

INFRASTRUCTURE



As a leading player in the global infrastructure area, the Infrastructure division has a variety of investments and developments across the world including Energy Infrastructure, Transportation Infrastructure, Water Infrastructure, Waste Management, Waste-to-energy, Household Infrastructure and Infrastructure Related Businesses.

The Infrastructure division is committed to implementing initiatives such as adopting new clean technologies, improving energy efficiency, and reducing wastage to help make the world a better place and fight against climate change while creating a sustainable business.

Key Sustainability Achievements in 2019

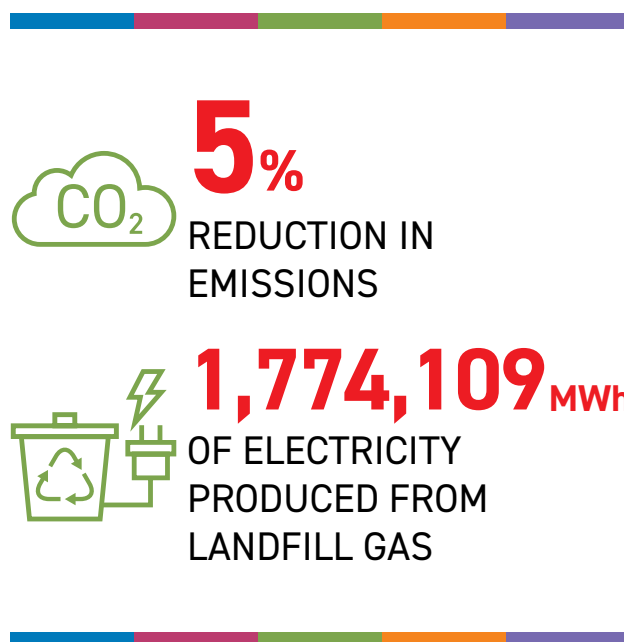
- AVR-Afvalverwerking B.V. ("AVR")'s CO₂ capture plant commenced operation.
- AVR completed separation plant for plastics and drink cartons from residual waste.
- Hydrogen projects for clean energy.
- UK Power Networks ("UKPN") had over 7GW more of renewable energies connected to its networks between 2011-2018.

Key Sustainability Initiatives in 2020

- Improve energy efficiency.
- Reduce wastage.
- Explore use of technology to assist in monitoring.
- Invest in business to improve consumer experience.
- UKPN to build more energy infrastructure to support electric vehicle charging and smart meter projects.



Read more on CK Infrastructure's corporate website and ESG Report



7.1. Sustainability Governance

CKI's Environment, Social and Governance working group comprised of members from relevant functions within CKI, including International Operation, China Infrastructure, Corporate Finance, Business Development, Finance & Accounting, Corporate Legal, Corporate Affairs, Company Secretarial, Planning & Investment, Internal Audit, Information Technology, Administration and Human Resources. To facilitate the coordination of activities among the business units within the Infrastructure division, it also includes designated personnel of Power Assets (including HK Electric), Green Island Cement & Alliance Construction Materials, UKPN, Northumbrian Water, Northern Gas Networks, Wales & West Utilities, Seabank Power, UK Rails, SA Power Networks, Victoria Power Networks, Australian Gas Networks, Dampier Bunbury Pipeline, Multinet Gas, Energy Developments, United Energy, Australian Energy Operations, Wellington Electricity, EnviroNZ, Dutch Enviro Energy, Portugal Renewable Energy, ista, Canadian Power, Park'N Fly, Canadian Midstream Assets and Reliance Home Comfort.

In managing and reporting the sustainability performance of the division, the sustainability working group identifies and assesses material sustainability aspects of the operations. CKI's management provides confirmation that appropriate and effective sustainability risk management and internal control systems are in place.

7.2. Anti-Corruption

7.2.1. Commitment

The Infrastructure division has zero-tolerance on any forms of bribery, corruption and fraud. Policies and measures against corruption and other malpractices are also adopted by business units across the division.

7.2.2. The Challenges

As the Infrastructure division is spread globally, it is important to take a proactive and holistic approach to avoid any incidents of bribery and corruption. It heavily relies on its operating companies to develop an all rounded anti-corruption policy and training to its staff based on the requirements of the Group and local government requirements for any controlling subsidiaries.

