

# ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

CK Infrastructure Holdings Limited (the “Company”) and its subsidiaries (the “Group”) as well as its business units present the Environmental, Social and Governance (“ESG”) Report (“Report”).

The scope of this Report covers the Group’s core businesses, including energy infrastructure, transportation infrastructure, water infrastructure, waste management, waste-to-energy, as well as infrastructure related businesses but excluding those acquisitions during the year, unless otherwise specified. This Report aims to provide an overview of the Group’s ESG performance and its representative initiatives for the year ended 31st December, 2017 (the “Reporting Period”), based on the ESG Reporting Guide under Appendix 27 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (“Reporting Guide”).

This Report has been organised into four sections focusing on environment, employment and labour practices, operating practices and the community. Key initiatives undertaken by the respective business units are featured in their relevant sections which the Group believes best demonstrate its commitments in generating sustainable values to its stakeholders.

## Approach to ESG and Reporting

The Group’s ESG philosophy is to create long-term value for its stakeholders that aligns with the growth and sustainability of its business and the environment it is in. The Group aspires to be a responsible corporate citizen and believes that transparency and accountability are important foundations for building the trust with its stakeholders.

As a leading player in the global infrastructure arena, the Group is cognizant of the significance of effective ESG practices and the importance of integrating ESG systems in key business decision-making. The Group tackles ESG issues both at the Group and business levels. While the Board oversees the direction for its ESG practices, the Group’s business units set up individual ESG programmes and regularly measure their performances to identify opportunities for improvement and create sustainable values for its stakeholders. The management will then confirm that appropriate and effective ESG risk management and internal control systems are in place.

## Stakeholder Engagement and Materiality Assessment

The Group engages its stakeholders from time to time through on-going communications and collect their views on the ESG aspects that they regard as relevant and important. Its key stakeholders include its employees, shareholders, customers, suppliers, the local community, professional institutions, non-governmental organisations and authorities. The Group maintains an open and transparent dialogue with its stakeholders through various channels including meetings, surveys, seminars and workshops. This Report details how the material ESG aspects identified based on the inputs of its key stakeholders are addressed.

For the purpose of meeting the requirements of the Reporting Guide, a working group comprised of members of 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 of the Company, along with designated personnel of Power Assets, Green Island Cement & Alliance Construction Materials, UK Power Networks, Northumbrian Water, Northern Gas Networks, Wales & West Gas Networks, Seabank Power, UK Rails, SA Power Networks, Victoria Power Networks, Australian Gas Networks, Wellington Electricity, EnviroNZ, Dutch Enviro Energy, Portugal Renewable Energy, Canadian Power, Park’N Fly, Australian Energy Operations and Husky Midstream, identifies and assesses material ESG aspects of the Group’s operations.

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An independent advisor has been retained to provide reporting advisory services to the Company and to assist with developing a structure, processes and practices for ESG reporting for its compilation of an ESG report in accordance with the Reporting Guide. With the assistance of the advisor, information was collected from the relevant parties of the above mentioned business units and departments of the Group. The information so collected was reported in the ESG report which has been reviewed by the advisor in the process. The management has confirmed that appropriate and effective ESG risk management and internal control systems are in place.

### ENVIRONMENT

The Group recognises its responsibility to the environment and the importance of reducing emissions and improving the efficiency in resource use.

#### Emissions

The Group's business units strive to minimise impacts to the environment through reducing air and greenhouse gas (GHG) emissions, waste and wastewater discharges.

##### *Air and Greenhouse Gas (GHG) Emissions*

Business units of the Group have taken various actions to reduce their air and GHG emissions.

In order to reduce carbon and other air emissions generated by electricity production operations, HK Electric has been working to optimise fuel mix by increasing the use of natural gas. This is to meet the tightening emission allowances set out by the Hong Kong Special Administrative Region Government. In 2017, HK Electric continued to meet the stipulated emissions allowances in all categories, and also worked with the government to agree new and more stringent emissions allowances from 2022 onwards. In addition, two new gas-fired generating units under construction will be equipped with the Selective Catalytic Reduction systems that serve to reduce nitrogen oxides ("NO<sub>x</sub>") emission levels.

