Welcome to your CDP Climate Change Questionnaire 2020

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Incitec Pivot Limited (IPL) is a global diversified industrial chemicals company that supplies explosives, industrial chemicals, fertilisers and related services to the mining, infrastructure & construction, chemicals and agriculture industries. IPL has extensive operations throughout Australia, the United States, Canada, Mexico, Turkey and Indonesia, including over 30 manufacturing plants, scores of distribution centres and well-established channels to market. The Company employs over 4,800 staff worldwide, including almost 2,000 staff in Australia and over 2,400 staff in North America. IPL manufactures a range of fertiliser inputs and products including ammonium phosphates, ammonia, urea, sulphuric acid and superphosphates at five manufacturing sites across eastern Australia and is the only manufacturer of ammonium phosphates and urea in Australia.

Through the Incitec Pivot Fertilisers brand (IPF) IPL is Australia's largest supplier of fertilisers, dispatching approximately two million tonnes each year for use in the grain, cotton, pasture, dairy, sugar and horticulture industries. It operates through a comprehensive network of distributors who supply the product to Australian farmers. IPL has a long-term commitment to investment in soil nutrition research and its Nutrient Advantage laboratory is industry accredited. As a leading provider of nutrition advice to farmers and customers, IPL promotes the sustainable use and safe handling of its fertiliser products to customers and farmers.

Through the Dyno Nobel brand, IPL is the second largest supplier of explosives in Australia and is a market leader in North America. Dyno Nobel branded products include a complete range of commercial explosives including ammonium nitrate, bulk explosives, packaged emulsions and dynamite as well as a range of initiating systems. Services provided include expert technical consulting to customers such as mining companies and their suppliers, quarries and companies supporting the construction industry. In addition, IPL manufactures various industrial chemical products used in water treatment, process manufacturing and other industrial applications.

IPL recognises that building a sustainable future requires the sustainable management of the production of infrastructure, food, clothing, shelter and energy that people need every day. As a manufacturer and supplier of fertilisers, which are used to grow more food and fibre on existing land, and explosives products, which are used for mining, construction and quarrying, we recognise that our role in value creation relates directly to several UN Sustainability Goals, including 'Responsible Consumption and Production', 'Decent Work and Growth' and the production of food for a growing population ('Zero Hunger').

We also recognise the need to balance our economic performance with our environmental and social responsibilities. Those responsibilities include being a good corporate citizen and operating ethically. They include ensuring good governance in our day-to-day business activities and behaving with honesty and integrity in our interactions with communities, employees, customers, and the environment.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	October 1, 2018	September 30, 2019	Yes	3 years

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Australia
Canada
Mexico
Turkey
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

AUD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Bulk inorganic chemicals

Ammonia
Fertilizers
Nitric acid

Other chemicals

Other, please specify

Ammonium nitrate (explosives)

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	The Company's highest governing body, the Board of Directors, is responsible for charting the direction, policies, strategies & financial objectives of IPL. Day-to-day management of Company affairs is formally delegated to the Managing Director & CEO, and her direct reports form the Executive Team. Committees of the Board with additional responsibility for specific issues related to climate change include the HSEC Committee of the Board and the Audit & Risk Management Committee (ARMC). The Board Chairman is a member of the ARMC. During 2019, the Board Charter and the ARMC Charter were updated to formally and specifically assign oversight of the IPL Climate Change Policy and climate change-related risks and opportunities to IPL's Directors. The Charter of the ARMC states that the ARMC will: (c) review and monitor, by receiving reports from management, risk implications from new and emerging risks, climate change, organisational change, major initiatives, changes in the economic and business environment and other factors relevant to IPL's future strategy and IPL's projected business performance; (d) review and monitor, by receiving reports from management, IPL's climate-related financial risks and opportunities, as identified through assessment against future climate-related scenarios that are updated at least every three years, together with management's responses to these assessments. The Board and ARMC charters can be downloaded at https://www.incitecpivot.com.au/about-us/about-incitec-pivot-limited/corporate-governance
Director on board	The Company's highest governing body, the Board of Directors, is responsible for charting the direction, policies, strategies & financial objectives of IPL. Day-to-day management of Company affairs is formally delegated to the Managing Director & CEO, and her direct reports form the Executive Team. Committees of the Board with additional responsibility for specific issues related to climate change include the HSEC Committee of the Board and the Audit & Risk Management Committee (ARMC). The Board Chairman is a member of the ARMC. During 2019, the Board Charter and the ARMC Charter were updated to formally and specifically assign oversight of the IPL Climate Change Policy and climate change-related risks and opportunities to IPL's Directors. These charters can be downloaded at https://www.incitecpivot.com.au/about-us/about-incitec-pivot-limited/corporate-governance
Chief Executive Officer (CEO)	The Company's highest governing body, the Board of Directors, is responsible for charting the direction, policies, strategies & financial objectives of IPL. Day-to-day management of Company affairs is formally delegated to the Managing Director & CEO, and her direct reports form the Executive Team.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Overseeing major capital expenditures, acquisitions and divestitures	The IPL Climate Change Policy was adopted by the Board during 2019, and the IPL Board Charter and Charter of the Audit and Risk Management Committee were updated to formally enshrine Directors' roles in relation to the strategic management and oversight of climate change-related issues. The Charter of the Board states that the Board will: "(c) Review and approve, at least annually, Incitec Pivot's climate change management strategy, strategic business opportunities and risks related to climate change, and potential targets and performance objectives". In addition, climate-related issues are integrated into 'reviewing and guiding major plans of action' and 'decision making processes regarding major capital expenditures, acquisitions and divestitures'. This is due to both the nature of our markets (mining, quarry & construction and agriculture, which can be impacted by extreme weather events) and the nature of our main manufacturing process which requires long term access to both gas supply and large volumes of high quality fresh water (for cooling purposes), as well as the management of the physical impacts of extreme weather events. Due to the use of gas as a feedstock, the manufacturing process is also carbon intensive. For these reasons, investment decisions regarding long term capital projects take into account an assessment of likely carbon regulation, changing market forces and market sentiment (which can influence regional gas and water supplies) and possible impacts on customer demand from either market changes or extreme weather events.

Scheduled – some meetings	Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	Due to the significant proportion of energy cost in our manufacturing processes, energy efficiency/intensity (and therefore greenhouse gas emissions intensity) has been a major focus in our manufacturing operations for many years. KPIs associated with energy intensity are therefore integrated into our performance metrics at many levels of the organisation. For example, see table on p. 32 of the IPL 2018 Annual Report, which summarises the Strategic Initiatives Condition component for the LTI 2015/18, the LTI 2016/19 and the LTI 2017/20. These include an energy efficiency KPI and a manufacturing plant uptime KPI which support (and supported) the 2017, 2018, 2019 and 2020 IPL global greenhouse gas intensity reduction targets, set against a 2015 baseline.
Scheduled – some meetings	Reviewing and guiding risk management policies	The IPL Climate Change Policy was adopted by the Board during 2019, and the IPL Board Charter and Charter of the Audit and Risk Management Committee were updated to formally enshrine Directors' roles in relation to the strategic management and oversight of climate change-related issues, which are integrated into IPL's risk management processes and reported on in the Principal Risks section of the IPL Annual Reports. These included additional risks identified by a comprehensive risk and opportunity analysis conducted in 2018 using two future climate-related scenarios (a 2 Degree scenario and a 4 Degree scenario). These additional climate-related risks were reviewed in detail by the Audit and Risk Management Committee of the Board and formally assigned to the ET for management. Risk controls and risk control owners were identified in 2019. Risk identification and management strategies are reported to the Board through the established risk management reporting process.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	As important matters arise
Chief Financial Officer (CFO)	Both assessing and managing climate-related risks and opportunities	As important matters arise
Chief Risks Officer (CRO)	Both assessing and managing climate-related risks and opportunities	As important matters arise
Environment/ Sustainability manager	Both assessing and managing climate-related risks and opportunities	As important matters arise

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Company's highest governing body, the Board of Directors, is responsible for charting the direction, policies, strategies and financial objectives of the Company. The Board operates in accordance with the principles set out in its Board Charter. Day-to-day management of Company affairs and the implementation of the corporate strategy and policy initiatives are formally delegated to the Managing Director & CEO, and her direct reports form the Executive Team. Committees of the Board with additional responsibility for specific issues related to climate change include the HSEC Committee of the Board and the Audit and Risk Management Committee of the Board (ARMC). During 2019, the IPL Climate Change Policy was adopted by the Board and the IPL Board Charter and Charter of the ARMC were updated to formally enshrine Directors' roles in relation to the strategic management and oversight of climate change-related issues.

The Executive Team (IPL management) is responsible for the overall design, implementation, management and coordination of the Group's commercial strategy and risk management & internal control system, including the risks and opportunities related to climate change. The Executive Team member with formal responsibility for managing climate change-related financial risks is the CFO. The Executive Team member with responsibility for commercial strategy

(including in the context of IPL's identified climate change-related risks and opportunities) is the ECO. Both the CFO and ECO are members of the IPL Corporate Strategy Team, along with the CEO. A diagram describing the governance and organisational structure of the company as it relates to the management of climate change is included on page 20 of the 2019 IPL SUSTAINABILITY REPORT.

During 2019, the Executive Team received reports from, and gave management directives to, several Finance and Corporate Strategy team members who assist the ET in managing specific climate change-related issues. These roles are the Corporate Sustainability Manager (CSM), the Chief Risk Officer (CRO) and the Vice President Strategic Projects. While each of these positions reports directly or indirectly to the CEO, CFO or ECO, each also reports to the Executive Team and the IPL Board (either directly or through committees of the Board) throughout the year. The responsibilities of these three positions in relation to climate change are described below:

1. The Corporate Sustainability Manager (CSM) manages the global IPL data base and monitors the energy use, greenhouse gas emissions, water use and discharge of the Company globally (including the management of annual third party carbon and energy audits in Australia and the annual completion of the WRI Aqueduct Water Tool) and engages with site managers and energy engineers regarding site based opportunities for reduction target setting, developments in carbon regulation, and opportunities and applications for energy efficiency and carbon reduction grants. The CSM also engages with external and internal research and development teams on new technologies and products being developed for customers, as well as engaging directly with government departments on the development of carbon regulation in Australia, while monitoring developments in international legislation on carbon and international carbon markets.

2. The Chief Risk Officer (CRO) manages risk, including climate-related financial risks and opportunities (see the Principal Risks section of the 2019 IPL Annual Report, which discusses those climate-related financial risks identified as 'Principal Risks'). The CRO also reviews the WRI Aqueduct Water Tool completed each year by the CSM.

