recorded for this event – a significant demonstration of our employees' willingness to understand and embrace diversity. The insights gained from the experience strengthened our commitment to create a supportive and inclusive work environment for all.

\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

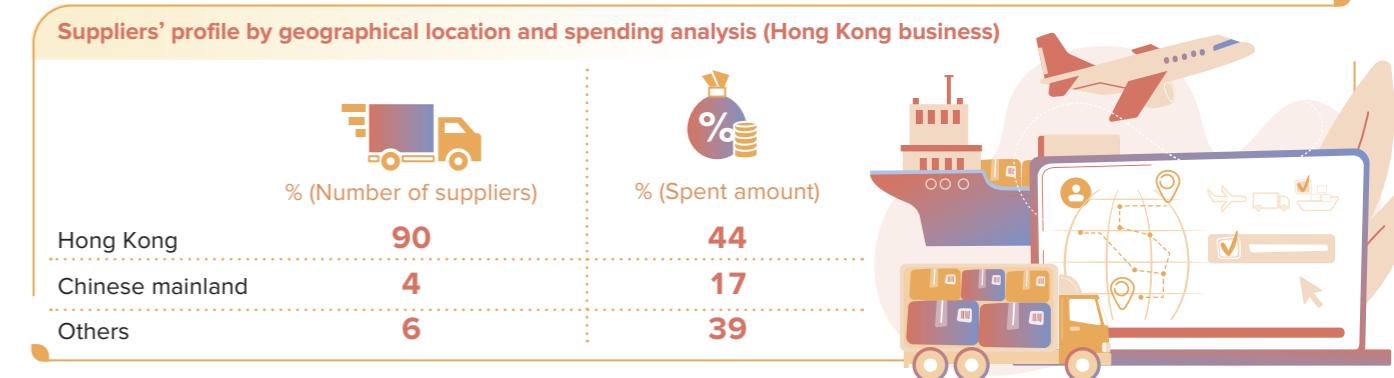
<sup>1</sup> Including employees from the Philippines and Pakistan.

## Supply Chain Resilience

Appropriate supply chain management allows us to identify and manage risks and to make good use of opportunities for collaboration and shared value creation with our suppliers.

### Supply Chain Management

Our major procurement categories include natural gas, naphtha, gas appliances, piping and fittings.



### Sustainable Procurement

We have been working closely with our suppliers to enhance their environmental and social performance through sustainable procurement strategies. To achieve this objective, we have been promoting innovation, environmental protection and product standardisation in our procurement processes. In 2023, we developed a new Green Specification to promote the procurement of environmentally friendly products. To date, 45 products/services have been included.

A key initiative in this regard is the Towngas Smart Energy Approved Supplier-Best Creative Award. Through this programme, we are inspiring our business partners to innovate in areas such as product design, materials selection and processes, while emphasising the importance of environmental protection and social responsibility. We believe that rewarding suppliers who produce creative ideas with practical applications will encourage the development of cost-effective and environmentally friendly products. In 2023, we received 28 innovative projects as entries in the Creative Award competition. As part of our commitment, we will purchase the sustainable products that come out of this competition.

### Reduction of Domestic Appliance Packaging

To satisfy the growing demand for sustainable packaging, we proactively engaged suppliers to develop the Towngas Domestic Appliance Packaging Guideline.

Our standardised packaging designs allow for better control over the amount of packaging materials and avoid excessive packaging, lower packaging costs and minimise unnecessary consumption of resources. Standardised packaging sizes also ensure uniformity across different products, simplifying stacking and storage processes. This enhances storage space utilisation, optimises logistics efficiency and reduces the possibility of damage during transportation.

Over the next three years, our goal is to replace 40% of our packaging with the latest packaging designs in accordance with the Guideline, introduce more environmentally friendly materials, and design multi-function packaging to further reduce the use of packaging materials. Adherence to these guidelines is mandatory for all new products, and Towngas will perform regular performance checks and provide reminders for suppliers.



# Embedding the Just Transition in our Supply Chain

In August 2023, the UN Global Compact released a new publication, *Just Transition in Supply Chains*, offering recommendations to enhance supply chain sustainability and resilience. Companies that recognise climate-related risks must encourage partners to adopt impactful policies and practices.

At Towngas, we are working towards the Just Transition and prioritising transparency and risk management. We are also engaging suppliers to understand climate and social risks, addressing negative externalities and embracing the principles of the Just Transition, such as stakeholder dialogue, worker skills development, human rights and ESG Due Diligence, to strengthen our transition planning and climate risk management efforts.



## Critical Supplier Identification

An important first step in supply chain management is to identify critical suppliers with higher impacts and greater business relevance on which to focus on improving resources.

### Critical Tier 1 Suppliers

Definition	Total Spent <sup>1</sup>	Number
Hong Kong  Non-substitutable suppliers and/or annual purchasing cost over HK\$5 million	96%	22*

22 critical tier 1 suppliers have been identified in our Hong Kong operation, mainly comprising suppliers of gas production raw materials, gas appliances, pipeline related components and gas meters. Providers of non-substitutable materials and products to our tier 1 critical suppliers are classified as critical non-tier 1 suppliers, of which two have been identified.

## Sustainability Risk Assessment

We have implemented a formal sustainability risk identification process to evaluate critical tier 1 suppliers and identify those with high sustainability risks. In 2023, a total of 33 tier 1 suppliers were assessed via self-assessment surveys and/or site visits. 13 were classified as having potential high sustainability risks in our Hong Kong operation.



<b>100%<sup>1</sup></b>	<ul style="list-style-type: none"> <li>Acknowledged the <i>Code of Practice for Suppliers</i> and the <i>Sustainable Purchasing Policy</i> (new suppliers)</li> <li>Environmental and social criteria were used as one of the factors to screen new suppliers</li> </ul>
<b>&gt;40%<sup>1</sup></b>	Accredited to the ISO 14064 Standard

\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

<sup>1</sup> Based on the total purchase value of products and materials (Hong Kong operations).



Ms. Miranda Kwan  
Director, Business Assurance  
SGS Hong Kong Limited



SGS HK is a testing, inspection and certification company that delivers one-stop solutions tailored for the whole supply chain.