In support of the New Zealand Government's principal climate change policy, the New Zealand Emissions Trading Scheme, EnviroNZ works to curb GHG emissions by converting part of the methane generated from its landfills to electricity. This helps the environment by achieving a higher percentage of landfill gas recovery and aids in electricity generation.

A major source of the Group's GHG emissions are the fugitive emissions produced during gas distribution processes. To reduce such emissions, a maintenance programme has been implemented in Canadian Power's Meridian plant. The programme diagnoses leakages from natural gas systems and repairs them on a timely basis to minimise the amount of fugitive GHG released into the atmosphere.

Dutch Enviro Energy has been running a pilot project to capture CO<sub>2</sub> from the flue gas of its waste-to-energy plant in Duiven. The project will remove an annual 50,000 tonnes of CO<sub>2</sub> from being released into the atmosphere, allowing captured CO<sub>2</sub> to be used productively, such as in horticulture.

In addition to reducing greenhouse emissions from the production processes, the Group also works to cut its carbon footprint by making its fleet greener and supporting sustainable transport. Alliance Construction Materials has been taking steps to modernise its mixer truck fleet, with 90% of the fleet comprising of EURO V-compliant vehicles. Wales & West Gas Networks continues to strengthen its fleet, with 95% of its vehicles being Euro V or Euro VI-compliant.

UK Power Networks provides incentives to purchase low emission vehicles for use as business cars. Furthermore, HK Electric supports widespread adoption of electric vehicles (“EV”) to improve roadside air quality. During the year, HK Electric established three new multi-standard quick charging stations and upgraded four existing standard charging stations. At the end of 2017, HK Electric operated 13 public charging stations covering every district on Hong Kong Island, offering free EV charging services until the end of 2018. HK Electric’s EV service team also provides technical advice to assist residential and commercial building owners in the installation of EV charging facilities. For air and GHG emissions performance, please refer to table below.

**Table 1: Air and GHG emissions performance of the Group’s core business units**

Environmental KPIs <sup>(Note 1)</sup>	Unit	2017
NO <sub>x</sub> emissions <sup>(Note 2)</sup>	tonne	5,649
SO <sub>x</sub> emissions <sup>(Note 2)</sup>	tonne	668
Particulate matter emissions <sup>(Note 2)</sup>	tonne	426
Total GHG emissions	tonne CO <sub>2</sub> e	9,778,614
Total GHG emissions intensity <sup>(Note 3)</sup>	tonne CO <sub>2</sub> e/HK\$	255
Greenhouse gas emissions (Scope 1) <sup>(Note 4)</sup>	tonne CO <sub>2</sub> e	7,464,392
Greenhouse gas emissions (Scope 1) intensity	tonne CO <sub>2</sub> e/HK\$	195
Greenhouse gas emissions (Scope 2) <sup>(Note 5)</sup>	tonne CO <sub>2</sub> e	2,314,222
Greenhouse gas emissions (Scope 2) intensity	tonne CO <sub>2</sub> e/HK\$	60

Notes:

- (1) Environmental data are calculated based on the Group’s equity interest on the respective Group’s core business units for the year ended 31st December, 2017.
- (2) Emission data from gaseous fuel consumption and/or from vehicles.
- (3) “Total GHG emissions intensity” equals to “Total GHG emissions” over total revenue contributed by the Group’s core business units, which is considered to be a more appropriate common intensity basis due to the various nature of Group’s core business units.
- (4) Scope 1 – Direct emissions from operations that are owned or controlled by the Group’s core business units.
- (5) Scope 2 – “Energy indirect” emissions resulting from the generation of purchased or acquired electricity, heating, cooling and steam consumed within the Group’s core business units.

### Waste

Waste management which includes avoiding, reusing, recycling and reducing waste before final disposal is adopted by businesses within the Group.

Northern Gas Networks has implemented an excavation spoil recycling programme which aims to limit the amount of excavated spoil sent to landfill to 8%. The programme raises awareness amongst employees and contractors about this target and educates them about methods to recycle spoil and the benefits of doing so. Each contractor in charge of mains replacement and reinstatement is required to provide monthly spoil disposal data identifying the amount of spoil sent to landfill. This data is subject to investigation and discussed during contract performance review meetings. Spoil disposal to landfill has been incorporated as a key KPI for contractors and is measured and reported on a regular basis.