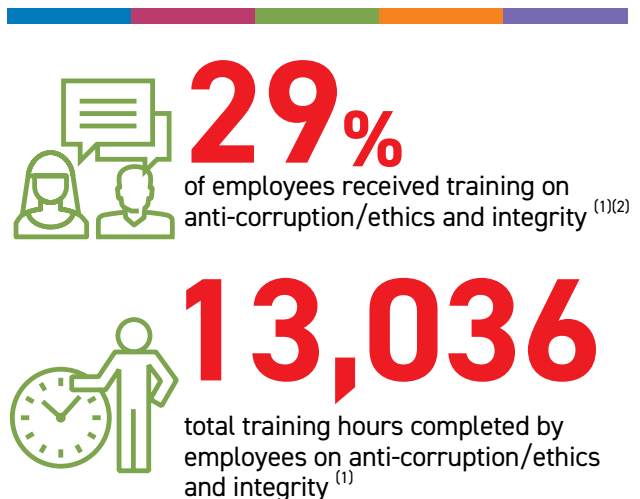
7.2.3. Initiatives

7.2.3.1. Anti-competition Monitoring Control System

The Infrastructure division has monitoring and management control systems in place to detect bribery, fraud or other malpractice activities directly at the source. Employees and all other concerned stakeholders are encouraged to raise concerns on suspected cases

through the company's whistleblowing mechanisms. Employees and stakeholders are able to report their concerns through multiple channels such as phone, fax, post or email.

The division will conduct initial assessments and liaise closely with the respective business units. Upon initial investigation, any significant cases that require follow up may be reported to management and investigated internally by the Audit Committee or other departments of the company delegated by the Audit Committee. All cases are treated in a highly confidential manner and any whistleblowers will be protected from any unfair treatment.



Note:

(1) It covers full-time and part-time employees.

(2) It is calculated based on the latest available full-year figures, divided by the total number of employees as at 31 December 2019.

7.3. Occupational Health and Safety

7.3.1. Commitment

Employees of the Infrastructure division are exposed to a number of occupational hazards and risks that might adversely affect their health. The division is committed to providing a safe and healthy work environment for its employees with the initiatives listed below.

7.3.2 The Challenges

While occupational health and safety is one of the priorities for most employers, it is even more important for businesses requiring working in hazardous environments, such as Infrastructure. The occurrence of work-related incidents, injuries, diseases and deaths can add to a company's costs, cause damage to corporate reputation or even end businesses if appropriate measures are not

in place. Therefore, creating a safe and well-supervised working environment is of utmost importance in the division's day-to-day operations.

7.3.3. Initiatives

7.3.3.1. Creating a Strong Culture of Safety

The Infrastructure division strives to improve safety leadership and strengthen safety culture within the organisation.



Australian Gas Networks used to track its safety performance using lag indicators, which only worked when something has gone wrong but were unable to stop incidents before they happened. In 2019, the company adopted Leading Indicator Cultural Models which considered a range of key performance indicators related to employees' health, safety and environmental ("HSE") objectives, with scores and weightings aligned to its vision, including:

- Effective leadership engagements: face-to-face discussions completed by senior leaders focusing on recognising and reinforcing HSE behaviours.
- Meeting actions.
- Reporting compliance.
- Field audit completion.
- Training compliances.

AVR held a Safety Week during which employees assumed the role of safety experts and came up with ideas. The managers went around the sites to talk to employees once a month while the Board did this fortnightly. The discussions covered topics like safe behaviour, employees' working methods, training courses and their awareness of emergency numbers and assembly points.

Northern Gas Networks in the UK obtained the third consecutive gold award from the Royal Society for Prevention of Accidents for demonstrating leading practices in health and safety.

7.3.3.2. Caring for Employees' Mental Health

CKI aids employees affected by mental health issues and open the conversation around mental health in the workplace.

Northern Gas Networks engaged external training providers to deliver a Mental Health Awareness Programme, including training, workshops and events network-wide over the course of 2019 to better inform employees of the importance of mental health.

HK Electric continued to use "Drive your own purpose" as a theme for year 2019, aimed at motivating employees to take ownership of their own physical and emotional wellness. A wide range of initiatives including interest classes, seminars, health talks, training courses and fitness activities ran to help staff maintain work-life balance.

0

work-related fatalities



4,069

lost days due to work injury

Note:
Latest available full-year figures.