3. The Vice President Strategic Project Development is a specialist engineer who is responsible for IPL's decarbonisation strategy as it relates to internal manufacturing (IPL's Scope 1 and 2 emissions), including the investigation and implementation of GHG reduction projects.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Corporate executive team	Monetary reward		Executive remuneration for members of the Executive Team includes non-financial performance measures relating to Business Excellence, productivity and plant uptime, specifically: "• For LTI 2015/18 and LTI 2016/19 – Plant uptime measured across specified manufacturing plants, with target performance at the end of the performance period to be at 75th percentile (which reflects world class performance for ammonia and ammonium phosphate plants globally) adjusted for plant age." This targeted uptime/reliability reduced gas use per tonne of product produced, and supports IPL's 2020 global greenhouse gas emissions targets, which are global emissions intensities of 2.00 tCO2e and 0.4 tCO2e per tonne of ammonia and nitric acid produced respectively by 2020. See the right hand column of the table on page 32 (page 44 of the pdf) of the 2018 IPL Annual Report at https://investors.incitecpivot.com.au/static-files/ce321e28-7ae7-4bfa-af75-75453f087dc4
Chief Executive Officer (CEO)	Monetary reward		Executive remuneration for members of the Executive Team includes non-financial performance measures relating to Business Excellence, productivity and plant uptime, specifically: "• For LTI 2015/18 and LTI 2016/19 – Plant uptime measured across specified manufacturing plants, with target performance at the end of the performance period to be at 75th percentile (which reflects world class performance for ammonia and ammonium phosphate plants globally) adjusted for plant age."

			This targeted uptime/reliability reduced gas use per tonne of product produced, and supports IPL's 2020 global greenhouse gas emissions targets, which are global emissions intensities of 2.00 tCO2e and 0.4 tCO2e per tonne of ammonia and nitric acid produced respectively by 2020. See the right hand column of the table on page 32 (page 44 of the pdf) of the 2018 IPL Annual Report at https://investors.incitecpivot.com.au/static-files/ce321e28-7ae7-4bfa-af75-75453f087dc4
Energy manager	Monetary reward		95% of the company's emissions related to the use of gas as a feedstock and an energy source. Energy is a significant material cost to the business and energy use is closely managed as part of the corporate financial management. Energy efficiency/intensity targets underpin IPL's greenhouse gas intensity reduction targets.
Environment/Sustainability manager	Monetary reward		95% of the company's emissions related to the use of gas as a feedstock and an energy source. Energy is a significant material cost to the business and energy use is closely managed as part of the corporate financial management. Energy efficiency/intensity targets underpin IPL's greenhouse gas intensity reduction targets.
Facilities manager	Monetary reward		95% of the company's emissions related to the use of gas as a feedstock and an energy source. Energy is a significant material cost to the business and energy use is closely managed as part of the corporate financial management. Energy efficiency/intensity targets underpin IPL's greenhouse gas intensity reduction targets.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	1	3	Assessed annually and addressed in the 'Principal Risks' section of the IPL Annual Reports. IPL has historically made use of a three-year commodity cycle to define 'short-term'.
Medium-term	3	6	Relates to two cycles of the three-year commodities cycle. Medium-term risks associated with climate change were initially assessed in 2010 by an executive cross functional committee established for this specific purpose as part of IPL's Sustainability Strategy, which was formed and approved by the Board in that year. During 2018, IPL engaged a specialist third party to conduct a detailed assessment of the medium-term risks and opportunities associated with climate change using two future climate related scenarios: a 2-degree scenario and a 4-degree scenario.
Long-term	6	22	Long-term risks associated with climate change were initially assessed in 2010 by an executive cross functional committee established for this specific purpose as part of IPL's Sustainability Strategy, which was formed and approved by the Board in that year. During 2018, IPL engaged a specialist third party to conduct a detailed assessment of the long-term risks and opportunities associated with climate change using two future climate related scenarios: a 2-degree scenario and a 4-degree scenario. The scenarios used longer term horizons to 2040.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

IPL defines a 'material' financial impact as AUD$20 million or more. In addition to this financial threshold, IPL considers risks and management strategies based on an assessment of likelihood, with lower consequence risks that have a higher likelihood of occurring receiving an elevated level of management attention. IPL's risk management process also reviews the appropriateness of controls and management strategies for climate related risks with impacts of less than AUD$20 million.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Every three years or more

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

In addition to IPL's comprehensive annual risk management process, the physical and transitional risks and opportunities associated with climate change were initially assessed by a high-level cross functional committee which operated in 2010 for this specific purpose as part of IPL's Sustainability Strategy, which was formed and approved by the Board that year. Physical risks identified at that time include, but are not limited to, impacts from extreme weather events on our farming and mining customers, our assets and our supply chain (including logistics). Impacts relating to transitional risks identified at that time include, but are not limited to, compliance, regulatory and legal risk, reputational risk, and changing market sentiment impacting on our markets. The opportunities identified are associated with the development of new products, including our enhanced efficiency fertilisers which aim to reduce emissions of N2O (a potent greenhouse gas) and energy efficient explosives technologies which aim to reduce greenhouse gas emissions by using less fossil fuel energy to displace overburden and access ore. These risks and opportunities have been monitored, reviewed and reported on annually in our CDP reports, and the WBCSD Water Tool (now the WRI Aqueduct Water Tool) was completed annually and is reviewed by the Chief Risk Officer.

With the release of the G20 Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) report, IPL recognised the need to review our processes in assessing and managing climate change related financial risks and opportunities, and in formulating the related disclosures which inform our investors. In 2018, IPL engaged a specialist third party to create two detailed climate-related future scenarios, to assess the financial risks and opportunities for IPL against these, and to review IPL's risk processes with a view to including the longer-term risk horizons associated with climate change. The 2 Degree and 4 Degree future scenarios developed specifically for IPL used the following references:
• The International Energy Agency World Energy Outlook 2017 and 2018 and associated scenarios;
• The Bloomberg New Energy Finance New Energy Outlook 2018 (BNEF NEO);
• The Climate Futures Tool developed by the CSIRO and the Australian Bureau of Meteorology;
• The Climate Explorer Tool developed by the National Oceanographic and Atmospheric Association (NOAA), the WRI Aqueduct Tool developed by the World Resources Institute;
• Inputs from the Intergovernmental Panel on Climate Change (IPCC AR5);
• Inputs from the Louisiana Coastal Protection and Restoration Authority; and
• Inputs from peer reviewed scientific journals from sources including the Proceedings of the National Academy of Sciences of the United States of America (PNAS).

The scenarios each describe how physical climate change and efforts to reduce emissions would impact on areas including carbon pricing and carbon market development, the overall economy, the development of technology, people's consumption patterns and social structures, the physical environment, energy and power, agriculture, mining, infrastructure and transport, with the risk assessments considering the financial risks and opportunities for IPL in these areas under each scenario. The scenario based risk assessments also considered the physical and transitional impacts

on IPL's 13 major manufacturing operations on an individual and detailed basis.

The Charter of the IPL Board's ARMC states that the ARMC will
(c) review and monitor, by receiving reports from management, risk implications from new and emerging risks, climate change, organisational change, major initiatives, changes in the economic and business environment and other factors relevant to IPL's future strategy and IPL's projected business performance; and
(d) review and monitor, by receiving reports from management, IPL's climate-related financial risks and opportunities, as identified through assessment against future climate-related scenarios that are updated at least every three years, together with management's responses to these assessments.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	The current Australian Federal Government 'Direct Action' policy includes IPL facilities under the ERF Safeguard Mechanism
Emerging regulation	Relevant, always included	IPL has manufacturing facilities across various geographical locations that may be impacted by regulatory changes aimed at reducing the impact of, or otherwise addressing, climate change. Any changed regulation could result in an increase to the cost base or operating cost of these plants, and it may not be possible to alter sales prices to offset these cost increases. This includes, but is not restricted to, any regulations relating to reducing carbon emissions. Alternatively, any such regulatory changes may potentially impact the ability of these plants to continue functioning as currently operated. This risk would be heightened if regulatory changes are implemented inconsistently across regions or countries so that IPL's facilities (principally located in Australia and North America) are impacted by regulatory changes while manufacturing facilities of competitors operating in other jurisdictions are less impacted. Carbon pricing currently applies in Australia, and under a 2-degree scenario, rapid action to limit climate change would include a global carbon price by 2020 (short-term risk: 1-3 years). Carbon pricing would increase operational costs as well as costs to transport products, which could impact until 2025, when most shipping options would be retrofitted with zero or low carbon mobility options (e.g. hydrogen). The transition to a global carbon price may give rise to a period of volatility where IPL would not be able to pass through the immediate carbon costs to customers, who may choose to source products more locally where available to avoid these carbon

		costs. However, well designed carbon pricing schemes may also provide opportunities to leverage grants to assist with transitioning to low carbon technologies.
Technology	Relevant, always included	In the 2 Degree future scenario developed for IPL, the global economic and political environment is highly supportive of investment, deployment and trade of no and low carbon technologies, including in transport, energy, agriculture and new infrastructure builds, whereas in the 4 degree scenario, many regions start to focus on adaptation technologies, especially related to food and water security, and defence related to the protection of these resources. IPL is currently highly dependent on the availability of affordable natural gas, both as a feedstock for hydrogen and as a fuel source. IPL continues to monitor developments in the renewables and low carbon energy space, including solar hydrogen (making use of solar energy to manufacture hydrogen from water) production.
Legal	Relevant, always included	A range of legal implications related to climate change are considered, including regulations and carbon pricing.
Market	Relevant, always included	The impacts of climate change on IPL's major markets (mining, quarry & construction, and agriculture) are considered in some detail, and include not only the direct acute and chronic physical impacts, but also the indirect impacts associated with the expected trends of increased recycling of metals, changes in mining trends away from coal towards the minerals required for new technologies, changes in crop growing regions and impacts on global trade and regions as described in the Climate Risk Index (CRI). See 'Risks & Opportunities Associated with Climate Change' on pages 14-17 (page 8-9 o the pdf) of the 2019 IPL GRI Index and data supplement to the 2019 Sustainability Report at https://www.incitecpivot.com.au/~/media/Files/IPL/Sustainability/2019%20IPL%20Sustainability%20Report/2019%20IPL%20GRI%20Index%20and%20Data.pdf
Reputation	Relevant, sometimes included	Reputational risks relate to IPL's reporting of the management of climate change related issues.
Acute physical	Relevant, always included	Impacts on Operations (including supply chain): Some of IPL's manufacturing plants are located in areas that are susceptible to extreme weather events, such as hurricanes, tropical storms and tornadoes. An increase in the severity and/or frequency of these extreme weather events as a result of climate change may cause more frequent disruption to IPL's operations directly or as a result of supply chain disruption, which includes transportation of raw materials and finished product via road, rail and water. Impacts such as these may increase in the short term (1-3 years). Under this scenario, insurance premiums would be expected to increase along with a possibility that some events may be excluded from cover.