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It is a major objective of the Group's members to be able to recycle waste into useful materials. Northumbrian Water continues to use sewage sludge for energy (biogas) generation. Biogas produced is either used for electricity generation or converted into biomethane for injection to the UK gas grid. This not only reduces the residual waste produced, but also makes waste suitable as a land fertiliser.

HK Electric has been collecting ash and gypsum produced for industrial use, such as manufacturing of cement. In 2017, about 235,000 tonnes of ash and 61,000 tonnes of gypsum were collected for reuse by third parties.

As part of its gas mains replacement programme, Northern Gas Networks installs more than 500 km of plastic gas pipes of varying dimensions with their associated fittings. A certain amount of this plastic pipe is wasted as part of the installation process. To avoid wasted pipes being disposed to landfill, Northern Gas Networks takes part in a plastic pipe waste recycling scheme and have installed dedicated recycling bins in workplaces to encourage recycling of the pipes. During 2017, approximately 140,000 kg worth of waste plastic pipe was recycled.

### *Wastewater*

Businesses within the Group handle wastewater with care. In 2017, EnviroNZ commissioned a reverse osmosis leachate treatment plant at its Hampton PARRC Landfill. This process recovers high quality water from landfill leachate by treating the leachate using reverse osmosis technology, a type of purification technology which removes contaminants to make the treated water fit for reuse or direct discharge to the environment. Furthermore, Canadian Power, has a closed-loop system in the Husky Upgrader project at Meridian Power Station which achieves zero discharge of wastewater to the environment. Seabank Power, on the other hand, has strengthened its monitoring of wastewater quality including pH, temperature, biochemical oxygen demand and heavy metals to ensure that the treated effluents meet discharge standards. For waste treatment performance, please refer to table below.

**Table 2: Waste produced by the Group's core business units**

<b>Environmental KPIs</b> <sup>(Note 6)</sup>	<b>Unit</b>	<b>2017</b>
Total hazardous waste produced <sup>(Note 7)</sup>	tonne	<b>105,728</b>
Total non-hazardous waste produced	tonne	<b>496,761</b>

Notes:

(6) Please refer to Note 1 above.

(7) Hazardous wastes are those defined by relevant national regulations applicable to the relevant Group's core business units.

### **Use of Resources**

The Group's businesses endeavour to optimise the use of resources, including energy, water and other materials and have initiated their own resource efficiency programmes that align with their respective business natures.

#### *Energy*

Alliance Construction Materials has an ISO50001-certified energy management system in place to guide target setting to encourage energy saving. Furthermore, Green Island Cement focuses on improving equipment availability and utilisation in order to reduce energy wastage.

Northern Gas Networks has implemented a low carbon gas technology which enhances energy efficiency in the pre-heating process to prevent gas from freezing when it moves from high pressure networks to lower pressure networks. The new method is expected to save more energy as compared to traditional boiler packages and water bath heaters. Two alternative technologies, Low Pressure Steam and Thermo Catalytic Systems, have been identified and piloted alongside existing technologies across 12 of Northern Gas Networks' sites.

To be able to source cleaner alternative energy, SA Power Networks has begun installing solar PV on depots and buildings. Portugal Renewable Energy and PRC wind farms continue to contribute to the Group's commitment to a higher ratio of renewable energy in its asset mix.

The Group also supports renewable energy transmission. Australian Energy Operations constructs, owns and operates reliable transmission links that transports clean, renewable power from windfarms to power grids.