7.4. Community Engagement

7.4.1. Commitment

As a utility services provider, the Infrastructure division is in a good position to deliver added value to local communities. Among these regions, there are some economically challenged communities from rural or remote areas, and as companies embedded in these neighbourhoods, there is a duty for the operating companies to actively engage and support communities and individuals faced with fuel poverty and associated forms of vulnerability.



7.4.2. The Challenges

In today's highly interconnected world, corporates operate within a complex network of influence. To be successful, it is important to recognise the different views and experiences of others, and balance between the conflicting stakeholder demands. Corporates also need to be able to measure the effectiveness of engagement and investment programmes in order to provide insights for more targeted community initiatives in the future.

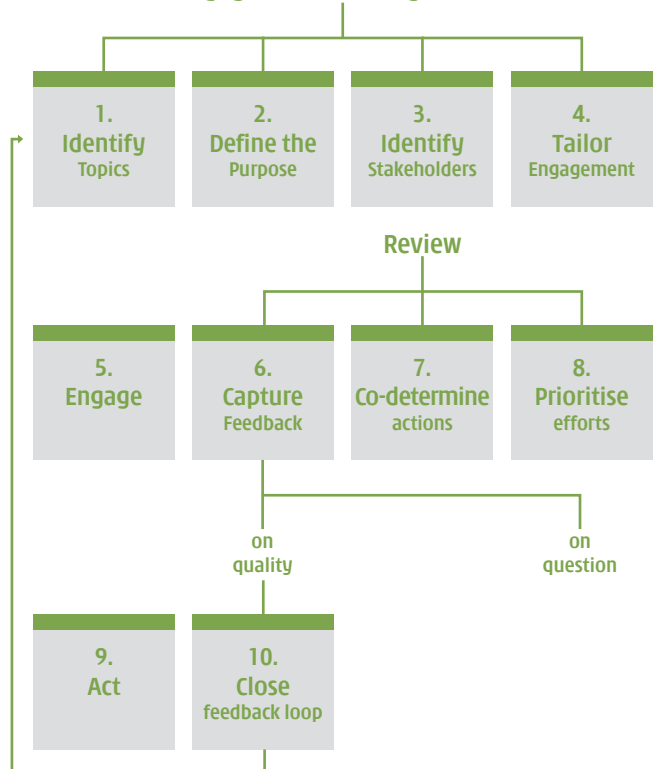
7.4.3. Initiatives

7.4.3.1. Supporting Effective Engagement

Effective engagement helps translate stakeholder needs into organisational goals and creates the basis of effective strategy development. In order to maintain regular and effective dialogue, operating companies establish different stakeholder engagement programmes to engage in tailored ways for more effective communication.

At Wales & West Utilities, the comprehensive engagement process is informed by three high-level principles of inclusivity, transparency and continuous improvement. These principles consider those identified in the AA1000 Stakeholder Engagement Standard, as well as reflecting our own businesses values and approach in engaging with stakeholders.

Engagement Planning Process



Working alongside the ongoing and extensive programme of engagement with both stakeholders and customers, Wales & West Utilities also has a Customer Engagement Group ("CEG") that robustly challenges the company's plans and for future investment, customer services and social obligations, environmental performance, etc. Formed by nine members representing different customers and stakeholders, with specialisms in different areas, the CEG is independent from both Wales & West Utilities and its regulator, the CEG's views will help the regulator to understand how Wales & West Utilities' business plans reflect and meet the needs of different stakeholders.

7.4.3.2. Shaping Future Energy Policies through Engagement

A low-carbon future is important to customers and there has been active engagements with stakeholders, policymakers and the community more generally to help shape this future.

Over the course of 2019, Australian Gas Infrastructure Group ("AGIG") presented at more than 25 conferences and stakeholder meetings, outlining the future development of gas through the development of hydrogen and biogas resources. Through submissions to government, regulators and industry groups, the company supported the need for Australia to reduce its emissions and highlighted the benefits of green gas in achieving this objective. In particular, it has supported the introduction of a target on mixing renewable gases into existing gas blend to accelerate the industry, decarbonise the domestic market and help Australia capture the export opportunities presented by hydrogen.