		Interruptions to logistics from extreme weather events could result in financial loss if product cannot be stored effectively and degrades, or cannot be transferred off-site, resulting in production losses once site storage has reached capacity.
Chronic physical	Relevant, always included	IPL provides products and services to end markets, individual customers and suppliers that may be impacted by changes to weather patterns resulting from climate change. Changes to the number and/or intensity of storms, hurricanes and other extreme weather events may impact IPL's end markets, primarily mining and agriculture. Water is a key raw material for manufacturing, with the majority used for cooling purposes. In the 4D scenario, it is predicted that average annual rainfall will be reduced, and longer periods of prolonged drought will be created, especially in Eastern Australia. Several manufacturing sites are located on coasts and are very close to sea level. A significant rise in sea level combined with a king tide may cause flooding events at these sites from 2030 onward (considered a long-term risk) particularly with increased storm activity causing storm surges to become more intense.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

Impacts on Operations (including supply chain): Some of IPL's manufacturing plants are located in areas that are susceptible to extreme weather events, such as hurricanes, tropical storms and tornadoes. An increase in the severity and/or frequency of these extreme weather events as a result of climate change may cause more frequent disruption to IPL's operations directly or as a result of supply chain disruption, which includes transportation of raw materials and finished product via road, rail and water. Impacts such as these may increase in the short term (1-3 years). Under this scenario, insurance premiums would be expected to increase along with a possibility that some events may be excluded from cover.
Interruptions to logistics from extreme weather events could result in financial loss if product cannot be stored effectively and degrades, or cannot be transferred off-site, resulting in production losses once site storage has reached capacity.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

10,000

Potential financial impact figure – maximum (currency)

100,000,000

Explanation of financial impact figure

IPL reported a AUD$20 million impact from flood waters which caused a derailment (North West Queensland) in 2016 and a AUD$10 million impact from floods associated with Cyclone Debbie (Queensland, Australia) in 2017. In 2019, a one-in-one hundred year flooding event in north Queensland damaged third party rail infrastructure and interrupted rail services to our remote Phosphate Hill fertiliser manufacturing facility for an extended period, resulting in a AUD$115 million impact. While learnings from this event would reduce the financial impact of future similar events, the higher potential financial impact figure takes into account an increase in the frequency of one-in-one hundred year flooding events in the north of Australia, where the intensity and frequency of rainfall events is expected to increase.

Cost of response to risk

Description of response and explanation of cost calculation

• Geographic and market diversification
• IPL's own manufacturing facilities are considered resilient to the anticipated acute physical impacts of climate change, with measures currently in place to manage exposure where sites are located in tornado or hurricane zones.
• Due to its location in a hurricane zone, the Waggaman Louisiana plant was built to comply with wind codes set out by the International Building Code Design Standard IBC 20 and Minimum Design Loads for Buildings and Other Structures ASCE 7-05. The design was signed off by a Louisiana based certified Professional Engineer with experience in design standards for the region, where the impacts of future hurricanes must be considered.
• Safety and evacuation plans are in place for all personnel and sites.
• IPL is developing technology solutions to increase the shelf life of products. Were IPL required to build additional storage to stockpile raw materials and product for temporary interruptions to logistics, and to protect product quality from humidity, flooding, heat extremes and other physical impacts, the total aggregate cost would be immaterial. Additional storage, both onsite and at strategic locations along transport routes may be necessary, along with contingency plans to use alternative forms of transport to access these.
• The Group endeavours to include force majeure clauses in agreements where relevant.
• Insurance policies are in place across the Group.
• The location of the Moranbah facility close to high quality metallurgical coal producers would provide IPL with a strategic advantage over its competitors in the event of supply chain disruption due to extreme weather events.
• Domestic co-location of critical products and diversification away from single source suppliers, already being managed, will assist in managing supply chain interruption.
• Following the 1 in 100 year flooding event in 2019, a detailed review of contingency plans for rail interruptions at the site was completed. As a result, additional on-site and off-site contingency storage was built and a number of process changes were implemented which will allow IPL to better prepare

for, manage and mitigate the risks associated with future rail interruptions, both minor and major. In association with the review, an internal audit was conducted by KPMG which identified further minor improvements to contingency plans and resulted in an overall rating of 'satisfactory'.

Comment

See Management Method above: the cost of these actions is difficult to quantify.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

IPL provides products and services to end markets, individual customers and suppliers that may be impacted by changes to weather patterns resulting from climate change. Changes to temperature, the amount of rainfall or the number and/or intensity of storms and other weather events may impact IPL's end markets, primarily mining and agriculture.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

• The S&OP process incorporates forecasting which enables upcoming seasonal scenario planning and some supply flexibility. Forecasts are based on typical weather conditions and are reviewed on an ongoing basis as the seasons progress to help align supply to changing demand.

• IPL's Australian fertilisers business operates in all Australian States other than Western Australia. In addition to geographical diversity, there is also diversity across crops – IPL supplies fertilisers for a wide range of agricultural applications – and customers serviced.

• The explosives business operates across North America and Asia Pacific, and in Europe, and is primarily aligned to customers with tier 1 assets, being those with the most efficient operations and best resources. Also, there is diversity in customer base, with products and services supplied for iron ore, base and precious metals, quarry and construction, and thermal and MET coal customers.

• IPL also has its explosives & fertiliser manufacturing sites located primarily in Australia & the US, which provides the competitive advantage of being able to continue to supply domestic markets. In addition, these wealthy countries can afford to rebuild their port infrastructure in the event of rising sea-levels and damage from storm surges and other acute climate changes. For this reason, it is anticipated that IPL will be able to ship to other offshore markets which retain demand in the event that current export regions are impacted.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

A 4-degree climate change scenario indicates fertiliser demand increasing in the short to medium term, as emerging markets demand more meat, before a significant downturn associated with the economic impacts of acute extreme weather events and chronic changes in climatic conditions impacting the ability to grow crops. IPL's Asia-Pacific fertiliser revenue from exports may be impacted in the long-term (6+ years) by a decline in offshore market demand with most South-east Asian countries, which currently are IPL's predominant fertiliser export market, and small island developing states being ranked among the most vulnerable in the world by the Climate Risk Index (CRI).
IPL currently sells up to 15% of its Asia Pacific explosives into international markets, with most of these countries considered emerging or developing. Under a 4-degree climate change scenario, explosives demand in the Asia Pacific region may be impacted in the long term (6+ years) by reduced demand in climate vulnerable nations, as indicated by the CRI.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Unknown

Are you able to provide a potential financial impact figure?

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

• In a 2 degree scenario, fertiliser demand is likely to grow due to restoration of degraded land to meet growing population needs for food and increased meat and dairy consumption.
• IPL currently exports fertilisers from Australia & may be able to ship to other locations where demand is retained as markets are impacted by chronic changes in climate.
• IPL currently sells fertilisers on the spot market to a geographically diverse group of customers & has no long-term reliance on a particular customer segment.
• IPL also has the competitive advantage of having manufacturing sites located primarily in Australia and the US. These are wealthy countries which can afford to rebuild their port infrastructure in the event of rising sea-levels and damage from storm surges and other acute climate changes. For this reason, it is anticipated that IPL will be able to ship to other offshore markets which retain demand in the event that current export regions are impacted by chronic climate change.
• Under a 4-degree climate scenario, the physical impacts of climate change mean that the Quarry & Construction sector is likely to assume a portion of the demand that was previously taken by climate vulnerable nations in the Asia Pacific region. Many new mines are expected to be developed to supply

"new world commodities" for renewables however, "new world commodities" are not expected to require the same quantity of explosives as bulk commodities. Therefore, overall explosive volumes would be expected to decrease.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

Natural Gas supply and price risk: Natural gas is one of the major inputs required for the production of ammonia and therefore is a critical feedstock for IPL's nitrogen manufacturing operations. Availability and quality of natural gas are both key factors when sourcing supply. Potential disruption of supply also poses a risk.

Time horizon

Likelihood

Very likely

Magnitude of impact

Unknown

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

In Australia, several market forces have interacted to affect both natural gas pricing and supply. The situation may be temporary or long term and the impacts may range from a marginal increase in costs to closure of sites and/or transitioning to new technologies.

Cost of response to risk

Description of response and explanation of cost calculation

• Global geographic diversification of major manufacturing sites
• The Group has short and medium term gas contracts in place for its Australian manufacturing sites, with the exception of Gibson Island. The contracts have various tenures and pricing mechanisms. As part of normal operations, IPL explores new gas supply arrangements where appropriate.
• The US natural gas market is a liquid market, with offtake facilitated by an extensive pipeline infrastructure and pricing commonly referenced to a quoted market price. The Americas business has short term gas supply arrangements in place for its gas needs with market referenced pricing mechanisms.
• Gas supply has been substantially contracted for the Waggaman, Louisiana ammonia plant through to 2021, with pricing determined by reference to the price for gas traded
through the Henry Hub.
• In respect of the Americas business (including the Waggaman, Louisiana ammonia plant), there is an ability to hedge gas prices and the Group reviews its approach to gas hedging in the US on a regular basis.

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

IPL has manufacturing facilities across various geographical locations that may be impacted by regulatory changes aimed at reducing the impact of, or otherwise addressing, climate change. Any changed regulation could result in an increase to the cost base or operating cost of these plants, and it may not be possible to alter sales prices to offset these cost increases. This includes, but is not restricted to, any regulations relating to reducing carbon emissions. Alternatively, any such regulatory changes may potentially impact the ability of these plants to continue functioning as currently operated. This risk would be heightened if regulatory changes are implemented inconsistently across regions or countries so that IPL's facilities (principally located in Australia and North America) are impacted by regulatory changes while manufacturing facilities of competitors operating in other jurisdictions are less impacted.

Carbon pricing currently applies in Australia, and under a 2-degree scenario, rapid action to limit climate change would include a global carbon price by 2020 (short-term risk: 1-3 years). Carbon pricing would increase operational costs as well as costs to transport products, which could impact until 2025, when most shipping options would be retrofitted with zero or low carbon mobility options (e.g. hydrogen). The transition to a global carbon price may give rise to a period of volatility where IPL would not be able to pass through the immediate carbon costs to customers, who may choose to source products more locally where available to avoid these carbon costs. However, well designed carbon pricing schemes may also offer opportunities to leverage grants to assist in the transition to low carbon technologies.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Unknown

Are you able to provide a potential financial impact figure?