Climate change can impact supply chains and pose huge business risks. Integration of ESG factors into supply chain strategy and proactive management of business partners could create a more resilient supply chain, thereby mitigating risks and creating value.

## Supplier Development

Through the Sustainability Risk Assessment, ESG performance gaps were identified and recommendations communicated with suppliers to enhance their performance. As climate change is one of the key assessment criteria, we understand that we must collaborate with supply chain partners who might otherwise be left behind and help them seize business opportunities associated with mitigating the impacts of climate change.

### Quantification of GHG Emissions

Towngas is the first public utility in Asia to adopt the S-Carbon platform to improve supply chain transparency. In 2023, we engaged approximately 90%\* of product and raw material suppliers (in terms of purchase value) in our Hong Kong operation to quantify greenhouse gas (GHG) emissions. This not only helps us enhance GHG (scope 3) emissions data but also raises supplier awareness of ESG issues such as climate change and GHG emissions reduction. It also encourages the entire industry chain to move towards sustainable development. Our suppliers have received information and/or training in data collection and quantification to ensure their competence in this area.



### Transition Risk Assessment

In the International Energy Agency (IEA)'s *World Energy Outlook 2022*, IEA proposed 10 guidelines to buttress energy security in the mid-transition phase. It states that "global energy security cannot be achieved without everyone on board" and that it is essential to "ensure diverse and resilient clean energy supply chains".

We worked with our suppliers in the mainland utility businesses to assess and identify transition risks associated with their businesses. We also reviewed how policy changes, technological developments, reputational impacts and shifts in market preferences could impact them. Our goal was to strengthen the climate resilience of our supply chain, thereby further reducing potential financial implications.



### Supplier ESG Training

We have adopted a more dialogue-based approach in our relationships with critical suppliers and are working with them to raise their awareness of the environmental and social impacts of their operations. We also highlight policies and practices that are instrumental in addressing these issues, via seminars and workshops, among other channels.

In the past three years, we conducted over 1,100 online training sessions for suppliers. During the year, we also organised ESG training with representatives from 29 critical suppliers in the mainland utility businesses. The training covered basic ESG concepts and the importance of ESG in innovation, risk mitigation, investment and reputation, as well as our current practices to promote ESG in our supply chain.

We also encouraged the adoption of the S-Carbon platform and proposed specific action plans to help suppliers obtain ISO14064 certification. Additionally, we brought in external experts who discussed the latest trends, policies and regulations on quantifying and reducing GHG emissions. One of our suppliers, Meide Group, also shared information on their carbon reduction methods, including the implementation of energy efficiency revamping projects and utilisation of renewable energy.



\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

# KEY STATISTICS

This section presents an overview of the 2023 key performance data (KPIs) of the Group, with a focus on economic, employee, environmental, safety and social aspects. The scope of disclosures covers Towngas and its subsidiaries, unless otherwise stated.

## Economic Performance

The scope of disclosures aligns with Towngas' financial reporting. More information is available in the *Towngas Annual Report 2023*.

	Unit	2023	2022	2021	2020	2019
<b>Operation</b>						
Customers (Town gas business)	Million	<b>2.02</b>	2.00	1.96	1.94	1.93
Customers (City-gas business)	Million	<b>40.2</b>	37.3	35.0	31.8	29.8
Customers (Water business)	Million	<b>2.93</b>	2.77	2.62	2.53	2.38
Town gas sales (Hong Kong)	Million MJ	<b>27,125</b>	27,398	27,677	27,947	28,712
Gas sales (Chinese mainland)	Billion m <sup>3</sup>	<b>34.7</b>	32.1	31.1	26.9	25.6
Water sales (Chinese mainland)	Million tonnes	<b>1,041</b>	1,027	994	917	926
<b>Financial</b>						
Revenue	HK\$ million	<b>56,971</b>	60,953	53,564	40,927	40,628
Manpower costs	HK\$ million	<b>3,879</b>	3,741	3,624	3,284	3,485
Capital expenditure	HK\$ million	<b>8,428</b>	8,321	8,387	7,295	7,053
Taxation	HK\$ million	<b>2,003</b>	1,859	2,155	1,713	2,290
Dividends	HK\$ million	<b>6,531</b>	6,531	6,531	6,220	5,924
Profit attributable to shareholders	HK\$ million	<b>6,070</b>	5,248	5,017	6,007	6,966

## Hong Kong Employees

	Unit	2023	2022	2021	2020	2019
<b>Total</b>						
Full-time	Number	<b>2,402*</b>	2,352	2,442	2,495	2,474
Part-time	Number	<b>144</b>	156	113	140	118
Permanent	Number	<b>2,274</b>	2,226	—	—	—
Contract	Number	<b>128</b>	126	—	—	—
<b>By gender</b>						
Male	Number	<b>1,865*</b>	1,854	1,900	1,950	1,943
Female	Number	<b>537*</b>	498	542	545	531
<b>By age group</b>						
≤35	Number	<b>657*</b>	618	607	612	583
36-55	Number	<b>1,082*</b>	1,081	1,141	1,230	1,273
≥56	Number	<b>663*</b>	653	694	653	618