AGIG participated in a number of committees and working groups with a view to developing policies and strategies to enable a low-carbon future including:

- The Stakeholder Advisory Panel supporting the development of Australia's National Hydrogen Strategy.
- The Western Australian Renewable Hydrogen Council supporting the Western Australian Renewable Hydrogen Strategy.
- Bioenergy Australia, the peak body for the bioenergy industry.
- The Australian Hydrogen Council, the peak body for the hydrogen industry.
- The Future Fuels Cooperative Research Centre, an industry focused research, design and development partnership supporting Australia's transition to a low carbon energy future.

7.4.3.3. Investing in the Neighbourhood

Through different investments and initiatives, the Infrastructure division supports the communities it serves in a number of different ways.

In the UK, Northumbrian Water Group has established four Community Foundation Funds for organisations seeking to make a difference in their community. A panel made up of employees will meet to review applications on a regular basis. They make the decision to give grants, with priority given to those applications that set out to improve the health, education and environment of the community.

Northumbrian Water Group also encourages employees to support community and charitable organisations through the employee volunteering scheme "Just An Hour". This scheme allows employees to give a minimum of 15 hours every year to support causes close to their hearts. Not only does the programme provide employees with opportunities to serve the community it also allows them to learn new skills and can increase their confidence.

In Australia, Energy Developments supports three community investment initiatives around its remote operations, namely the West Kimberley Community Fund, Cullerin Range Wind Farm Community Enhancement Fund and Coober Pedy Community Fund. Through the funds, Energy Developments seeks to create lasting value for the communities and nurture community wellbeing through the support of not-for-profit, community-driven projects or activities.

7.5. Opportunities in Clean Technology

7.5.1. Commitment

With diversified investments, the Infrastructure division brings a positive environmental impact through the adoption of new clean technologies. Throughout the different operations, CKI encourages operating companies to explore and adopt new clean technologies where practicable.

7.5.2. The Challenges

Currently fossil fuels contribute the majority of global energy supply, and play a significant industrial role. With the existing energy infrastructure built for conventional fuels like coal and oil, major infrastructural change is required and this could hinder the development of cleaning technologies, in terms of cost and time, and discourage the adoption of clean technology.

7.5.3. Initiatives

7.5.3.1. Supporting Renewable Energy Development and Low Carbon Transition

Through the diversified investments in energy infrastructure, CKI has been preparing for a future powered by clean energy through different solutions ranging from renewables like solar and wind farms, hydroelectricity, hybrid projects, and energy transmission infrastructure which connects clean energy to existing grids for a more widespread deployment of renewable energy.

To encourage localised solar generation, there is a partnership between UKPN, Repowering London and EDF Energy. Its purpose is to trial a unique project at Elmore House in Brixton, south London, which enables the residents to access electricity generated from a solar PV system on the block's roof, store it in a battery and trade with one another using blockchain technology. This model has the potential to enable more people to use renewable energy at a lower cost, and bring new income for individuals and communities by participating in the flexibility market. From 2011 to 2018, there were already over seven GWs of renewables directly connected to UKPN's networks.

Besides developing localised renewables, efforts are also made to expand the smart grid capability and electric vehicle capacity in the UK. The enhanced smart grid functions will allow a more accurate prediction of electricity demand and supply, and better utilisation of the renewable generators and storage system for a greener and more effective grid system. Together with the strengthening of electric vehicle charging infrastructure, the initiatives are enabling UK's transition to a low-carbon economy.

In Australia, SA Power Networks formulated a "2016-2031 Future Operating Model" to explore what the future and our business would look like in 15 years and used the insight to help explore the strategic choices it could make. With distributed energy resources becoming much more common, it changes the way energy companies plan and manage their infrastructure and service network. In response to this, the company is now investigating and investing in the use of renewable energy and battery storage in the network, and provides support to customers interested in adopting this emerging technology.

7.5.3.2. Introducing Alternative Fuels and Hybrid Energy

In addition to renewables, the Infrastructure division is



also exploring different clean technology opportunities through the use of landfill gas, remote energy, waste coal mine gas, renewable natural gas and other alternative fuels to support the low-carbon transition of the global economy.

In the UK, Northern Gas Networks introduced a large-scale project, H21, to reduce carbon emissions and support conversion of the gas networks in the UK to carry 100% hydrogen. In July 2019, the project launched the testing facility for 100% hydrogen to inform government policy decision on the use of hydrogen in the existing gas network. Going forward, the site will carry out controlled tests to establish the critical safety evidence proving that a 100% hydrogen gas network is as safe as the natural gas grid heating homes and businesses today.