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

IPL has a large, diverse supplier group, which would assist in avoiding carbon pricing pass through in the short-term. IPL customer agreements provide for the pass through of carbon pricing where possible. Domestic co-location of critical products will reduce carbon costs associated with transport. Diversification away from single source suppliers, already being managed, will also assist in managing the potentially volatile/variable costs associated with increased regulation, including carbon pricing, in the period between 2030 and 2040. IPL's Strategic Drivers include the development of leading technology solutions which aim to support greenhouse gas reductions for both our manufacturing facilities and our customers.

Comment

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

Under a 2-degree scenario, transitioning away from fossil fuels is likely to significantly decrease demand for thermal coal, with impacts beginning in the short term (1-3 years). However, the technologies associated with renewable energy such as electric vehicles and largescale batteries are likely to expand dramatically, with World Bank estimates indicating that demand for the metals required for these technologies could grow by 1000% under a 2-degree scenario. While these mining operations (which use explosives) mitigate the loss of revenue from the thermal coal market, “new world commodities” do not require the same quantity of explosives as bulk commodities, resulting in lower overall demand and potentially leading to a supply/demand imbalance.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Unknown

Are you able to provide a potential financial impact figure?

No we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

• IPL seeks to maintain competitive cost positions in its chosen markets, whilst maintaining quality product and service offerings. This focus on cost and quality positions its business units to compete over the medium to longer term in changing and competitive environments.
• In the 2-degree scenario the reduction in demand for explosives supplying the thermal coal markets will be partly offset by the mining of new world commodities required for renewable technologies which could be higher margin activity. IPL is already managing the transition away from thermal coal in the US (where thermal coal is being replaced by more abundant and competitively priced shale gas supplies) through increasing market share in the metals and quarry & construction sectors. Since IPL currently buys in a portion of its ammonium nitrate to fulfil current demand, the Group could manage a more rapid market change away from thermal coal through reduced purchasing of third-party ammonium nitrate.
• Where practical, IPL prefers to engage in long term customer and supply contractual relationships.
• Pricing and risk management processes exist in all businesses.

Comment

Identifier

Risk 7

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

Several manufacturing sites are located on coasts and are very close to sea level. A significant rise in sea level combined with a king tide may cause flooding events at these sites from 2030 onwards (considered a long-term risk) particularly with increased storm activity causing storm surges to become more intense.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Costs to manage sea-level rise at two identified sites are not considered to be material.

Cost of response to risk

Description of response and explanation of cost calculation

• Geographic and market diversification

• The construction of sea-level management infrastructure (levies, etc.) will be considered in the long-term where required for the identified sites to manage the risk of flooding due to storm surges associated with sea level rise.

Comment

Costs to manage sea-level rise at two identified sites are not considered to be material.

Identifier

Risk 8

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Primary potential financial impact

Company-specific description

Water is a key raw material for manufacturing, with the majority used for cooling purposes. Under a 4-degree climate change scenario, it is predicted that average annual rainfall will be reduced, and longer periods of prolonged drought will be created, especially in Eastern Australia. While this may be

offset somewhat by increased 1 in 20-year flooding events at some locations, and up to 15% more rainfall than historical averages in each single rain event, water restrictions may become more frequent in some areas. In addition, the possibility of less frequent, higher intensity rainfall events may lead to the risk of storm water pond overflows. These impacts could occur in the short-term (1-3 years), with very low dam levels being recorded near some sites in the recent past.

Time horizon

Short-term

Likelihood

Unlikely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

30,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Fines for 2 pond overflows at a site in Northern Australia during the reporting period were approximately AUD$25,000.

Cost of response to risk

Description of response and explanation of cost calculation

• Geographic and market diversification;
• Water scarcity concerns could prompt the need for additional storage. The cost of creating additional storage (dams) in these locations is considered immaterial;
• Water restrictions as a result of longer periods of drought and therefore increased regulation, may also prompt IPL to seek alternative water sources. (At present, no operations have been identified where sourcing of new water is considered to be too costly or unavailable); and
• Ongoing and long-term water management strategies are in place to ensure overflows of storm water ponds due to higher intensity rainfall events are avoided.

Comment

• The cost of managing stormwater ponds is not considered material.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Increased market share through continued development of enhanced efficiency and low emissions explosives and fertilisers, including Differential Energy explosives, Green Urea NV fertilisers, ENTEC fertilisers and eNpower fertilisers

Fertiliser demand grows in both the 2D and 4D scenarios, although domestic demand becomes more important as the physical impacts of climate change impact on international trade. The 2D scenario describes a rise in fertiliser use overall from 2025 due to increased focus on restoring the large proportion of the world's degraded agricultural land and unused land close to urban centres in order to provide food and fibre for a growing population. Artificial growing environments may be developed to meet growing demand while avoiding additional land clearing. Higher yields will need to be obtained from smaller land plots. New farms are expected to be built around urban centres, using highly controlled environments (i.e. vertical and high-density farms with unique soil mixes). Products that are lower carbon and environmentally friendly (e.g. slow release fertilisers) will have a significant competitive advantage in this scenario.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Future financial impact is difficult to quantify. Customer uptake of enhanced efficiency fertilisers, which have been shown to reduce nitrogen losses as N2O (a greenhouse gas) and enhanced efficiency explosives, which reduce fossil fuel use (and therefore also GHG) continues to grow.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

During 2018, IPL reviewed its strategy, governance and funding of research and development. The position of Chief Technology Officer was added to the IPL Executive Leadership Team and six core technology programs were identified to advance IPL's ability to strategically partner with customers to improve their productivity and safety and reduce their environmental and social impacts. Collaborative research and product development, both with our customers and with recognised research bodies, is a core strategy and we aim to be well placed to meet any changed growing conditions which emerge, such as those described by the 2D and 4D scenarios. Projects in 2019 included our continued work on the Australia-China Joint Research Centre of Healthy Soils for Sustainable Food Production and Environmental Quality. We also actively promote the best practice use of our fertiliser and explosives products.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Markets

Primary climate-related opportunity driver

Other, please specify

Increase in product demand due to physical impacts

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Market changes: Both the 2D and 4D scenarios describe conditions in which demand for explosives in the Quarrying and Construction sector will increase. In the 2D scenario, steady urbanisation rates and enough global wealth to support stable development will likely lead to the building, reinforcing and repairing of roads, buildings and other infrastructure. As only 1 percent of all residential buildings and commercial buildings in the USA are certified 'green', an enormous opportunity presents itself for retrofitting of buildings in a future which addresses climate change. Although not as severe as in the 4D scenario, physical impacts are still expected to occur, and rebuilding is required. While this will be completed in a resource efficient way, the scale of the transition is large and generates increased demand for aggregate, even though the use of recycled aggregate and re-use of building materials occurs.

The 4D scenario describes a future in which natural disasters severely impact on cities, towns and infrastructure, particularly along coasts due to sea level rise. An immense quantity of aggregate and other quarried materials is required in this scenario to rebuild, and to build new climate resilient infrastructure. This scenario describes the Quarrying and Construction sector expanding between 2020 and 2040 as the world (and the USA in particular) seeks to rebuild and protect itself from the physical impacts of climate change. From 2035, the scenario describes decreasing demand from many emerging and developing economies which cannot afford to rebuild after the cumulative losses from both the acute and chronic physical impacts of climate change.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Our Dyno Nobel business is the second largest industrial explosives distributor in North America by volume, providing ammonium nitrate, initiating systems and services to the Quarry & Construction sector in the southern US, northeast midwest US and Canada. In 2018, 40 percent of Dyno Nobel Americas Explosives revenue was generated from this sector with strong growth due to both market and share growth.

We have a leading position in this end market, which benefits from a favourable mix of our high-grade explosives, proprietary initiating systems and services. We continue to leverage our premium technology platform throughout and beyond the sector, including our proprietary Differential Energy offering. DeltaE has been in operation across the USA over the last three years and is well established in the quarry and construction and hard rock segments where customers value its safety, environmental, and efficiency benefits, including reduced GHG emissions due to reduced energy use. This technology is was rolled out in the Asia Pacific business during 2018 and continued to expand in 2019.

Dyno Nobel Americas also operates a Quarry Academy training centre for stone quarry operators.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of supportive policy incentives

Primary potential financial impact
Other, please specify
Government assistance

Company-specific description
Carbon pricing and other policy support for transitioning to the low carbon future described in the 2D scenario may create opportunities for IPL related to funding for investment in new technologies which reduce GHG emissions.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

IPL is closely monitoring both policy developments and the development of new technologies and has successfully registered one project to earn Australian Carbon Credit Units (ACCUs) under the current Australian Federal Government Emissions Reduction Fund.

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Other, please specify

Reduced exposure to future fossil fuel price increases

Company-specific description

IPL is currently highly dependent on the availability of affordable natural gas, both as a feedstock for hydrogen and as a fuel source. IPL continues to monitor developments in the renewables and low carbon energy space, including solar hydrogen (making use of solar energy to manufacture hydrogen from water) production, investing AUD$2.7million in a solar hydrogen feasibility study at our Moranbah ammonium nitrate plant in Australia in 2019.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

IPL has a core competency in the manufacture, storage and transportation of ammonia and is well placed to play a role in the 'green hydrogen' (and therefore green ammonia) and low carbon economy. Feedstock and energy options, including solar hydrogen, are constantly assessed for viability as part of IPL's overall capital management framework, supported by two of our strategic values drivers, Leading Technology Solutions and Manufacturing Excellence.

Comment

The cost to change to solar hydrogen production at scale would be considerable.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
IEA Sustainable development scenario IEA NPS BNEF NEO Other, please specify See references included in 'Details' box	IEA Sustainable development Scenario IEA New Policies Scenario BNEF NEO IPCC Other: Please specify 1. Moise, A. et al. 2015, Monsoonal North Cluster Report, Climate Change in Australia, CSIRO and Bureau of Meteorology, Australia. 2. Coastal Protection and Restoration Authority, 2017 Coastal Master Plan: C2-4: Tropical Storm Intensity and Frequency, Baton Rouge, Louisiana. 3. Trapp, R. J. et al. 2007, Changes in severe thunderstorm environment frequency during the 21st century caused by anthropogenically enhanced global radiative forcing, PNAS December 11, 2007. 104 (50); https://doi.org/10.1073/pnas.0705494104 4. The Climate Futures Tool developed by the CSIRO and the Australian Bureau of Meteorology; 5. The Climate Explorer Tool developed by the National Oceanographic and Atmospheric Association (NOAA), 6. The WRI Aqueduct Tool developed by the World Resources Institute All of these sources were used to together to create two future climate related scenarios (a 2-Degree and a 4-Degree scenario) which each describes how physical climate change and transitional changes (efforts to reduce emissions around the world) would impact on areas relating to IPL, including; carbon pricing and carbon market development; the overall economy; the development of technology; people's consumption patterns and social structures; the physical environment; energy and power; agriculture; mining; infrastructure; and transport, with the accompanying assessments considering the financial risks and opportunities for IPL in each of these areas under each scenario. The scenario-based risk assessments also considered the physical and transitional impacts on IPL's 13 major manufacturing operations on an individual and detailed basis. The scenarios are described in summary on page 18 of the 2018 IPL Sustainability report at https://www.incitecpivot.com.au/~/media/Files/IPL/Sustainability/2018%20Sustainability%20Report/2018%20IPL%20Sustainability%20Report.pdf More specific uses of each reference are described in the rows below.