	Unit	2023	2022	2021	2020	2019
<b>By employee category</b>						
Managerial employee	Number	<b>293*</b>	267	271	267	265
Supervisory employee	Number	<b>912*</b>	898	901	918	925
General employee	Number	<b>1,197*</b>	1,187	1,270	1,310	1,285
<b>Voluntary Turnover (number and rate)<sup>1)</sup></b>						
Total	Number (%)	<b>255 (10.7)</b>	263 (11.0)	(8.9)	(5.0)	(5.7)
<b>By gender</b>						
Male	Number (%)	<b>185 (9.9)</b>	177 (9.4)	(7.7)	(4.2)	(4.6)
Female	Number (%)	<b>70 (13.5)</b>	86 (16.5)	(13.1)	(7.6)	(9.8)
<b>By age group</b>						
≤35	Number (%)	<b>118 (18.5)</b>	124 (20.2)	(16.4)	(8.2)	(11.2)
36-55	Number (%)	<b>101 (9.3)</b>	104 (9.4)	(8.1)	(3.4)	(4.3)
≥56	Number (%)	<b>36 (5.5)</b>	35 (5.2)	(3.4)	(5.0)	(3.7)
<b>New Recruitment (number and rate)<sup>2)</sup></b>						
Total	Number (%)	<b>340 (14.3)</b>	324 (13.5)	235	203	250
<b>By gender</b>						
Male	Number (%)	<b>232 (12.5)</b>	239 (12.7)	158	141	173
Female	Number (%)	<b>108 (20.9)</b>	85 (16.3)	77	62	77
<b>By age group</b>						
≤35	Number (%)	<b>193 (30.3)</b>	197 (32.2)	152	122	153
36-55	Number (%)	<b>128 (11.8)</b>	109 (9.8)	64	58	79
≥56	Number (%)	<b>19 (2.9)</b>	18 (2.7)	19	23	18
<b>Performance and career reviews</b>						
Total percentage	%	<b>81.3</b>	82.0	83.5	84.6	82.8
<b>By gender</b>						
Male	%	<b>82.8</b>	83.1	85.1	85.9	83.9
Female	%	<b>75.8</b>	78.1	78.2	80.0	78.9
<b>By employee category</b>						
Managerial employee	%	<b>78.5</b>	77.5	81.9	83.1	79.6
Supervisory employee	%	<b>85.2</b>	86.5	90.7	91.4	89.4
General employee	%	<b>78.9</b>	79.6	78.8	80.2	78.7
<b>Training</b>						
Total	Hours	<b>56,550</b>	52,759	62,216	51,865	65,679
Average (per employee)	Hours	<b>23.5</b>	22.4	21.6	17.5	22.4
Anti-corruption	Hours	<b>226</b>	1,101	162	156	4,649
<b>By gender (average training hours and percentage of employees who received training)</b>						
Male	Hours (%)	<b>25.7 (88.5)</b>	25.2 (95.5)	24.3 (78.6)	19.1 (63.4)	25.6 (93.7)
Female	Hours (%)	<b>16.1 (83.6)</b>	12.2 (94.4)	13.5 (68.2)	12.4 (58.0)	12.3 (87.1)

	Unit	2023	2022	2021	2020	2019
<b>By employee category (average training hours and percentage of employees who received training)</b>						
Managerial employee	Hours (%)	<b>14.2 (91.8)</b>	12.1 (92.1)	11.2 (79.6)	7.4 (73.5)	9.8 (85.0)
Supervisory employee	Hours (%)	<b>13.3 (86.4)</b>	9.9 (95.7)	12.5 (81.6)	8.3 (70.4)	13.7 (96.8)
General employee	Hours (%)	<b>33.6 (87.1)</b>	34.2 (95.7)	29.7 (71.8)	25.3 (54.6)	30.5 (90.7)
<b>Diversity (ratio of male to female)</b>						
Managerial employee	Ratio	<b>2.6:1</b>	2.9:1	2.9:1	3.1:1	3.3:1
Supervisory employee	Ratio	<b>2.7:1</b>	2.9:1	2.9:1	3.0:1	3.1:1
General employee	Ratio	<b>4.7:1</b>	4.9:1	4.3:1	4.2:1	4.3:1
Managerial employee – revenue-generating functions	Ratio	<b>2.3:1</b>	2.5:1	–	–	–
<b>Gender pay ratio (male to female)</b>						
Total – Base Salary	Ratio	<b>1.0:1*</b>	1.0:1	–	–	–
<b>By employee category – base salary</b>						
Managerial employee	Ratio	<b>1.1:1</b>	1.1:1	–	–	–
Supervisory employee	Ratio	<b>1.1:1</b>	1.2:1	–	–	–
General employee	Ratio	<b>1.0:1</b>	1.0:1	–	–	–
<b>By employee category – remuneration</b>						
Managerial employee	Ratio	<b>1.1:1</b>	1.1:1	–	–	–
Supervisory employee	Ratio	<b>1.1:1</b>	1.2:1	–	–	–
General employee	Ratio	<b>1.1:1</b>	1.1:1	–	–	–
<b>Parental leave</b>						
<b>Number of employees that were entitled to parental leave</b>						
Male	Number	<b>21</b>	20	–	–	–
Female	Number	<b>4</b>	8	–	–	–
<b>Number of employees took parental leave</b>						
Male	Number	<b>21</b>	20	–	–	–
Female	Number	<b>4</b>	8	–	–	–
<b>Number of employees returned to work in the reporting year after parental leave ended</b>						
Male	Number	<b>21</b>	19	–	–	–
Female	Number	<b>3</b>	7	–	–	–
<b>Return to work rate</b>						
Male	%	<b>100</b>	95	–	–	–
Female	%	<b>75</b>	88	–	–	–

## Notes:

\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

1) Starting from 2022, both "Number of Voluntary Turnover" and "Voluntary Turnover Rate" are disclosed. Numbers prior to 2022 are previously reported as "Turnover Rate".

2) Starting from 2022, both "Number of New Recruitment" and "New Recruitment Rate" are disclosed. Numbers prior to 2022 are previously reported as "Number of New Recruitment".

**Safety**

	Unit	2023	2022	2021	2020	2019
<b>Employees</b>						
Recordable work-related injuries <sup>1)</sup>	Number (per 1,000,000 work-hours)	<b>14 (2.8)</b>	19 (4.0)	15 (2.2)	21 (3.2)	12 (1.8)
Lost days due to work injuries <sup>2)</sup>	Number of work-days	<b>845</b>	657	1,013	386	244
High-consequence work-related injuries	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0 (0)	–	–	–
Recordable work-related ill health <sup>3)</sup>	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0 (0)	0 (0)	0 (0)	0 (0)
Fatalities <sup>4)</sup>	Number (per 1,000,000 work-hours)	<b>0* (0)</b>	0 (0)	0 (0)	0 (0)	0 (0)
<b>Contractors</b>						
Recordable work-related injuries <sup>1)</sup>	Number (per 1,000,000 work-hours)	<b>7 (1.7)</b>	5 (1.3)	5 (1.2)	11 (2.5)	6 (1.4)
Lost days due to work injuries	Number of work-days	<b>201</b>	103	–	–	–
High-consequence work-related injuries	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0 (0)	–	–	–
Recordable work-related ill health	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0 (0)	–	–	–
Fatalities <sup>4)</sup>	Number (per 1,000,000 work-hours)	<b>0* (0)</b>	0 (0)	0 (0)	0 (0)	0 (0)

## Notes:

\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

1) Starting from 2022, "Recordable work-related injuries" replaces "Accident – all industrial injuries" to include traffic accidents. Numbers and rates prior to 2022 are referred to as "Accident – all industrial injuries" and "Accident frequency rate".