**Table 3: Energy consumption of the Group's core business units**

Environmental KPIs <sup>(Note 8)</sup>	Unit	2017
Total energy consumption	'000 kWh	<b>29,905,031</b>
Total energy consumption intensity <sup>(Note 9)</sup>	kWh/HK\$	<b>0.78</b>
Total direct energy consumption	'000 kWh	<b>25,442,074</b>
Total direct energy consumption intensity	kWh/HK\$	<b>0.66</b>
Gasoline/Petrol	'000 kWh	<b>36,619</b>
Diesel	'000 kWh	<b>464,942</b>
Gas (exclude towngas and natural gas)	'000 kWh	<b>4,235</b>
Natural gas	'000 kWh	<b>10,268,616</b>
Other fuels	'000 kWh	<b>14,667,662</b>
Total indirect energy consumption (Electricity)	'000 kWh	<b>4,462,957</b>
Total indirect energy consumption intensity	kWh/HK\$	<b>0.12</b>

Notes:

(8) Please refer to Note 1 above.

(9) "Total energy consumption intensity" equals to "Total energy consumption" over total revenue contributed by the Group's core business units, which is considered to be a more appropriate common intensity basis due to the various nature of the Group's core business units.

### Water

Business units have also worked to conserve water and promote water efficiency through various initiatives in their operations.

HK Electric has been collecting rain water and plant processing water for reuse at the Lamma Power Station. About 112,000 m<sup>3</sup> of rain water and plant processing water were collected for reuse during 2017. Green Island Cement and its subgroups have also recycled wastewater from production and storm water for process cooling, thus minimising the amount of freshwater extracted. For water consumption performance, please refer to table below.

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**Table 4: Water consumption of the Group's core business units**

Environmental KPIs <sup>(Note 10)</sup>	Unit	2017
Water consumption <sup>(Note 11)</sup>	'000 m <sup>3</sup>	<b>38,634</b>
Water consumption intensity <sup>(Note 12)</sup>	m <sup>3</sup> /HK\$	<b>1,008</b>

Notes:

(10) Please refer to Note 1 above.

(11) Annual water consumption by taking measurements at the source of water abstraction (direct), or bills or meter readings (indirect).

(12) "Water consumption intensity" equals to "Water consumption" over total revenue contributed by the Group's core business units, which is considered to be a more appropriate common intensity basis due to the various nature of the Group's core business units.

### *Material*

Alliance Construction Materials reuses the reclaimed aggregates from concrete waste with an average of two truckloads of being delivered to Tuen Mun Aggregate Depot for reuse in road base products.

The cement production business of the Group in Hong Kong has increased the use of recycled materials from 43% to 54% since 2015. Over one million tonnes of industrial waste materials, such as byproducts from coal-fired power generation, slag from copper smelter, crush rock fines from metallurgy grade limestone production and waste glass, have been recycled as raw materials for the Group's cement manufacturing business at its plants in Hong Kong and Mainland China.

**Table 5: Packaging material used by the Group's core business units**

Environmental KPIs	Unit	2017
Total packaging material used for finished products (Paper) <sup>(Note 13)</sup>	tonne	<b>4,489</b>

Note:

(13) This KPI is most relevant to the infrastructure related businesses of the Group.

### **The Environment and Natural Resources**

Across the Group, a number of individual operations continue to identify, assess and manage potentially adverse environmental impacts including the protection of important habitats and the natural environment.

Husky Midstream stewards the land in its care, from a project's planning stage through to the asset's retirement. Potential impacts are identified so they can be avoided, minimised or mitigated, and the land is ultimately remediated and reclaimed.

## **Regulatory Compliance**

The Group is not aware of any material non-compliance with laws and regulations relating to air and GHG emissions, discharges into water and land, and generation of hazardous and non-hazardous waste that have a significant impact on the Group during the Reporting Period.

## **EMPLOYMENT AND LABOUR PRACTICES**

The Group together with its core business units have over 26,000 employees round the world. The Group believes people are its most important asset. Recruiting, engaging and retaining talent are fundamental for the Group to remain ahead of its competition. The belief in talent management is demonstrated through the merit-based evaluation mechanism, competitive remuneration and inclusive work environment adopted in business units across the Group. In 2017, the turnover rate of the Group together with its core business units was 7.84%.

Wales & West Gas Networks administers a flexible benefits scheme that allows employees to choose alternative benefits alongside the standard benefits package.