IEA Sustainable development scenario	The IEA Sustainable Development Scenario 2017 and 2018 were flexed to meet scientific consensus on credibly avoiding 2 Degrees of warming to arrive at a 2-Degree scenario regarding the likely global energy mix generation in 2025, 2030 and 2040.
IEA NPS	The IEA new policies scenario was used to arrive at a 4-Degree scenario regarding the likely global energy mix generation in 2025, 2030 and 2040.
IEA Sustainable development scenario BNEF NEO Other, please specify IPCC AR5	BNEF NEO 2018 was used as the base scenario and flexed with IEA and IPCC inputs to credibly avoid 2 Degrees of warming to arrive at a 2-Degree scenario regarding the likely natural gas and energy mix (including gas pricing, solar hydrogen, peaking capacity and penetration of renewables in the electricity generations sector) in the USA and Australia in 2025, 2030 and 2040. Natural gas (CH4) is presently used by IPL as a feedstock for explosives and fertiliser manufacture (to make hydrogen for ammonia – NH3 - production). Both gas price and new (alternative) technologies to manufacture hydrogen for ammonia are key strategic considerations for IPL.
IEA Sustainable development scenario	The IEA New Policies Scenario was used to arrive at a 4-Degree scenario regarding the likely natural gas and energy mix (including gas pricing, solar hydrogen, peaking capacity and penetration of renewables in the electricity generations sector) in the USA and Australia in 2025, 2030 and 2040. Natural gas (CH4) is presently used by IPL as a feedstock for explosives and fertiliser manufacture (to make hydrogen for ammonia – NH3 - production). Both gas price and new (alternative) technologies to manufacture hydrogen for ammonia are key strategic considerations for IPL.
Other, please specify 1 Moise, A. et al. 2015, Monsoonal North Cluster Report, Climate Change in Australia, CSIRO and Bureau of Meteorology, Australia.	This reference was one of three used as an input to arrive at 2-Degree and 4-Degree scenarios regarding tropical cyclones (hurricanes) tornadoes and 1 in 20-year rainfall events in Australia and the USA during the period 2020-2050.
Other, please specify Coastal Protection and Restoration Authority, 2017 Coastal Master Plan: C2-4: Tropical Storm Intensity and Frequency, Baton Rouge, Louisiana.	This reference was the second of three used as an input to arrive at 2-Degree and 4-Degree scenarios regarding tropical cyclones (hurricanes) tornadoes and 1 in 20-year rainfall events in Australia and the USA during the period 2020-2050.
Other, please specify Trapp, R. J. et al. 2007, Changes in severe thunderstorm	This reference was the third of three used as an input to arrive at 2-Degree and 4-Degree scenarios regarding tropical cyclones (hurricanes) tornadoes and 1 in 20-year rainfall events in Australia and the USA during the period 2020-2050.

environment frequency during the 21st century caused by anthropogenically enhanced global radiative forcing, PNAS December 11, 2007. 104 (50); https://doi.org/10.1073/pnas.0705494104	
Other, please specify 1. The Climate Futures Tool developed by the CSIRO and the Australian Bureau of Meteorology; 2. The Climate Explorer Tool developed by the National Oceanographic and Atmospheric Association (NOAA); 3. The WRI Aqueduct Tool developed by the WRI	1. The Climate Explorer tool utilises National Oceanographic and Atmospheric Association (NOAA) data to project climate in the mid- and long term and can be accessed at: https://crt-climate-explorer.nemac.org/ 2. The Climate Futures tool has been developed by the CSIRO and the Australian Bureau of Meteorology and can be accessed at: https://www.climatechangeinaustralia.gov.au/en/ 3. The WRI Aqueduct tool presents change in water stress compared to a baseline of 1986-2005. Data is available at http://www.wri.org/our-work/project/aqueduct/ These were used to create 2-Degree and 4-Degree scenario climates at the geographic locations of IPL's 13 major manufacturing facilities (which are in Australia and the USA) for the years 'Baseline', 2030 and 2050. The future 2-D and 4-D climate scenarios included: • Mean Daily Max Temperature (°c) (Annual) • Monthly - Summer - (°c) • Monthly - Autumn - (°c) • Monthly - Winter - (°c) • Monthly - Spring - (°c) • Days above 35°C (in a year) • Mean Daily Min Temperature (°c) (Annual) • Monthly - Summer - DJF (°c) • Monthly - Autumn - MAM (°c) • Monthly - Winter - JJA (°c) • Monthly - Spring - SON (°c) • Days below 4°C • Days below 0°C

	• Max 24-hour rainfall - 1 in 10 or 20-year event (mm) • Water stress in year (percentage) • Percentage of time spent in drought • Duration of time spent in extreme drought (months per 20 years) These were used to identify risks relating to physical impacts at the sites including supply chain interruptions and effects on employees, equipment and some chemical products, which are impacted by temperature and humidity.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	IPL is leveraging our Core Strategic Drivers to meet the challenges of climate change. Providing 'Leading Technology Solutions' to our customers is a key driver for our business and we recognise the importance of developing and delivering products and services which enable our customers to reduce their greenhouse gas emissions, as well as partnering with research institutions to share and develop knowledge. IPL is committed to: • The development and delivery of innovative new fertiliser products which reduce our customers' greenhouse gases and increase the yields of food and fibre, such as our high efficiency fertilisers Green Urea, Entec and eNpower; • The development and delivery of explosives products and services which reduce our customer's energy use and greenhouse gases, such as our DeltaE explosives technology; and • Continued partnering with scientific institutions to progress research relating to emissions reduction from the use of our fertiliser production in agriculture and the development of new fertiliser technologies for sustained food security. 'Customer Focus' is a second core Strategic Driver for IPL. We recognise the importance of our role in strategically

		partnering with customers to reduce their greenhouse gas emissions while improving their productivity and safety and reducing their other environmental and social impacts. In addition to providing leading technology solutions to our customers, IPL is committed to: • Partnering with our customers in the on-customer-site trialling of new products which assist them in reducing their greenhouse gases; • Promoting the responsible and sustainable use of our explosives products through customer education and specialised on-customer-site services; and • Promoting the responsible and sustainable use of our fertiliser products through customer education, specialist soil, plant and water testing and provision of best practice information and advice farmers need to choose the right fertilisers and apply them correctly.
Supply chain and/or value chain	Yes	Extreme weather events caused disruption to third party logistics (rail and road) during 2016, 2017 and 2019. IPL is working with suppliers to ensure collaboration reduces the impact of future physical events, which affect party infrastructure, on IPL.
Investment in R&D	Yes	Providing 'Leading Technology Solutions' to our customers is a key driver for our business and we recognise the importance of developing and delivering products and services which enable our customers to reduce their greenhouse gas emissions, as well as partnering with research institutions to share and develop knowledge. Enhanced efficiency, lower emissions fertilisers and explosives products have been developed, and continue to be developed, as part of the R&D budget. During 2018, IPL reviewed its strategy, governance and funding of research and development. The position of Chief Technology Officer was added to the IPL Executive Leadership Team and six core technology programs were identified to advance IPL's ability to strategically partner with customers to improve their productivity and safety and reduce their environmental and social impacts. Collaborative research and product development, both with our customers and with recognised research bodies, is a core strategy and we aim to be well placed to meet any changed growing conditions which emerge, such as those described by the 2D and 4D scenarios. Projects in 2019 included: • Continued testing of recycled, reclaimed and treated oils, hydrocarbons and waxes to supplement the use of virgin fuel sources in emulsion-based explosives; • Continued testing of oxidiser (an ingredient of explosives) sourced from internal and customer waste streams to generate cost-savings by capturing value in recycled raw materials; • Continued work on a joint research project with the University of Melbourne into new fertiliser technologies for sustained food security;

		• Completion of our Australia-China Joint Research Centre of Healthy Soils for Sustainable Food Production & Environmental Quality research; and • A new partnership with the University of Adelaide & CSIRO to develop novel urea coatings for use in arid cropping zones where a particular nutrient deficiency is common;
Operations	Evaluation in progress	While IPL has reduced it's GHG intensity per tonne of ammonia by 6% since 2015, de-carbonisation of our major manufacturing facilities is challenging, requiring a shift to new technologies in order for absolute reduction targets to be realised. Through our 'Manufacturing Excellence' Strategic Driver we investigated new technologies in 2019, including solar hydrogen and N2O abatement opportunities, to identify paths to absolute reduction targets, investing $AUD2.7 million in a solar hydrogen feasibility study at our Moranbah ammonium nitrate manufacturing facility. See page 21 (page 11 of the pdf) in the 2019 IPL Sustainability Report at https://www.incitecpivot.com.au/~/media/Files/IPL/Sustainability/2019%20IPL%20SR.pdf

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Capital expenditures Assets	• Sales of increased efficiency, reduced emissions fertilisers and reduced energy explosives has been factored into revenues. • Insurances against impacts associated with extreme weather events (to the extent that these can be insured against) have been factored into operating costs. The development and manufacture of high efficiency, reduced emissions fertilisers and reduced energy explosives has also been factored into operating costs. • R&D - The development and manufacture of increased efficiency, reduced emissions fertilisers and reduced energy explosives has been factored into capital allocation, with an increase in R&D spend as of 2019. (Some sites have recently factored in new operational practices, such as running down product stockpiles at certain times of the year to prepare for potential logistics interruption associated with increasingly extreme seasonal weather events. One example of this occurs at our remote Phosphate Hill site in Australia where more extreme flooding events associated with the summer monsoon have interrupted rail services which transport product out of the site. Running down stockpiles ahead of these events reduces the chance that production will need to be interrupted due to a lack of storage. This management strategy does not impact on capital expenditures).