2) Starting from 2022, "Lost days due to work injuries" replaces "Industrial injury man-days lost". Numbers prior to 2022 are referred to as "Industrial injury man-days lost".

3) Starting from 2022, "Recordable work-related ill health" replaces "Occupational diseases". Numbers prior to 2022 are referred to as numbers for "Occupational diseases".

4) Refers to the number of fatalities as a result of work-related injury.

**Social**

	Unit	2023	2022	2021	2020	2019
<b>Customer service</b>						
Customer compliments <sup>1)</sup>	Number	<b>5,552</b>	5,932	6,170	5,814	5,924
Customer complaints <sup>1)</sup>	Number	<b>1</b>	3	13	7	12
<b>Community involvement</b>						
Charitable donations <sup>2)</sup>	HK\$ million	<b>4.1</b>	8.6	3.0	7.9	7.2
Employees participating in voluntary services	Number	<b>695</b>	711	768	785	799
Voluntary service hours <sup>3)</sup>	Hours	<b>14,487</b>	9,329	14,122	16,633	87,557
Beneficiaries	Number	<b>547,833</b>	385,773	299,828	347,526	593,131

## Notes:

1) Includes compliments and complaints with written records.

2) Includes charitable donations from the Group.

3) Includes service hours from Towngas Volunteer Service Team and Towngas Customer Volunteer Team.

## Environmental

	Unit	2023	2022	2021	2020	2019
<b>Energy consumption<sup>1)</sup></b>						
Electricity	GJ	<b>394,483*</b>	338,941	353,681	477,749	464,158
Naphtha	GJ	<b>656,650*</b>	663,241	671,774	665,811	720,641
Natural gas	GJ	<b>4,620,309*</b>	4,910,984	5,219,173	5,178,927	5,383,668
Synthetic natural gas and landfill gas	GJ	<b>385,042*</b>	210,836	135,146	124,985	42,038
Town gas	GJ	<b>239,500*</b>	222,818	212,420	225,531	212,005
Diesel	GJ	<b>13,202*</b>	17,193	19,494	18,527	19,906
Unleaded petrol	GJ	<b>7,062*</b>	7,032	8,587	9,071	10,664
Total energy consumption	GJ	<b>6,316,248*</b>	6,371,045	6,620,275	6,700,601	6,853,080
<b>Packaging material use</b>						
Carton	Tonnes	<b>820</b>	920	916	842	946
Wood	Tonnes	<b>17.3</b>	14.7	15.9	15.5	17.7
Plastic	Tonnes	<b>1.26</b>	1.27	1.38	1.41	0.88
<b>Emissions</b>						
Nitrogen oxides (NO <sub>x</sub> )	Kg (Kg per million MJ of town gas)	<b>98,040</b> (3.6)	112,388 (4.1)	107,675 (4.0)	108,770 (4.0)	112,420 (4.0)
Sulphur oxides (SO <sub>x</sub> )	Kg (Kg per million MJ of town gas)	<b>508</b> (0.02)	499 (0.02)	402 (0.02)	365 (0.01)	365 (0.01)
Total greenhouse gases <sup>2)</sup>	Tonnes CO <sub>2</sub> e	<b>310,016*</b>	329,052	339,068	344,549	357,060
<b>Water consumption/discharge<sup>3)</sup></b>						
Water withdrawal – from municipal water supplies	m <sup>3</sup> (m <sup>3</sup> per million MJ of town gas)	<b>934,286</b> (34.4)	960,505 (35.1)	992,022 (35.8)	982,034 (35.9)	995,239 (35.3)
Wastewater discharged – total	m <sup>3</sup> (m <sup>3</sup> per million MJ of town gas)	<b>120,449</b> (4.44)	126,809 (4.63)	100,412 (3.60)	98,550 (3.50)	111,690 (3.90)
Wastewater discharged – to marine water bodies (treated)	m <sup>3</sup>	<b>33,616</b>	28,184	13,870	13,505	16,425
Wastewater discharged – to sewage	m <sup>3</sup>	<b>86,833</b>	98,625	86,505	84,680	95,265
<b>Waste management</b>						
<b>Non-hazardous waste</b>						
Non-hazardous waste landfilled <sup>4)</sup>	Tonnes	<b>146.8</b>	144.1	160.3	169.0	179.4
Non-hazardous waste recycled <sup>5)</sup>	Tonnes	<b>105.7</b>	143.8	154.6	135.4	179.5
<b>Hazardous waste<sup>6)</sup></b>						
Chemical waste generated (process related)	Kg (Kg per million MJ of town gas)	<b>14,147</b> (0.52)	11,174 (0.41)	48,180 (1.80)	52,925 (2.00)	86,870 (3.10)
<b>Waste recycled</b>						
Metal – from old gas appliances	Tonnes	<b>1,432</b>	1,521	1,607	1,626	1,678
Metal – from construction and maintenance of plant and pipelines	Tonnes	<b>23</b>	73	68	62	82
Lead acid battery	Tonnes	<b>20.3</b>	10.1	23.5	16.8	24.8