In Australia, Australian Gas Networks is preparing the existing gas network for biogas such as biomethane and greener alternatives like hydrogen, which allows the deployment of low-carbon alternatives in the gas distribution network.



7.5.3.3. Transforming Waste to Energy

With the enormous amount of municipal waste being generated in cities, there is also a huge potential in developing waste-to-energy facilities. In the Netherlands, the construction of a separation plant that separates plastics and drinks cartons from residual waste was completed in 2019. The plant generates steam via the incineration of residual waste and uses the heat to warm 150,000 households and supply electricity for 190,000 houses. Dutch Enviro Energy's CO₂ capture plant at Duiven started supplying CO₂ to horticulture greenhouses last year. This facility enables the reuse of 60,000 tons of CO₂ which are generated from residual waste processing.

Energy Developments produced 1,774,109 MWh of electricity from landfill gas. It is also working to install a biodome to store landfill gas for conversion when energy demand is high.

In Hong Kong, HK Electric has been optimising fuel mix by increasing the use of natural gas and working with local government to formulate new and more stringent emissions allowances from 2024 and onwards. To increase the proportion of gas-fired generation and decrease the emissions of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and particulate matters (PM), a new gas-fired generating unit equipped with Selective Catalytic Reduction systems was constructed in 2019 and two others are expected to be operational in 2022 and 2023.

7.6. Environmental Management

7.6.1. Commitment

The Infrastructure division is cognizant of the significance of environmental management. This is why it has invested in a diverse portfolio of investments in energy infrastructure, transportation infrastructure, water infrastructure, waste management, energy-from-waste, household infrastructure and infrastructure related businesses. The division is committed to minimise negative impacts on the environment and optimise the use of resources.

7.6.2. The Challenges

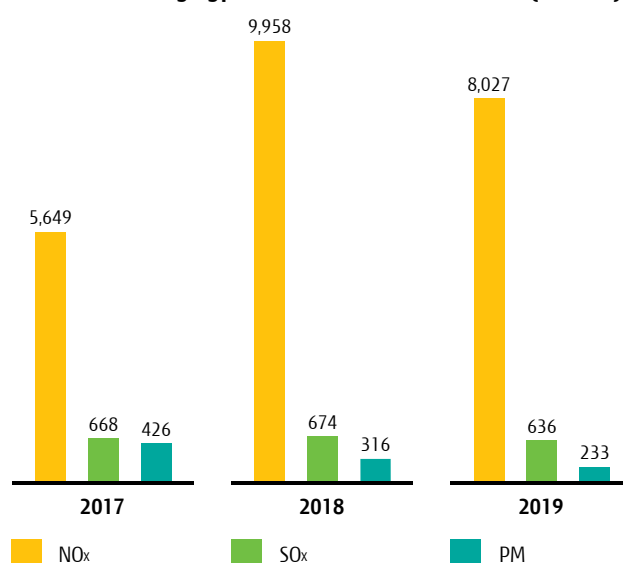
Adverse environmental impacts may occur in the construction and operational stages of infrastructure projects. As rapidly growing populations and urbanization lead to increasing demand of infrastructures, the Infrastructure division is facing challenges of supply, sufficiency and sustainability. The division must move forward responsibly and integrate environmental concerns into its business, including developing innovative ways to minimise negative environmental impacts and protect sensitive habitats from being irrevocably damaged during the design, planning, construction and operation of its projects.

7.6.3. Initiatives

7.6.3.1. Reducing Air Pollutants and GHG Emissions

CKI aims to meet the ever-tightening emission standards and continuously reduce air pollutants and GHG emissions.

Air Emissions by Type in Infrastructure Division (tonnes)



Note:
The 2017 and 2018 figures were restated according to CKI Annual Reports 2018 and 2019.

In Canada, coal-to-gas conversion was carried out on Canadian Power's only coal-fired power station, Sheerness power plant to reduce GHG emissions. Besides, a maintenance programme diagnosing leakages from natural gas systems and repairing them on a timely basis was implemented in Canadian Power's Meridian plant to minimise the release of fugitive GHG into the atmosphere.