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2015

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1

Intensity metric

Metric tons CO2e per metric ton of product

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

2.14

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

71

Target year

2019

Targeted reduction from base year (%)

6

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

2.0116

% change anticipated in absolute Scope 1+2 emissions

9.7

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

2

% of target achieved [auto-calculated]

109.0342679128

Target status in reporting year

Achieved

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Please explain (including target coverage)

A reduction in CO2e per tonne of ammonia produced globally from 2.15 to 2.00 (6%) by 2019 was set in 2017 against a 2015 baseline. This was achieved in 2019. New targets will be set in 2020, with an interim target of maintaining an intensity of 2.00 tCO2e per tonne of ammonia produced globally in 2020.

Target reference number

Int 2

Year target was set

2015

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1

Intensity metric

Metric tons CO2e per metric ton of product

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

0.44138

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

29

Target year

2019

Targeted reduction from base year (%)

3

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.4281386

% change anticipated in absolute Scope 1+2 emissions

9.7

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.5

% of target achieved [auto-calculated]

-442.7024332774

Target status in reporting year

Revised

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Please explain (including target coverage)

A 3% reduction in CO2e per tonne of nitric acid produced globally was achieved in 2017 against a 2015 baseline, however, a 2% increase on 2017 intensities was recorded in 2018, and a larger increase was reported in 2019. This was due to an unexpected equipment failure at Moranbah, Australia, which impacted both the 2018 and 2019 FY emissions per tonne of nitric acid produced. To address this, IPL invested $4 million in the fabrication and installation of new equipment and $1.8 million in GHG abatement catalyst replacement during 2019. This will contribute to a target of 0.4 tonnes of

carbon dioxide equivalent (CO2e) per tonne of nitric acid produced by 2020, which is a 20% reduction in GHG emissions intensity against 2018 emissions and a 7% reduction against our 2015 baseline.

Target reference number

Int 3

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1

Intensity metric

Metric tons CO2e per metric ton of product

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

2.14

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

71

Target year

2020

Targeted reduction from base year (%)

6.5

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

2.0009

% change anticipated in absolute Scope 1+2 emissions

10

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

2

% of target achieved [auto-calculated]

100.6470165349

Target status in reporting year

New

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Please explain (including target coverage)

Maintain 2018 global intensity of 2.0 t CO2e per tonne of ammonia reached produced globally through to 2020.

Target reference number

Int 4

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1

Intensity metric

Metric tons CO2e per unit of production

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

0.5

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

29

Target year

2020

Targeted reduction from base year (%)

20

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.4

% change anticipated in absolute Scope 1+2 emissions

10

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.5

% of target achieved [auto-calculated]

0

Target status in reporting year

New

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Please explain (including target coverage)

Intensity of 0.40 tCO2e per tonne of nitric acid produced globally by 2020. Due to an unexpected abatement equipment failure at Moranbah, Australia, both the 2018 and 2019 FY emissions per tonne of nitric acid produced increased, and a previous intensity reduction target was not met. To address this, IPL invested $4 million in the fabrication and installation of new equipment and $1.8 million in GHG abatement catalyst replacement during 2019. This will contribute to a target of 0.4 tonnes of carbon dioxide equivalent (CO2e) per tonne of nitric acid produced by 2020, which is a 20% reduction in GHG emissions intensity against 2018 emissions and a 7% reduction against our 2015 baseline.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

No other climate-related targets

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	12	
To be implemented*		
Implementation commenced*		
Implemented*	8	386,917
Not to be implemented		

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Non-energy industrial process emissions reductions

Other, please specify

Replace faulty heat recovery equipment and N2O abatement catalyst

Estimated annual CO2e savings (metric tonnes CO2e)

400,000

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

5,800,000

Payback period

No payback

Estimated lifetime of the initiative

16-20 years

Comment

An unexpected maintenance issue at IPL's nitric acid plant at Moranbah in Australia late in the 2018 financial year resulted in an unexpected increase in emissions of N2O (a GHG) at the site. To address this, IPL invested $4 million in the fabrication and installation of new equipment and $1.8 million in GHG abatement catalyst replacement during the 2019 financial year. This is estimated to reduce GHG emissions by 400,000 tCO2e in a full year period.

Initiative category & Initiative type

Energy efficiency in production processes
Machine/equipment replacement

Estimated annual CO2e savings (metric tonnes CO2e)

4,706

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

406,000

Investment required (unit currency – as specified in C0.4)

421,950

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

A boiler replacement at our Donora manufacturing site implemented during this reporting year will reduce natural gas consumption by 91,683 GJ per year and also reduce water
consumption and electricity consumption (unquantified)

Initiative category & Initiative type

Energy efficiency in production processes
Waste heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)

1,377

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

185,000

Investment required (unit currency – as specified in C0.4)

108,750

Payback period

<1 year

Estimated lifetime of the initiative

16-20 years

Comment

Process optimisation at our Cheyenne, Wyoming ammonia and nitric acid plants allowed purge gas from the ammonia plant to be reused in the nitric acid plant, reducing natural gas use by 26,825 GJ and GHG emissions by 1,377 tCO2e annually.

Initiative category & Initiative type

Energy efficiency in production processes

Compressed air

Estimated annual CO2e savings (metric tonnes CO2e)

7,000

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

258,300

Investment required (unit currency – as specified in C0.4)

1,854,000

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

Air compressor replacements completed in the reporting year at Carthage in Missouri, Simsbury in Connecticut, and Geelong, Phosphate Hill and Moranbah in Australia will reduce energy use by 1,313,375 kWh and GHG emissions by 7,000 tCO2e each year.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for low-carbon product R&D	Our fertiliser and explosives manufacturing businesses have a dedicated R&D budget for product development which includes research and development of slow release (reduced nitrous oxide emitting) fertiliser products and reduced energy explosives products and delivery systems.
Internal incentives/recognition programs	Consistent improvement in energy efficiency, which also reduces IPL's greenhouse gas emissions, is a key part of BEx (Business Excellence) process reviews across our manufacturing business, with quarterly MD&CEO Values Awards program recognising team and individual efforts. Annual bonuses are also linked to the performance goals of energy managers, facility managers and Executive Team members.
Employee engagement	Consistent improvement in energy efficiency is a key part of BEx (Business Excellence) process review across our manufacturing business. BEx (Business Excellence) is IPL's continuous improvement system and engages our employees by involving them directly in the implementation of ‘best practice’ in their own work areas. Employees at all levels of our business are encouraged to think laterally, to share their experiences and ideas, and to participate in implementing improvements, resulting in outcomes which are highly valued by both the business and our employees.
Financial optimization calculations	Due to the high cost of energy to our business, which includes the use of gas as both an energy source and a feedstock, consistent improvement in energy efficiency not only reduced greenhouse gas emissions, but also delivers costs savings.
Other	The use of best available energy efficiency technologies in plant upgrades and the design and construction of new manufacturing facilities. This reduces both our energy use, which is a major cost to our business, and the greenhouse gases associated with this energy use. The technology used in the new Waggaman, Louisiana Ammonia Plant underpinned IPL's intensity reduction target of a 2% reduction in tCO2e per tonne of ammonia produced in 2017 against a 2015 baseline.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Green Urea NV products contain urea treated with the urease inhibitor, N-(n-butyl) thiophosphoric triamide (NBPT), which delays hydrolysis of urea into unstable forms that may be lost to the atmosphere, thereby reducing emissions related to fertiliser usage.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

% revenue from low carbon product(s) in the reporting year

Comment

Losses of N2O (a potent greenhouse gas) to the atmosphere are estimated to be reduced by a conservative 50%, but are difficult to quantify due to being affected by precipitation and application techniques. Agronomy services and education are provided to customers to increase knowledge and maximise emissions reductions.

Level of aggregation

Product

Description of product/Group of products

Entec® is a fertiliser treatment that retains nitrogen in the stable ammonium form for an extended period. This reduces nitrogen losses to leaching (waterways) and denitrification (losses to the atmosphere as the GHG N2O) while conserving more nitrogen for plant uptake. Both trials and customer use continue to demonstrate the potential for significant reductions in GHG as well as yield increase with the use of Entec (see page 35-42 of the Australian Sugarcane Annual 2016 and Less Nitrogen Lost is More Gain in Cane, also in the Australian Canegrower, Sept 2017).

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

% revenue from low carbon product(s) in the reporting year

Comment

Losses of N2O (a potent greenhouse gas) to the atmosphere are estimated to be reduced by a conservative 50%, but are difficult to quantify due to being affected by precipitation and application techniques. Agronomy services and education are provided to customers to increase knowledge and maximise emissions reductions. See also ‘Case Study: ENTEC use means peace of mind, less nitrogen losses and more gain in cane’ on page 27 (page 14 of the pdf) of the 2019 IPL Sustainability Report at https://www.incitecpivot.com.au/~/media/Files/IPL/Sustainability/2019%20IPL%20SR.pdf

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

October 1, 2014

Base year end

September 30, 2015

Base year emissions (metric tons CO2e)

2,349,535

Comment

Scope 2 (location-based)

Base year start

October 1, 2014

Base year end

September 30, 2015

Base year emissions (metric tons CO2e)

355,916

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Australia - National Greenhouse and Energy Reporting Act
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
US EPA Emissions & Generation Resource Integrated Database (eGRID)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

3,080,346

Start date

October 1, 2018

End date

September 30, 2019

Comment

Scope 1 emissions in the 2019 IPL financial year have increased since 2015 (the baseline year) due to increased production associated with the construction and commissioning of the Waggaman Louisiana Ammonia Plant in October 2016. However, GHG emissions intensity (IPL's tCO2e per tonne of ammonia produced globally) decreased by 6%.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

3,423,867

Start date

October 1, 2017

End date

September 30, 2018

Comment

Scope 1 emissions in the 2018 IPL financial year increased since 2015 (the baseline year) due to increased production associated with the construction and commissioning of the Waggaman Louisiana Ammonia Plant in October 2016. However, GHG emissions intensity (IPL's tCO2e per tonne of ammonia produced globally) decreased by 6%.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

2,749,847

Start date

October 1, 2016

End date

September 30, 2017

Comment

Scope 1 emissions in the 2017 IPL financial year increased since 2015 (the baseline year) due to increased production associated with the construction and commissioning of the Waggaman Louisiana Ammonia Plant in October 2016. However, GHG emissions intensity (IPL's tCO2e per tonne of ammonia produced globally) decreased by 5%.

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

2,452,536

Start date

October 1, 2015

End date

September 30, 2016

Comment

Scope 1 emissions in the 2016 IPL financial year increased 4% since 2015 (the baseline year) due to increased production.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

307,167

Start date

October 1, 2018

End date

September 30, 2019

Comment

Scope 2 emissions in the 2019 IPL financial year have decreased by 14% since 2015 (the baseline year).