### Notes:

- \* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.
- 1) The following conversion factors are used to standardise the units to gigajoules (GJ): diesel (0.036GJ/L), electricity (0.0036GJ/kWh), naphtha (0.042GJ/kg), natural gas (0.04GJ/m<sup>3</sup>), unleaded petrol (0.033GJ/L), and town gas (0.048GJ/unit). The conversion of landfill gas to energy is calculated by multiplying individual monthly fuel volumetric data by their corresponding monthly average calorific value.
- 2) For gas production only. The total greenhouse gas emission includes scope 1 and 2 emissions only.
- The emission factors used to calculate GHG emissions from electricity consumption are obtained from two local electricity companies, utilising the most up-to-date data and information available during the reporting year. Other emission factors were obtained from local governments and authorities in their respective jurisdictions. In situations where local emissions factors are not available, other recognised sources are referenced.
- The reported GHG emission data cover the operations in Hong Kong. 2023 data are consolidated using the operational control measurement approach in the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004).
- Ozone-depleting substances were taken into consideration and their amount was found to be negligible. Hence, separate disclosure is not presented in the report.
- 3) For gas production only.
- All water is freshwater purchased from and distributed by the HKSAR Water Supplies Department. All wastewater handling procedures comply with the local regulations.
- 4) "Non-hazardous waste landfilled" refers to the refuse and construction waste collected from Towngas Headquarters and Tai Po Gas Production Plant.
- 5) "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 printing cartridges, on a regular basis.
- 6) All chemical waste handling procedures comply with the Waste Disposal Ordinance (Cap. 354). We also collect other non-process related hazardous waste, such as rechargeable batteries, fluorescent tubes and obsolete electronic products, and deliver them to licensed recyclers on a regular basis.

## Outside Hong Kong

### Employees

	Unit	2023	2022	2021	2020	2019
<b>Total</b>						
Full-time	Number	<b>20,693*</b>	21,820	52,637	51,067	50,342
Part-time	Number	<b>8</b>	3	10	7	10
Permanent	Number	<b>20,693</b>	21,820	–	–	–
Contract	Number	<b>0</b>	0	–	–	–
<b>By gender</b>						
Male	Number	<b>14,404*</b>	15,302	35,975	34,876	34,069
Female	Number	<b>6,289*</b>	6,518	16,662	16,191	16,273
<b>By age group</b>						
≤35	Number	<b>8,765*</b>	9,463	21,846	21,990	20,563
36-55	Number	<b>10,958*</b>	11,382	28,064	26,734	27,376
≥56	Number	<b>970*</b>	975	2,727	2,343	2,403
<b>By employee category</b>						
Managerial employee	Number	<b>732*</b>	691	1,149	1,082	1,003
Supervisory employee	Number	<b>2,971*</b>	3,215	5,380	5,013	5,750
General employee	Number	<b>16,990*</b>	17,914	46,108	44,972	43,589

	Unit	2023	2022	2021	2020	2019
<b>Turnover (number and rate)<sup>1)</sup></b>						
Average turnover	Number (%)	<b>868 (4.1)</b>	1,308 (6.0)	(2.6)	(2.0)	(2.8)
<b>By gender</b>						
Male	Number (%)	<b>627 (4.2)</b>	1,036 (6.8)	(2.8)	(2.1)	(2.9)
Female	Number (%)	<b>241 (3.8)</b>	272 (4.2)	(2.1)	(1.7)	(2.6)
<b>By age group</b>						
≤35	Number (%)	<b>604 (6.6)</b>	943 (10.0)	(4.3)	(3.2)	(4.4)
36-55	Number (%)	<b>251 (2.2)</b>	345 (3.0)	(1.4)	(1.1)	(1.8)
≥56	Number (%)	<b>13 (1.3)</b>	20 (2.1)	(0.5)	(0.8)	(1.3)
<b>New recruitment (number and rate)<sup>2)</sup></b>						
Total	Number (%)	<b>1,684 (7.9)</b>	2,086 (9.6)	2,193	1,493	2,736
<b>By gender</b>						
Male	Number (%)	<b>1,184 (8.0)</b>	1,492 (9.8)	1,535	1,123	1,864
Female	Number (%)	<b>500 (7.8)</b>	594 (9.1)	658	370	872
<b>By age group</b>						
≤35	Number (%)	<b>1,232 (13.5)</b>	1,575 (16.6)	1,690	1,127	1,967
36-55	Number (%)	<b>418 (3.7)</b>	498 (4.4)	492	354	742
≥56	Number (%)	<b>34 (3.5)</b>	13 (1.3)	11	12	27
<b>Performance and career reviews</b>						
Total percentage	%	<b>95.5</b>	96.0	—	—	—
<b>By gender</b>						
Male	%	<b>95.8</b>	95.9	—	—	—
Female	%	<b>94.8</b>	96.3	—	—	—
<b>By employee category</b>						
Managerial employee	%	<b>95.9</b>	97.0	—	—	—
Supervisory employee	%	<b>96.9</b>	93.3	—	—	—
General employee	%	<b>95.2</b>	96.4	—	—	—
<b>Training</b>						
Total	Hours	<b>2,074,140</b>	1,350,836	1,392,042	—	—
Average (per employee)	Hours	<b>100</b>	62	51.5	—	—
<b>By gender (average training hours and percentage of employee who received training)</b>						
Male	Hours (%)	<b>102.7 (92.8)</b>	61.8 (97.6)	51.2 (96.6)	—	—
Female	Hours (%)	<b>94.5 (90.7)</b>	62.2 (96.6)	52.1 (95.8)	—	—
<b>By employee category (average training hours and percentage of employee who received training)</b>						
Managerial employee	Hours (%)	<b>60.1 (93.0)</b>	39.8 (97.4)	45.7 (93.2)	—	—
Supervisory employee	Hours (%)	<b>72.0 (87.2)</b>	47.0 (93.9)	46.7 (91.2)	—	—
General employee	Hours (%)	<b>106.9 (93.0)</b>	65.4 (97.9)	52.4 (97.2)	—	—