Dutch Enviro Energy's CO₂ capture facility, the first waste facility in Europe to capture CO₂ on a large scale, commenced operations in 2019. CO₂ released after the incineration of residual waste was captured, cleaned and liquefied for use in greenhouse horticulture. The facility processes waste from 1.5 million homes and has a maximum capacity of 100,000 tonnes per annum.

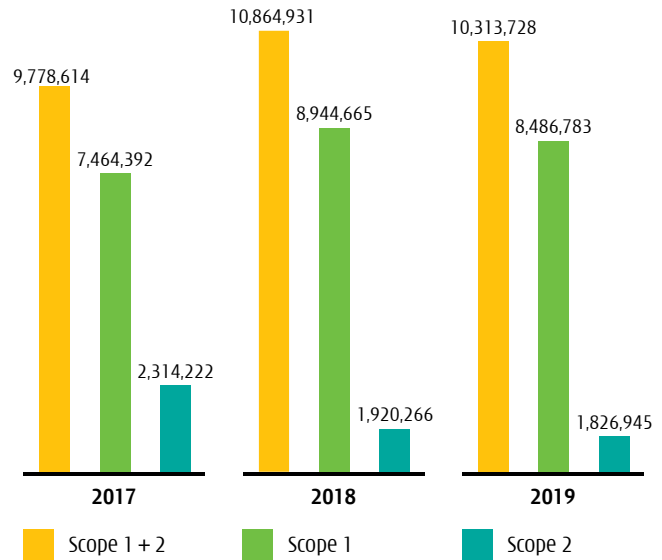
To make its fleet greener and to support sustainable transport, UKPN introduced a new connection product that enabled 18.5 million carbon emission-free

passenger journeys in one year. Northern Gas Networks conducted field trials of alternatively fuelled vehicles, including hydrogen, electric and compressed natural gas. GHG emissions from Northern Gas Networks' vehicles have reduced by 2.5% from 2016 to 2019.

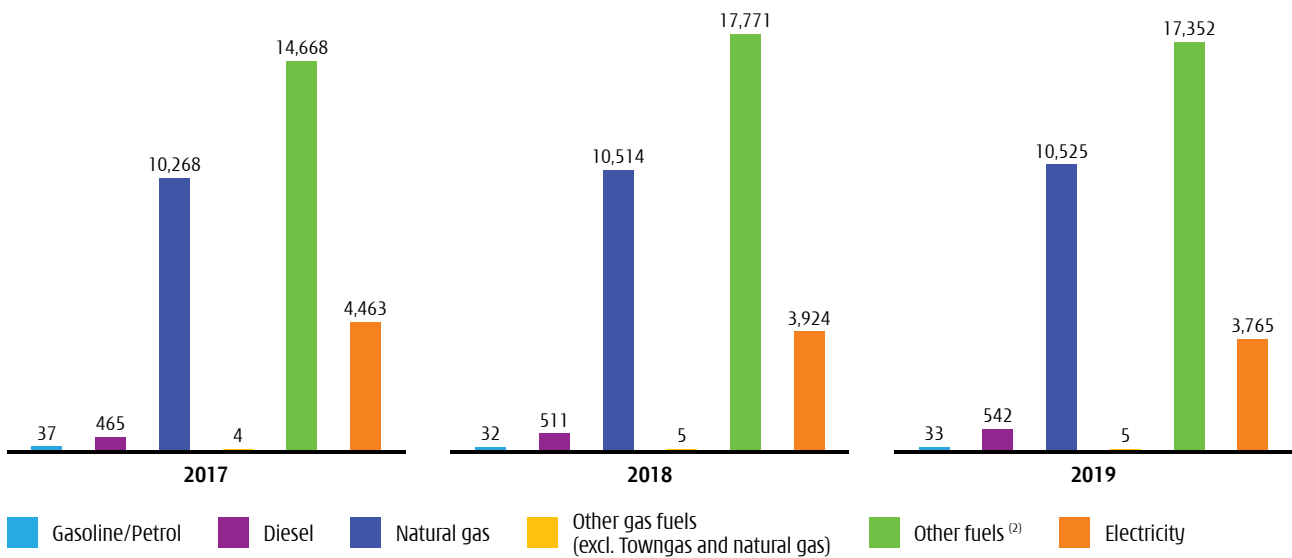
In the UK, in support of Wales & West Utilities zero emission fleet ambition, a change in the company car policy was initiated in 2019 to encourage employees to opt for electric and ultra-low emissions vehicles.