Past year 1

Scope 2, location-based

327,536

Start date

October 1, 2017

End date

September 30, 2018

Comment

Scope 2 emissions in the 2018 IPL financial year decreased by 8% since 2015 (the baseline year).

Past year 2

Scope 2, location-based

336,707

Start date

October 1, 2016

End date

September 30, 2017

Comment

Scope 2 emissions in the 2017 IPL financial year decreased by 5% since 2015 (the baseline year).

Past year 3

Scope 2, location-based

307,727

Start date

October 1, 2015

End date

September 30, 2016

Comment

Scope 2 emissions in the 2016 IPL financial year decreased by 14% against 2015 (the baseline year).

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Emissions from offsite transport of product in North America

Relevance of Scope 1 emissions from this source

Emissions are not evaluated

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions from this source

Explain why this source is excluded

Data is presently unavailable. Very low materiality (estimated to be less than 1% of total emissions).

Source

Emissions from electricity used in small remote offices and despatch sites in North America.

Relevance of Scope 1 emissions from this source

Emissions are not evaluated

Relevance of location-based Scope 2 emissions from this source

Emissions are not evaluated

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not evaluated

Explain why this source is excluded

Data is presently unavailable. Very low materiality (estimated to be less than 1% of total emissions).

Source

Emissions from operations in Chile.

Relevance of Scope 1 emissions from this source

Emissions are not evaluated

Relevance of location-based Scope 2 emissions from this source

Emissions are not evaluated

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not evaluated

Explain why this source is excluded

Very low materiality (estimated to be less than 1% of total emissions).

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Please explain

Capital goods

Evaluation status

Relevant, not yet calculated

Please explain

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, not yet calculated

Please explain

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

83,980

Emissions calculation methodology

Standard approach and verification – EN16258:2012

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

As part of our engagement with our global shipping suppliers we are able to quantify the Scope 3 emissions associated with our global shipping. Through an opportunity provided by Rightship and CBL Markets in 2017, we are pleased to report that we were also able to offset a portion of these emissions through the purchase of verified voluntary carbon credits in the 2017, 2018 and 2019 IPL financial years.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Please explain

Business travel

Evaluation status

Relevant, not yet calculated

Please explain

Employee commuting

Evaluation status

Relevant, not yet calculated

Please explain

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

IPL has no upstream leased assets.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

There is no further processing for 99% of IPL's products (by weight). IPL produces fertilisers and explosives, which are consumed during their use.

Use of sold products

Evaluation status

Relevant, not yet calculated

Please explain

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

There is no end of life treatment required for 99% of IPL's products (by weight). The products are consumed during use by the customer.

Downstream leased assets

Evaluation status

Relevant, not yet calculated

Please explain

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

IPL has no franchises

Investments

Evaluation status

Not evaluated

Please explain

Other (upstream)

Evaluation status

Not evaluated

Please explain

Other (downstream)

Evaluation status

Not evaluated

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0008646

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

3,387,513

Metric denominator

unit total revenue

Metric denominator: Unit total

3,918,200,000

Scope 2 figure used

Location-based

% change from previous year

11.1

Direction of change

Decreased

Reason for change

Revenues increased very slightly, while emissions decreased. Emissions reductions were mostly due to replacement of N2O abatement equipment at the Moranbah nitric acid plant and reduced production at the Phosphate Hill plant, which was impacted by flooding.

Intensity figure

22,227.78

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

3,387,513

Metric denominator

Other, please specify

Net profit (millions)

Metric denominator: Unit total

152.4

Scope 2 figure used

Location-based

% change from previous year

106

Direction of change

Increased

Reason for change

Although IPL's total emissions fell by 9.7%, net profit fell from AUD$347.4 million in the 2018 FY to AUD$152.4 in the 2019 FY, causing this intensity metric to rise.

Intensity figure

0.9679

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

3,387,513

Metric denominator

metric ton of product

Metric denominator: Unit total

3,500,000

Scope 2 figure used

Location-based

% change from previous year

3

Direction of change

Increased

Reason for change

Metric tonne of product manufactured for sale - production was interrupted at the Phosphate Hill site due to flooding impacting on rail logistics to the site, which meant that production was suspended while product tanks were full. This affected global energy efficiency (and therefore GHG) per tonne of product manufactured for sale.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	2,427,019	IPCC Fourth Assessment Report (AR4 - 20 year)
CH4	5,418	IPCC Fourth Assessment Report (AR4 - 20 year)
N2O	647,899	IPCC Fourth Assessment Report (AR4 - 20 year)
SF6	10	IPCC Fourth Assessment Report (AR4 - 20 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Australia	1,474,303
North America	1,605,669
Turkey	373

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Incitec Pivot Fertilisers	781,182
Dyno Nobel Explosives	2,299,164

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Chemicals production activities	3,080,346	The amount reported here includes emissions from activities at facilities operated by IPL which supported chemicals production and distribution. These include IPL administration buildings, and fertiliser distribution sites under IPL operational control.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Australia	151,144		178,686	0
North America	155,494		385,325	
Turkey	529		1,200	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Incitec Pivot Fertilisers	148,465	
Dyno Nobel Explosives	158,702	

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	307,167		The amount reported here includes emissions from activities at facilities operated by IPL which supported chemicals production and distribution. These include IPL administration buildings, and fertiliser distribution sites under IPL operational control.

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	103,424	
Methane (CH4)		
Nitrous oxide (N2O)		
Hydrofluorocarbons (HFC)		
Perfluorocarbons (PFC)		
Sulphur hexafluoride (SF6)		
Nitrogen trifluoride (NF3)		

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	
Other emissions reduction activities	130,110	Decreased	3.5	Investment in repair of heat recovery equipment and N2O abatement catalyst (Moranbah) + Process optimisation (Cheyenne) + Air compressor and boiler efficiency projects = 130,110tCO2e/ 3,751,403 tCO2e (2018 global emissions) = 3.5%
Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	233,781	Decreased	6.2	Decreased production resulted in a decrease in energy use and therefore GHG at our Phosphate Hill and Waggaman, Louisiana ammonia plants.
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 5% but less than or equal to 10%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value		5,422,177	5,422,177
Consumption of purchased or acquired electricity		136,042	429,174	565,216
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		136,042	5,851,352	5,987,394

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value	5,422,177
Consumption of purchased or acquired electricity		565,216
Consumption of self-generated non-fuel renewable energy		0
Total energy consumption		5,987,394

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Natural Gas

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

5,324,880

MWh fuel consumed for self-generation of electricity

801,620

MWh fuel consumed for self-generation of heat

0

Emission factor

0.05133

Unit

metric tons CO2 per GJ

Emissions factor source

National Greenhouse and Energy Reporting Scheme Measurement Technical Guidelines for the estimation of emissions by facilities in Australia, 2019. Commonwealth of Australia.

Note: This document is aligned with the definitions used in The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard of the World Resources Institute/World Business Council for Sustainable Development (the GHG Protocol).

Comment

Heating values of natural gas vary between geological basins. The reported figures are global totals.

Fuels (excluding feedstocks)

Diesel

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

94,673

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.709

Unit

kg CO2 per liter

Emissions factor source

National Greenhouse and Energy Reporting Scheme Measurement Technical Guidelines for the estimation of emissions by facilities in Australia, 2019. Commonwealth of Australia.

Comment

NGER is based on the GHG Protocol

Fuels (excluding feedstocks)

Petrol

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

2,491

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.318

Unit

kg CO2e per liter

Emissions factor source

National Greenhouse and Energy Reporting Scheme Measurement Technical Guidelines for the estimation of emissions by facilities in Australia, 2019. Commonwealth of Australia.

Comment

NGER is based on the GHG Protocol

Fuels (excluding feedstocks)

Propane Gas

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

99

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

1.557

Unit

kg CO2 per liter

Emissions factor source

National Greenhouse and Energy Reporting Scheme Measurement Technical Guidelines for the estimation of emissions by facilities in Australia, 2019. Commonwealth of Australia.

Comment

NGER is based on the GHG Protocol

Fuels (excluding feedstocks)

Fuel Oil Number 1

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

34

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

10.14523

Unit

kg CO2e per gallon

Emissions factor source

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	304,425	304,425	0	0
Heat				
Steam				
Cooling				

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	304,425	304,425
Heat		
Steam		
Cooling		

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?

Yes

C-CH8.3a

(C-CH8.3a) Disclose details on your organization's consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks

Natural gas

Total consumption

34,720,277

Total consumption unit

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

0.05

Heating value of feedstock, MWh per consumption unit

Heating value

Unable to confirm heating value

Comment

The consumption unit reported is GJ of natural gas. The emission factor reported is t CO2e per GJ gas. The default emission factor (Method 1 under NGER) for natural gas used as a feedstock for ammonia production under NGER is 0.0512 tCO2e per GJ gas consumed. This has been used for natural gas chemically separated for use as a hydrogen feedstock in all plants except three in Australia, which use emission factors derived from continuous chromatic gas analysis (Method 2 under NGER). In 2019 these emission factors were 0.04996, 0.04938 and 0.050485. These lower emission factors are due to the natural gas being coal seam methane which has a lower carbon content. A single heating value cannot be provided, as these vary with geological basin and the total consumption is a global sum.

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

	Percentage of total chemical feedstock (%)
Oil	0
Natural Gas	100
Coal	0
Biomass	0
Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product

Ammonia

Production (metric tons)

1,356,199

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

1.98

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

Steam/ heat recovered (MWh per metric ton of product)

Comment

This is a 6% reduction in GHG emissions intensity against baseline year (2015) intensity.