Recognising the importance of a work-life balance to a motivated and productive workforce, business units in the Group encourage their employees to maintain reasonable working hours. EnviroNZ has installed tracking devices into trucks to alert drivers if they have driven a certain amount of hours consecutively; this is to safeguard the well-being of the drivers. UK Rails supports National Work Life to raise awareness on work-life balance whilst Wellington Electricity considers employees' requests on flexible working hours in order to enable employees' work-life balance. Competitive paid leave entitlements are also offered to the employees.

Programmes have been initiated at the business unit level to recruit people from higher education institutions and to promote health and wellbeing of their employees.

The Group values employees' views and its business units have established various communication channels, such as seminars and workshops, to facilitate open dialogues with the employees, and to exchange views and collect feedback.

Business units of the Group have received awards as recognition for their achievements in different areas of employment practice. For awards in the employment practice that have been obtained by business units of the Group during the year, please refer to pages 22 to 25 of this Annual Report.

## **Health and Safety**

The Group recognises the importance of health and safety of employees at work and business units have established individual health and safety management programmes for such purpose.

Dutch Enviro Energy has developed a robust Health, Safety and Environment management programme. Sickness ratio and injury frequency rate are monitored closely. Upon accidents, relevant information is recorded into a database to produce a monthly dashboard that is available for senior management and shareholders to reference health and safety performance. Health and safety topics are at the top of the agenda in production meetings, senior meetings, and in the board of directors meetings.

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### Training and Development

The Group believes in talent investment and strives to realise the potential of employees through development programmes. It hopes to inspire employees to pursue further knowledge and encourage them to undertake learning. Trainings are provided at the business unit level to suit specific business needs and support the day-to-day job functions. In 2017, more than 571,000 training hours were provided to the employees of the Group and its core business units; the percentage of employees trained reached 88.15%.

The highway toll bridge employees in China Infrastructure participated in regular training to keep themselves updated with highway regulations. First aid training has also been provided to any interested employee of Park'N Fly and UK Rails has also offered continued professional development training to its employees.

### Labour Standards

The Group adheres to fair employment practices and promotes diversity and equal opportunity in its recruitment and promotion. The Group has zero tolerance to harassment and discrimination of any form. Employees are hired and selected based on their merits, regardless of their race, colour, sex or religious belief. The Group prohibits the use of child and forced labour in its businesses across the world. Mechanisms have been established by business units to prevent unethical practices.

Northumbrian Water has published their statement on Modern Slavery. In addition, they have briefed their procurement and legal teams on slavery and trafficking, and related requirements of the Modern Slavery Act. The company has also launched a responsible procurement supply charter, where contracted suppliers also have to be committed to the relevant Code of Conduct and meet all ethical and statutory obligations.

### Regulatory Compliance

The Group is not aware of (i) any material non-compliance with laws and regulations relating to employment and labour practices, occupational health and safety that have a significant impact on the Group; or (ii) any incident that has a significant impact on the Group relating to the use of child or forced labour during the Reporting Period.

## OPERATING PRACTICES

### Supply Chain Management

Businesses within the Group work with suppliers to make them aware of the Group's commitment to sustainability.

#### *Sourcing Responsibility*

The Group supports sustainable procurement and its business units have incorporated environmental and social responsibilities into their procurement processes. Suppliers are required to take into consideration sustainability performance.

UK Rails conducts a Quarterly Supplier Performance Review and Project Review for its suppliers. Alternated between Eversholt office and suppliers facility, the Supplier Performance pack includes a relationship indicator, delivery Key Performance Indicators, safety and quality measures, open item lists and more. This pack helps improve outcomes of safety and quality performance, build better business-to-business relationships and facilitate an honest, open dialogue with suppliers on a range of performance indicators.



### *Engaging Suppliers*

Business units of the Group exchange and share knowledge with suppliers about their procurement practices and requirements.

Australian Gas Networks engages its key contractor for distribution and transmission pipeline operations and management services and incentivises them to improve productivity and efficiency in a consistent and sustainable manner.