	Unit	2023	2022	2021	2020	2019
<b>Diversity (ratio of male to female)</b>						
Managerial employee	Ratio	<b>3.7:1</b>	5.6:1	—	—	—
Supervisory employee	Ratio	<b>2.5:1</b>	2.5:1	—	—	—
General employee	Ratio	<b>2.2:1</b>	2.3:1	—	—	—
Notes:						
* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.						
1) Starting from 2022, both "Number of Voluntary Turnover" and "Voluntary Turnover Rate" are disclosed. Numbers prior to 2022 are referred to as "Turnover Rate".						
2) Starting from 2022, both "Number of New Recruitment" and "New Recruitment Rate" are disclosed. Numbers prior to 2022 are referred to as "Number of New Recruitment".						
<b>Safety</b>						
	Unit	2023	2022	2021	2020	2019
<b>Employees</b>						
Recordable work-related injuries	Number (per 1,000,000 work-hours)	<b>6 (0.15)</b>	13 (0.3)	—	—	—
Lost days due to work injuries <sup>1)</sup>	Number of work-days	<b>448</b>	395	1,072	955	1,265
High-consequence work-related injuries	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0 (0)	—	—	—
Recordable work-related ill health	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0 (0)	—	—	—
Fatalities <sup>2)</sup>	Number (per 1,000,000 work-hours)	<b>0* (0)</b>	1 (0.02)	0	0	0
<b>Contractors</b>						
Recordable work-related injuries	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	2	—	—	—
Lost days due to work injuries	Number of work-days	<b>0</b>	18	—	—	—
High-consequence work-related injuries	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0	—	—	—
Recordable work-related ill health	Number (per 1,000,000 work-hours)	<b>0 (0)</b>	0	—	—	—
Fatalities <sup>2)</sup>	Number (per 1,000,000 work-hours)	<b>0* (0)</b>	1	—	—	—
Notes:						
* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.						
1) Starting from 2022, "Lost days due to work injuries" replaces "Industrial injury man-days lost". Numbers prior to 2022 were previously reported as "Industrial injury man-days lost".						
2) Refers to the number of fatalities as a result of work-related injury.						
<b>Social</b>						
	Unit	2023	2022	2021	2020	2019
<b>Community involvement<sup>1)</sup></b>						
Employees participating in voluntary services	Number	<b>10,765</b>	13,379	12,923	11,176	11,487
Voluntary service hours	Hours	<b>440,607</b>	584,329	578,586	714,300	264,440
Note:						
1) Reporting scope includes all project companies in mainland utility businesses.						

## Environmental

	Unit	2023	2022	2021	2020	2019
<b>Energy consumption<sup>1)</sup></b>						
Diesel	GJ	<b>87,806*</b>	98,121	107,864	85,499	101,709
Natural gas	GJ	<b>1,464,808*</b>	1,194,172	903,818	473,302	396,348
Unleaded petrol	GJ	<b>101,550*</b>	107,095	110,901	101,924	105,700
Electricity	GJ	<b>2,611,937*</b>	2,822,163	2,876,782	2,726,131	2,696,294
Others	GJ	<b>3,860,549*</b>	5,288,583	11,027,861	10,464,435	10,590,575
<b>Emissions</b>						
Total greenhouse gases (GHG) <sup>2)</sup>	Tonnes CO <sub>2</sub> e	<b>2,214,000*</b>	2,503,000	1,503,000	1,406,000	1,439,000
Scope 1 emissions <sup>3)</sup>	Tonnes CO <sub>2</sub> e	<b>1,596,000*</b>	1,830,000	893,000	818,000	843,000
Scope 2 emissions <sup>4)</sup>	Tonnes CO <sub>2</sub> e	<b>618,000*</b>	673,000	610,000	588,000	596,000
Nitrogen oxides (NO <sub>x</sub> ) <sup>5)</sup>	Tonnes	<b>184</b>	175.9	190.0	223.7	296.1
Sulphur dioxides (SO <sub>2</sub> ) <sup>5)</sup>	Tonnes	<b>89.0</b>	133.6	256.6	258.0	422.0
Respirable suspended particulates (PM10) <sup>5)</sup>	Tonnes	<b>2.58</b>	4.56	2.61	2.34	2.99
<b>Water withdrawal/discharge</b>						
Water withdrawal – from municipal water supplies	Million m <sup>3</sup>	<b>4.49</b>	4.61	5.09	5.23	4.83
Water withdrawal <sup>6)</sup> – from fresh surface water	Million m <sup>3</sup>	<b>472.16</b>	469.39	459.13	427.50	–
Wastewater discharged <sup>7)</sup> – to sewage	Million m <sup>3</sup>	<b>1.55</b>	1.19	1.24	1.20	1.36
<b>Waste management<sup>8)</sup></b>						
Hazardous waste <sup>7)</sup>	Tonnes	<b>3,929</b>	2,185	2,441	1,084	1,160
Non-hazardous waste	Tonnes	<b>280,820</b>	368,734	359,085	294,114	284,939

Notes:

\* Denotes data that has been assured by Deloitte Touche Tohmatsu. Please refer to the Independent Limited Assurance Report for further details.

1) The following conversion factors are used to standardise the units to gigajoules (GJ): electricity (0.0036GJ/kWh), unleaded petrol (0.033GJ/L), diesel (0.036GJ/L) and natural gas (0.04GJ/m<sup>3</sup>).

2) The reported GHG emissions data cover the operations within and outside Hong Kong. From 2022, data are consolidated on a control basis in the Greenhouse Gas Protocol, while GHG emissions prior to 2022 are consolidated on an equity basis.

GHG emissions inventory covers seven types of GHGs specified in the Kyoto Protocol. The global warming potential rates were from the IPCC Fifth Assessment Report (2014).

The regional grid emission factors used to calculate GHG emissions from electricity consumption are obtained from the most up-to-date data and information available during the reporting year. Other emissions factors were obtained from local governments and authorities in their respective jurisdictions. In situations where local emissions factors are not available, other recognised sources are referenced.

Ozone-depleting substances were taken into consideration and their amount was found to be negligible. Hence, separate disclosure is not presented in the report.

3) Scope 1 emissions – Direct emissions from fuel consumption of production plants, vehicle fleets and methane leakage from our pipeline network, etc.

4) Scope 2 emissions – Indirect emissions from electricity consumption of production plants, offices, customer centres, gas refilling stations, data centres, etc.

5) From fuel combustion and vehicle emissions.

6) From water projects.

7) All hazardous waste and wastewater discharged – to sewage handling procedures complying with the national regulations. The historical numbers were restated to align the calculation methodology across years.