Output product

Nitric acid

Production (metric tons)

886,073

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.7

Electricity intensity (MWh per metric ton of product)

Steam intensity (MWh per metric ton of product)

Steam/ heat recovered (MWh per metric ton of product)

Comment

Emissions intensity per tonne of nitric acid increased due to an unexpected maintenance issue at IPL's nitric acid plant at Moranbah, Australia late in the 2018 financial year. While the equipment failure was internal to the plant and resulted in no accidental emissions directly to air, it affected the efficiency of the plant's N2O abatement unit, resulting in higher N2O emissions per tonne of nitric acid produced for a portion of the reporting period. To address this, IPL invested $4 million in the fabrication and installation of new equipment and $1.8 million in GHG abatement catalyst replacement during the 2019 financial year. This will contribute to a target of 0.4 tonnes of carbon dioxide equivalent (CO2e) per tonne of nitric acid produced by 2020, which is a 7% reduction against our 2015 baseline.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify Low GHG emitting fertilisers	Applied research and development	21 - 40%		IPL has been developing and marketing enhanced efficiency fertilisers which have been shown to reduce GHG emissions to the atmosphere (as nitrous oxide) for approximately 10 years, with applied research currently ongoing.
Other, please specify Low GHG emitting fertilisers	Full/commercial-scale demonstration	21 - 40%		IPL estimates a capital investment of approximately $1 million, with training and promotional costs of approximately $2 million (when employee costs are included) in the large-scale commercial deployment of our Green Urea NV and Entec products, which continue to demonstrate the potential for significant reductions in GHG during their use.
Other, please specify Differential Energy™ explosives technology	Full/commercial-scale demonstration	21 - 40%		Differential Energy™ is a proprietary explosives method which allows blasters to accurately vary the density of chemically gassed emulsion as it is being loaded into the blast hole, allowing the operator to load multiple densities of gassed emulsion into the same hole in order to match the unique geological characteristics present in the ground. Because the explosives energy is precisely targeted to match the rock properties, the amount of energy loaded into the blast hole will match only what is required for an optimal blast, reducing total energy and therefore vertical movement at the surface, air overpressure and noise from the blast event. The use of Differential Energy continues to result in reduced GHG as well

				as reduced energy use, NOx emissions, dust, noise and ground vibration and increased productivity while reducing overall costs for our mining customers.
Radical process redesign	Basic academic/theoretical research	≤20%	2,700,000	In line with our commitment to reducing our GHG emissions and driven by our Manufacturing Excellence and Profitable Growth Strategic Drivers, we commenced a $2.7 million feasibility study, supported by the Australian Renewable Energy Agency, to assess the potential to use renewable hydrogen to increase ammonia production at our manufacturing facility at Moranbah, Queensland. Rather than being made from natural gas, renewable hydrogen can presently be made at very small plants using solar energy to split water into hydrogen and oxygen, allowing ammonia to be produced without the GHG associated with natural gas. The aim of the feasibility study is to determine whether renewable hydrogen can be made at an industrial scale at a commercially competitive price. The results will be published in the second half of the 2020 IPL FY.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance

Limited assurance

Attach the statement

IPL NGER Limited Assurance Opinion 2019_final signed_28102019-concise.pdf

Page/ section reference

Page 1: "Conclusion:
We have undertaken a limited assurance engagement of the accompanying NGER Report of Incitec Pivot Limited (“IPL”) for the period 1 July 2018 to 30 June 2019 comprising the following:
 scope 1 greenhouse gas emissions of 1,711,015 tonnes of CO2-e
 scope 2 greenhouse gas emissions of 155,095 tonnes of CO2-e
 energy production of 1,047,993 GJ
 energy consumption of 28,670,453 GJ"

Relevant standard

Other, please specify

ASAE3410

Proportion of reported emissions verified (%)

48

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance

Limited assurance

Attach the statement

IPL NGER Limited Assurance Opinion 2019_final signed_28102019-concise.pdf

Page/ section reference

Page 1: "Conclusion:
We have undertaken a limited assurance engagement of the accompanying NGER Report of Incitec Pivot Limited (“IPL”) for the period 1 July 2018 to 30 June 2019 comprising the following:
 scope 1 greenhouse gas emissions of 1,711,015 tonnes of CO2-e
 scope 2 greenhouse gas emissions of 155,095 tonnes of CO2-e
 energy production of 1,047,993 GJ
 energy consumption of 28,670,453 GJ"

Relevant standard

Other, please specify

ASAE3410

Proportion of reported emissions verified (%)

49

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	ASAE3140	46% of IPL's energy use (100% of our Australian energy use) is verified as part of the Limited Assurance Opinion provided by Deloitte on an annual basis for our National Greenhouse and Energy Report (NGER). Since this is completed on a June 30 year-end, and the CDP reporting year is the Company financial year (Sept 30 year-end), this assurance is currently partially completed for the data in this report. The assurance statement attached includes the energy assurance to June 30 2019: "Page 1: "Conclusion: We have undertaken a limited assurance engagement of the accompanying NGER Report of Incitec Pivot Limited (“IPL”) for the period 1 July 2018 to 30 June 2019 comprising the following: □ scope 1 greenhouse gas emissions of 1,711,015 tonnes of CO2-e □ scope 2 greenhouse gas emissions of 155,095 tonnes of CO2-e □ energy production of 1,047,993 GJ □ energy consumption of 28,670,453 GJ" 1

[1] IPL NGER Limited Assurance Opinion 2019_final signed_28102019-concise.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Australia ERF Safeguard Mechanism - ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Australia ERF Safeguard Mechanism

% of Scope 1 emissions covered by the ETS

48

% of Scope 2 emissions covered by the ETS

0

Period start date

July 1, 2018

Period end date

June 30, 2019

Allowances allocated

0

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

1,470,552

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Three of IPL’s manufacturing facilities in Australia are captured under the Australian ERF Safeguard Mechanism, a part of the 'Direct Action' policy. These three sites make up more than 99% of IPL's Australian Scope 1 emissions.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Day-to-day management of Company affairs and the implementation of the corporate strategy and policy initiatives are formally delegated to the Managing Director & CEO by the IPL Board. The Managing Director & CEO and his/her direct reports form the Executive Team. Both responsibility for the management of compliance with carbon pricing policies and financial risk management (inclusive of the Australian ERF Safeguard Mechanism) resides with the Chief Financial Officer who is an Executive Team Member. The Corporate Sustainability Manager coordinates carbon emissions reporting and assurance, and the applications process for registration of projects to earn Australian Carbon Credit Units (ACCUs) under the ERF. This position also advises the Corporate Finance and Treasury functions, who are specifically responsible for the carbon cost management strategy and carbon permit surrender, respectively. The Corporate Sustainability Manager is part of the finance team who reports to the Chief Financial Officer, thereby providing alignment with the financial performance for the Company and overall risk management. The VP Strategic Project Development is a qualified engineer who is responsible for the Group's de-carbonisation strategy and reports to the IPL Executive Strategy team. The CFO is also part of the IPL Executive Strategy Team.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations

Other, please specify

Assess CAPEX applications

GHG Scope

Scope 1

Application

Facilities

Actual price(s) used (Currency /metric ton)

15

Variance of price(s) used

Market (supply and demand)

Type of internal carbon price

Implicit price

Impact & implication

Under the Australian ERF, ACCUs can be earned by facilities through registered energy efficiency projects. Where eligible, the potential value of credits earned is included in CAPEX applications. Credits are owned by the IPL facility/business unit which has conducted the project which earns them.
Credits can be traded on the open market (Australian: price set by supply and demand) or between IPL facilities/business units in the event of a future carbon liability by an IPL facility under the Safeguard Mechanism.
The internal carbon price is also included in CAPEX applications where the project will increase emissions at facilities covered by the Australian ERF Safeguard Mechanism.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

% total procurement spend (direct and indirect)

5

% of supplier-related Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

During 2019 we continued to minimise the emissions associated with our global shipping contractors in the performance of their services for us.

Impact of engagement, including measures of success

By using the RightShip Greenhouse Gas (GHG) Emissions Rating to find more efficient shipping vessels, we are using our influence to bring change in the maritime industry by rewarding ship owners that prioritise energy efficiency in line with our values, our commitment to minimise environmental impacts, and our drive to improve our financial performance. The relative performance of a vessel is rated from A through to G, the most efficient being A, the least efficient being G. Selecting more efficient ships means less energy used as fuel, lowered fuel costs and reduced Scope 3 carbon emissions.
The Rightship GHG methodology uses the standard European energy efficiency scale and allows emissions to be benchmarked and tracked per journey and over time.
The methodology has been verified according to an internationally recognised standard (EN16258:2012).
Since we began using the Rightship GHG emissions rating system in 2016, we have reduced our emissions per tonne of cargo by 12%.
In 2019, 32% of our ships were rated A or B, and 88% were rated D and above. We used no F or G rated ships in 2019.

Comment

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Trade associations

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

No

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our highest governing body is the Board of Directors. The Board is responsible for charting the direction, policies, strategies and financial objectives of the Company. The IPL Climate Change Policy was endorsed by the Board and describes how the management of climate change-related issues is incorporated into the Company's six Strategic Agenda Value Drivers. Day-to-day management of Company affairs and the implementation of the corporate strategy and policy initiatives are formally delegated to the Managing Director and CEO. Responsibility for climate change strategy and governance resides with the Executive Team, advised by the Corporate Sustainability Manager. The Corporate Sustainability Manager is part of the finance team which reports to the Chief Financial Officer, thereby providing alignment with the financial performance and financial processes for the Company. As per IPL Policy, no statements are made to external parties without IPL legal review. This legal review ensures that all statements align with IPL strategies approved by the Board. These statements include, but are not limited to, formal submissions regarding proposed government policies, statements to media organisations and formal statements to trade associations.

C12.4

(C12.4) Have you published information about your organization’s response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

IPL_2019_Annual Report.pdf

Page/Section reference

See:
1. Page 14 under 'Managing impacts of climate change' in the Sustainability section
2. Page 16 under 'Governance and ethical conduct' in the Sustainability section
3. Page 30 'Climate change risks associated with a 2 Degree Scenario risk analysis' under 'Principal Risks' in the Operating and Financial Review section.
4. Page 31 'Climate change risks associated with a 4 Degree Scenario risk analysis' under 'Principal Risks' in the Operating and Financial Review section.

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

2019 IPL GRI Index and Data.pdf

Page/Section reference

1. Pages 18-19 (page 10 of the pdf) under 'TCFD Recommended Disclosures' which lists the location of TCFD aligned disclosures for 2019.
2. Pages 14-17 (pages 8-9 of the pdf) under 'Risks & Opportunities Associated with Climate Change'

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other, please specify
METRICS USED TO ASSESS AND MANAGE CLIMATE RELATED RISKS AND OPPORTUNITIES

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

2019 IPL SR.pdf

Page/Section reference

1. Page 8 (page 5 of the pdf) under 'Our Scorecard'
2. Page 9 (page 5 of the pdf) under 'Our Targets'
3. Pages 16-17 (page 9 of the pdf) under 'Resource Efficiency and Emissions'
4. Pages 20-21 under 'Managing the Impacts of Climate Change'
5. Page 25 (page 13 of the pdf) under 'Reducing the impacts of blasting with Delta E'
6. Page 29 (page 15 of the pdf) under 'Case Study: New fertiliser technologies for sustained food security'
7. Page 31 (page 16 of the pdf) under 'Working with RightShip'

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other, please specify
Developing low GHG products and services, Research and development into sustained food security

Comment

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Corporate Sustainability Manager	Environment/Sustainability manager

Submit your response

In which language are you submitting your response?

English

Please confirm below

I have read and accept the applicable Terms