At ista, one of the Infrastructure division's investments in Europe, the company funded the reforestation of one hectare of new rainforest in Costa Rica to make use of the 9.4 tonnes of CO₂ stored by the trees every year. Through this project, it was able to offset nearly all the emissions from ista Croatia's electricity consumption.

GHG Scope 1 and 2 Emissions in Infrastructure Division ⁽¹⁾ (tCO₂e)



Energy Consumption in Infrastructure division ⁽¹⁾ (GWh)



Note:

(1) The 2017 and 2018 figures were restated according to CKI Annual Reports 2018 and 2019.

(2) Other fuels include residual fuel oil, waste oils, landfill gas, energy generated from industrial and municipal wastes, etc.



7.6.3.2. Promoting Reuse, Recycling and Reduction of Waste

CKI aims to reduce waste generation and turn waste into useful materials.

To avoid waste pipes generated in its gas mains replacement programme being disposed of to landfill, Northern Gas Networks in the UK took part in a recycling scheme and installed dedicated recycling bins in workplaces to encourage recycling of the plastic pipe waste. In 2019, waste plastic pipe totally 191 tonnes were recycled.

At Dutch Enviro Energy's Rosenburg facility, a plastic waste pre-sorting and separation facility began operations to increase the reuse of recyclable plastics and sorted 19 kilotonnes of plastics for reuse in 2019.

EnviroNZ in New Zealand commenced a domestic food waste and domestic refuse collection contract from 2019 to 2024 which included using six fully electric collection vehicles for the New Plymouth District Council, for the purpose of enabling the recycling of domestic waste as well as reducing waste sent to landfill.

AVR, owned by Dutch Enviro Energy, started to run its separation plant for sorting plastic, foils and drink

cartons from residual household waste in December 2018. By the end of 2019, over 19,000 tons of plastic packaging and drinks cartons were separated, 90% of which were further offered to recyclers.

7.6.3.3. Managing Water for People and Nature

CKI aims to prevent water pollution and use fresh water more efficiently.

Green Island Cement in Hong Kong has equipped a self-sewage treatment plant to treat and reuse wastewater for internal plant irrigation. Recycling stormwater for



process cooling has also been applied to minimise the amount of freshwater extracted. By effectively managing wastewater treatment, no wastewater was discharged to the sea in 2019.

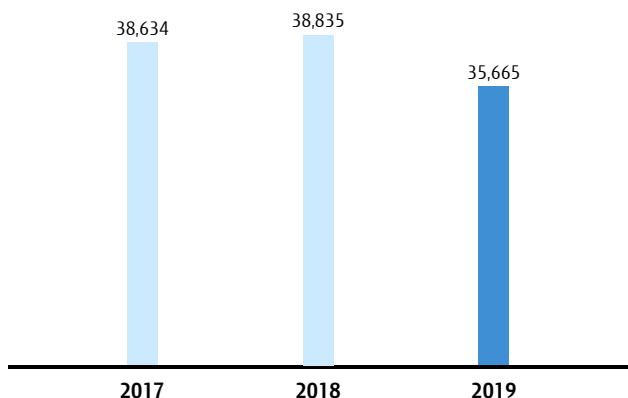
In 2019, around 23,000 cubic metres of high quality clean water was recovered in the reverse osmosis leachate treatment plant operated by EnviroNZ in New Zealand at its Hampton PARRC Landfill, making the treated water fit for reuse or direct discharge to the environment.

Seabank Power in the UK maintained an increase to the concentration factor of cooling water, effectively optimising water used for make-up and purging, and reducing the need for chemical treatment.

HK Electric has been collecting rain water and plant processing water for reuse at the Lamma Power Station. In 2019, approximately 121,000 cubic metres of rain water and plant processing water were collected for reuse.

To provide reliable and sustainable water supplies to meet customer demand, Northumbrian Water in the UK developed a water resource management plan (WRMP 2019) for the next 40 years, with future droughts, climate change and the need for environmental protection taken into account. The company also valued efficient use of water by reducing leakage from water pipes as well as advising customers on water conservation.

Water Consumption in Infrastructure Division ('000 m³)



Note:
The 2017 and 2018 figures were restated according to CKI Annual Reports 2018 and 2019.

7.6.3.4. Minimising Usage of Raw Materials

CKI aims to use less raw materials and allow full utilisation of the by-products generated in business operations.