8) Solid and liquid waste have been combined.

## Scope 3 Emissions Reporting Methodology

The total scope 3 carbon emissions in 2023 were 27,555,000 tCO<sub>2</sub>e, with the most significant source coming from Category 11 – use of sold products, as categorised by the Greenhouse Gas Protocol. These emissions account for over 80% of our value chain emissions. The table below outlines the calculation methodologies for scope 3.

Category	Methodology & Activity Data	Emission Factor
1. Purchased goods and services	<b>Average-data</b> (product related) Quantities of purchased fuel and water from internal system.	<ul style="list-style-type: none"> <li>Australian Government “National Greenhouse Accounts Factors 2023”</li> <li>Hong Kong Water Supplies Department Annual Report 2021-2022</li> <li>US Environmental Protection Agency “Supply Chain Greenhouse Gas Emission Factors v1.2”</li> </ul>
2. Capital goods	<b>Spend-based</b> Annual spend data from internal system.	<ul style="list-style-type: none"> <li>US Environmental Protection Agency “Supply Chain Greenhouse Gas Emission Factors v1.2”</li> </ul>
3. Fuel- and energy related activities (not included in scope 1 or scope 2)	<b>Average-data</b> Quantities of consumed fuels and electricity consumed in production process from the internal system.	<ul style="list-style-type: none"> <li>Australian Government “National Greenhouse Accounts Factors 2023”</li> </ul>
4. Upstream transportation and distribution	<b>Distance-based</b> Quantities, types of gas appliances procured and regional split of purchase from the internal system.	<ul style="list-style-type: none"> <li>US Environmental Protection Agency “2024 GHG Emission Factors Hub”</li> </ul>
5. Waste generated in operations	<b>Waste-type-specific</b> Quantities of waste generated during operation by type from internal system.	<ul style="list-style-type: none"> <li>US Environmental Protection Agency “2024 GHG Emission Factors Hub”</li> <li>Hong Kong Drainage Services Department Sustainability Report 2021-2022</li> </ul>
6. Business travel	<b>Distance-based</b> Air travel data collected from corporate travel service providers.	<ul style="list-style-type: none"> <li>US Environmental Protection Agency “2024 GHG Emission Factors Hub”</li> </ul>
7. Employee commuting	<b>Distance-based</b> Number of employees from internal system with estimated travel mode and average distance travelled.	<ul style="list-style-type: none"> <li>City University of Hong Kong “Carbon Audit Guidelines”</li> </ul>

Category	Methodology & Activity Data	Emission Factor
8. Upstream leased assets	Exclusion – Emissions of leased offices are included in scope 2 emissions. No other operation of leased assets.	
9. Downstream transportation and distribution	<b>Distance-based</b> Annual revenue data of sold gas appliances and energy products (where applicable) from internal system with estimated travel mode and distance travelled.	<ul style="list-style-type: none"> <li>US Environmental Protection Agency “2024 GHG Emission Factors Hub”</li> </ul>
10. Processing of sold products	Exclusion – Major products are end products for which processing is not required.	
11. Use of sold products	<b>Average-data (gas and methanol)</b> Quantities and types of products sold from internal system.  <b>Spend-based (others)</b> Annual revenue data from sales of products from internal system.	<ul style="list-style-type: none"> <li>Guidelines to Account for and Report on GHG Emissions and Removals for Buildings in Hong Kong (2010)</li> <li>Australian Government “National Greenhouse Accounts Factors 2023”</li> </ul>
12. End-of-life treatment of sold products	<b>Average-data</b> Data of sold gas appliances and water sales collected from internal system.  For energy products, no end-of-life treatment is required.	<ul style="list-style-type: none"> <li>US Environmental Protection Agency “2024 GHG Emission Factors Hub”</li> <li>Australian Government “National Greenhouse Accounts Factors 2023”</li> </ul>
13. Downstream leased assets	Exclusion – Leasing business is minimal/negligible.	
14. Franchises	Exclusion – Franchise business is minimal/negligible.	
15. Investments	Exclusion – data not available.	

# INDEPENDENT LIMITED ASSURANCE REPORT

## Deloitte.

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### To the Directors of the Hong Kong and China Gas Company Limited

We have been engaged by the Board of Directors of The Hong Kong and China Gas Company Limited (the “Company” or “Towngas”) to perform a limited assurance engagement on selected information (the “Selected Sustainability Information”) set out below, and is presented in the Company and its subsidiaries (collectively referred to as the “Group”) Environmental, Social and Governance Report for the year ended 31 December 2023 (“Environmental, Social and Governance Report 2023”) with reference to the International Financial Reporting Standard S2 Climate-related Disclosures, the Global Reporting Initiative (the “GRI”) Universal Standards 2021, GRI 11 Oil and Gas Sector Disclosures 2021 and the Environmental, Social and Governance Reporting Guide (“ESG Guide”) under Appendix C2 to the Main Board Listing Rules of Securities of The Stock Exchange of Hong Kong Limited (collectively referred to as the “Reporting Criteria”) and the Company management’s measurement criteria.

Selected Sustainability Information is listed below:

Selected Sustainability Information	Scope of Assurance
Greenhouse gas (“GHG”) emissions	Group level – Scope 1 and Scope 2
GHG emissions	Group level – Scope 3 (Category 3 Fuel- and energy-related activities (not included in scope 1 or scope 2) and Category 11 Use of sold products*)
Carbon intensity*	Hong Kong Gas Production – kg CO <sup>2</sup> equivalent per unit of town gas
Energy consumption	Hong Kong Portfolio – Electricity, Naphtha, Natural Gas, Synthetic Natural Gas and Landfill Gas, Towngas, Diesel, Unleaded Petrol; Portfolio outside Hong Kong – Diesel, Natural Gas, Unleaded Petrol, Electricity and Others
Fuel mix	Hong Kong Portfolio – Natural Gas, Naphtha and Landfill Gas
Gender pay ratio	Hong Kong Portfolio
Gender ratio	Hong Kong Portfolio – managerial employee
Number of employees	Hong Kong and outside Hong Kong Portfolio – full time (Male and Female)
Number of employees	Hong Kong and outside Hong Kong Portfolio – full time (by age group: <=35, 36-55 and >=56)
Number of employees	Hong Kong and outside Hong Kong Portfolio – full time (by grading: managerial, supervisory and general)
Fatalities	Hong Kong and outside Hong Kong Portfolio – Employee and Contractor
Lost-time injury frequency rate	Group level – Employee and Contractor
Number of critical tier 1 suppliers and their S-carbon coverage rate	Hong Kong Portfolio
Scrap metal recycled from used gas appliances	Hong Kong Portfolio
Emergency team’s average arrival time	Hong Kong Portfolio

\* Our procedures did not extend to include the validation of the underlying data of town gas sold in Hong Kong extracted from the audited 2023 Annual Results Announcement of the Group for the year ended of 31 December 2023. The data was used to calculate the carbon intensity and scope 3 emissions from Category 11.