UK Power Networks attended and presented to the Achilles Live Event in London. The event facilitated the interaction between the buying community and suppliers. In May 2017, UK Power Networks organised an event with its Original Equipment Manufacturers to introduce a new Supplier Relationship Management (“SRM”) framework approach with an active policy reinforcing the importance of Health & Safety in all aspects of work activity including equipment supply & installation and of seeking and sharing innovation, technological advances and continuous improvement.

A SRM framework has been introduced across business units including Victoria Power Networks.

### **Product Responsibility**

Business units of the Group strive to continuously enhance customer experience of their services and products through seeking feedback from customers to improve their operations.

### **Product Reliability and Safety**

Effort and resources have been dedicated by the Group’s business units in upholding safety procedures in the course of their daily operations.

### *Customer Experience*

Business units of the Group provide different ways to communicate and engage with customers and collect customer feedback.

Northumbrian Water has a well-established defined Code of Practice relating to complaints made by customers. The document provides clear guidance to customers regarding the complaint process and options they could choose from besides making a complaint. The company is also bounded by the Guaranteed Service Standards in a number of their service areas that have positive impact on customer experience excellence.

Park’N Fly has also adopted a policy which requires immediate inspection to be carried out when customer reports a damaged vehicle case. If the case is proven to be the company’s fault, follow up actions have to be conducted within one (1) business day.

### *Customer Protection*

The Group recognises the importance of personal data protection and relevant business units of the Group safeguard data privacy and provide transparency on information relating to their products and services. The relevant business units have established data and privacy protection procedures which have been communicated to employees through internal policy and training. Collected personal data is treated as confidential and kept securely, accessible only by authorised personnel.

### **Regulatory Compliance**

The Group is not aware of any incidents of material non-compliance with laws and regulations concerning health and safety, advertising, labelling and privacy matters relating to products and services and methods of redress, that have a significant impact on the Group during the Reporting Period.

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### Anti-Corruption

The Group has zero-tolerance on any forms of bribery, corruption and fraud. Policies and measures against corruption and other malpractices are adopted by business units across the Group. Monitoring and management control systems have been developed 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 whistle-blowing mechanisms. Reports raised may be investigated internally by the Audit Committee or other departments of the Company delegated by the Audit Committee.

### Regulatory Compliance

The Group is not aware of any material breach of laws and regulations relating to bribery, extortion, fraud and money laundering that have a significant impact on the Group during the Reporting Period.

## COMMUNITY INVESTMENT

The Group's businesses support the development of communities in which they operate.

### Supporting Education

Plant tours were arranged with the aim to further educate the community on the waste-to-energy process, and Dutch Enviro Energy's role in the community.

### Helping the Underprivileged

Wales & West Gas Networks has formed a new partnership with Fire & Rescue Services in areas it has operations in order to improve customers' knowledge of carbon monoxide ("CO"). To better assist disadvantaged, underprivileged customers, these customers were provided with complementary CO alarms during Home Safety Visits. In order to measure the effectiveness of the initiative on communities, surveys were carried out during the year. The subsequent results were encouraging, during 2017 over 2,300 surveys were completed and the initiative has contributed to a 31% positive increase in awareness of CO as a result of the questionnaires completed.

Furthermore, Green Island Cement has dedicated itself to improving the efficiency of travel for villagers in Mainland China. To do so, Green Island Cement has provided villages with cement and gravel to assist in road construction, thus allowing for an easier commute between locations.

### Conserving the Environment

Northumbrian Water works in partnership with Essex & Suffolk Water, the Essex Wildlife Trust and the Bee Improvement and Bee Breeders Association to establish native British black bees at Abberton Reservoir – a species which was, until recently, thought to be extinct. Three beehives have been introduced at Abberton Reservoir, populated with native black queen bees obtained from a reputable source. The objective of this project is to increase the population of the British black bees over the span of the next three years, and thus, promote biodiversity. In the first year the aim is for 40 to 50 new native queen bees to be established from the hives at Abberton. Presentations have already been made to local organisations and beekeepers, and the aim is to provide them with native queen bees in order to establish new colonies within an initial three mile radius. This will then expand to a six and nine mile radius in year two and three of the project. Throughout the progression of the project, other groups of likeminded organisations and beekeepers are also encouraged to participate, allowing the initiative to expand further over an increasing area.