In Hong Kong, Anderson Asphalt continued reducing asphalt material wastage by selling milled asphalt to subcontractors for material reuse and recycling and by conforming to ISO 14001: 2015 requirements.

HK Electric has been collecting its generation by-products such as ash and gypsum produced for beneficial industrial use, such as manufacturing of cement. In 2019, about 230,000 tonnes of ash and 70,000 tonnes of gypsum were collected for reuse by third parties.

Over 1,000,000 tonnes of industrial waste materials, such as by-products from coal-fired power generation and slag from copper smelter, have been recycled as raw materials in the Infrastructure division's cement manufacturing plants in Hong Kong and Mainland China. In 2019, the use of recycled materials exceeded 60% in the cement production in Hong Kong.

Due to the agreement in the Green Deal for bottom ash from Energy-from-Waste plants that, 100% of the granules must be used as "freely applicable building material" instead of being treated as an Isolation, Control, Maintenance ("ICM") material in 2020. AVR, together with specialised partners, has been working towards the objective: In 2019, over 50% of the minerals acquired from the bottom ash were freely applied without ICM.

In the UK, Northumbrian Water reused materials excavated from the ground during hole-digging operations as back fill, which substantially reduced the use of new virgin backfill material compared with past years.

Northern Gas Networks in the UK established a programme to inform and advise employees and contractors on the usage of recycled aggregates rather than virgin aggregates. The usage of virgin aggregates was set as a KPI and recorded regularly. During the past five years, there recorded a decrease by 78% in the annual usage of virgin aggregates and 6.1% of the virgin aggregate was used in reinstatement works in 2019.

7.6.3.5. Protecting Biodiversity and Habitats

CKI aims to minimise the impact and damage to biodiversity and habitats in its projects.

For any new project, Southern Water conducted a detailed ecological survey to assess wildlife living in the area with emphasis on sensitive or protected species. Northumbrian Water supports the Kielder Osprey Project, which saw a record return of Osprey to Northumberland in 2019. The species was recolonised in 2009.

Canadian Midstream Assets implemented a leading-edge spill response programme and developed a right of way environmental monitoring programme to maintain reclamation of linear developments without affecting land use and natural habitats. Rigorous soil, air, and groundwater monitoring programme were conducted at Midstream facilities to protect vital air and watersheds for future generations. To maintain healthy and functioning ecosystems, the company would identify wildlife and culturally sensitive areas and take actions during the planning period. Construction activities were scheduled to reduce risk of disturbance to wildlife during sensitive periods. To continuously support ecological functions and land use, procedures for lands reclamation after use included addressing potential contamination, re-contouring sites, replacing soil layers and re-establishing appropriate vegetation.

Northern Gas Networks in the UK completed 12 land remediation projects, with a further four projects to be completed by 2021.

7.6.4. Looking Forward

Subsidiaries of the Infrastructure division have set various targets and implementation plans regarding different topics of environmental management. Below are some examples demonstrating their determination in making their business operations environmentally-friendlier and building a green future for all the lives.

Air Emissions

- UKPN- decrease NOx emissions from fleet and generators by 33% by 2030.

GHG Emissions

- Wales & West Utilities - reduce GHG emissions by 10% over current price-control period from 2013 to 2021.
- ista - help customers/users reduce their GHG emissions by 10% by 2030 with a base year of 2010.

- UKPN - reduce GHG emissions by 20% by 2021.
- AVR - reduce GHG emissions by 55% by 2030 and achieve a reduction to 0 in 2050.

Energy Consumption

- ista - reduce annual energy consumption in Germany by 6.5% from 2016 to the end of 2020, and achieve a continuous improvement in energy efficiency of 1.3% on an annual average.
- UKPN - reduce energy use in top six buildings by 10% by 2021.

Water Usage and Pollution

- UKPN - reduce water consumption by 10-15% in top six buildings by 2021.

Waste Disposal

- UKPN - divert more than 90% of the waste from landfill and recycle more than 80% of waste from top six sites by 2021.

Biodiversity Protection

- UKPN - increase biodiversity value by up to 30% at 100 of its sites to actively contribute towards minimising species decline and promoting net-gain by 2021.
- Wales & West Utilities - achieve no net loss on designated projects between 2021 and 2026 and biodiversity net gain across by 2039.