Note: Both Hong Kong and outside Hong Kong portfolio only includes Towngas and its subsidiaries

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Our assurance engagement does not extend to information in respect of earlier periods or to any other information linked to from the Group's website including any images, audio files or embedded videos and we do not express an assurance conclusion on such information.

## Our Limited Assurance Conclusion

Based on the procedures we have performed as described under the "Summary of the Procedures we Performed as the Basis for Our Assurance Conclusion" and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Sustainability Information in the Group's Environmental, Social and Governance Report 2023, is not prepared, in all material respects, with reference to the Reporting Criteria and the Company management's measurement criteria.

## Understanding how the Company has Prepared the Sustainability Information

The absence of a commonly used generally accepted reporting framework or a significant body of established practice on which to draw to evaluate and measure sustainability information allows for different, but acceptable, measurement techniques that can affect comparability between entities and over time.

Consequently, the sustainability information needs to be read and understood together with the Reporting Criteria and the basis of preparation set out in the Group's Environmental, Social and Governance Report 2023.

## Responsibilities of the Board of Directors for the Environmental, Social and Governance Report 2023

The Board of Directors of the Company are responsible for

- Selecting or establishing suitable criteria for preparing the Selected Sustainability Information;
- The preparation of the Selected Sustainability Information in accordance with the Reporting Criteria and the Company management's measurement criteria; and
- Designing, implementing and maintaining internal control over information relevant to the preparation of the Selected Sustainability Information that is free from material misstatement, whether due to fraud or error.

## Responsibilities of the auditor

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the Selected Sustainability Information is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our conclusion to the Directors of the Company.

As we are engaged to form an independent conclusion on the Selected Sustainability Information as prepared by management, we are not permitted to be involved in the preparation of the Selected Sustainability Information as doing so may compromise our independence.

## Professional Standards Applied

We conducted our engagement in accordance with the International Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements other than Audits or Reviews of Historical Financial Information" and, in respect of green gas emissions included in the Selected Sustainability Information, in accordance with International Standard on Assurance Engagements 3410 "Assurance Engagements on Greenhouse Gas Statements", issued by the International Auditing and Assurance Standards Board.

## Our Independence and Quality Management

We have complied with the independence and other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Management 1. "Quality Management for firms that Perform Audit or Reviews of Financial Statements, or Other Assurance or Related Services Engagements", which requires the firm to design, implement and operate a system of quality management including policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

## Summary of the Procedures we Performed as the Basis for our Assurance Conclusion

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Selected Sustainability Information is likely to arise. The procedures we performed were based on our professional judgment. In carrying out our limited assurance engagement on the Selected Sustainability Information, our procedures include:

- Evaluated the suitability in the circumstances of the Company's use of the Reporting Criteria and the Company management's measurement criteria, as the basis for preparing the Selected Sustainability Information presented in the Environmental, Social and Governance Report 2023;
- Through inquiries, obtained an understanding of the Group's control environment, processes and information systems relevant to the preparation of the Selected Sustainability Information, but did not evaluate the design of particular control activities, obtain evidence about their implementation or test their operating effectiveness;
- Evaluated whether the Company's methods for developing estimates are appropriate and had been consistently applied, but our procedures did not include testing the data on which the estimates are based or separately developing our own estimates against which to evaluate the Company's estimates;
- Performed analytical procedures by comparing the expected targets to actual emissions or consumption, and by comparing current period to prior period, and made inquiries of management to obtain explanations for any significant differences we identified;
- Performed sample testing of the Selected Sustainability Information against the Reporting Criteria and the Company management's measurement criteria as set out in the Environmental, Social and Governance Report 2023, as appropriate; and
- Considered the presentation and disclosure of the Selected Sustainability Information in the Environmental, Social and Governance Report 2023.

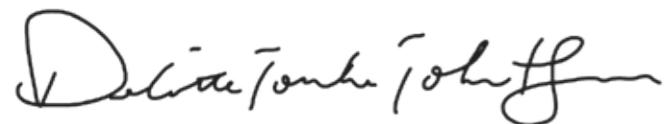
The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

## Inherent Limitation

GHG emissions quantification is subject to significant inherent measurement uncertainty because of such things as GHG emissions factors that are used in mathematical models to calculate GHG emissions, and the inability of these models, due to incomplete scientific knowledge and other factors, to accurately measure under all circumstances the relationship between various inputs and the resultant GHG emissions. Environmental and energy use data used in GHG emissions calculations are subject to inherent limitations, given the nature and the methods used for measuring such data. The selection by management of different but acceptable measurement techniques could have resulted in materially different amounts or metrics being reported.

## Purpose and Restriction on Distribution and Use

This report is made solely to Board of Directors of the Company in accordance with our engagement letter dated 22 March 2024 for the purpose of providing a limited assurance conclusion on the Selected Sustainability Information in the Group's Environmental, Social and Governance Report 2023. As a result, the report may not be suitable for another purpose. For the avoidance of doubt, all duties and liabilities (including without limitation those arising from negligence) to third parties, are specifically disclaimed. The Contracts (Rights of Third Parties) Ordinance does not apply, and only the signing parties to the engagement letter contract have any rights under it.



Deloitte Touche Tohmatsu  
Hong Kong  
16 April 2024



Scan the QR code for the mobile version

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:

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