



# Our Fertilisers Business

**Incitec Pivot Fertilisers' long history in the Australian fertiliser industry goes back over 100 years, demonstrating its resilience through variable weather conditions, and agricultural and economic cycles.**

Incitec Pivot Fertilisers (IPF) is IPL's fertilisers business. Operating across Eastern Australia, it is one of the largest domestic manufacturers and suppliers of fertilisers by volume. During 2023, a range of fertilisers were produced from its strategically positioned manufacturing facilities including the ammonium phosphate fertiliser plant at Phosphate Hill, complemented by the world-scale sulphuric acid plant at Mt Isa, the Geelong Single Super Phosphate (SSP) manufacturing plant, and the Gibson Island ammonia manufacturing plant. Natural gas based manufacturing of ammonia ceased at Gibson Island this year after exhaustive, but ultimately unsuccessful, efforts to secure an affordable long-term gas supply. The project to convert this site to green ammonia production is being actively progressed toward a final investment decision.

IPF's distribution network includes more than 20 Distribution Centres and stretches from Cairns in North Queensland down the eastern and southern Australian coasts to Port Lincoln in South Australia. These include three EASY Liquids sites based in Boundary Bend, Moree and Whitton, providing a wide range of liquid fertilisers to key agricultural markets close to these distribution points.

Internationally, IPF sells to major offshore agricultural markets in Asia Pacific, the Indian subcontinent, Brazil and the United States. IPF also procures fertilisers from overseas manufacturers to meet domestic seasonal peaks for its customers' diversified crops.

# Our Incitec Pivot Fertilisers Operations

3

Manufacturing facilities

1

Soil and plant testing laboratory

18

Primary Distribution Centres (PDCs)

9

Export regions

>800kt

Fertiliser storage

>1.3mt

Produced

39%

of east coast fertiliser market supplied

>2.7mt

Distributed

Incitec Pivot Fertilisers

● Primary Distribution Centres

○ Regional Service Centres

⦿ Regional Offices

○ Soil and plant testing laboratory

▲ Manufacturing site

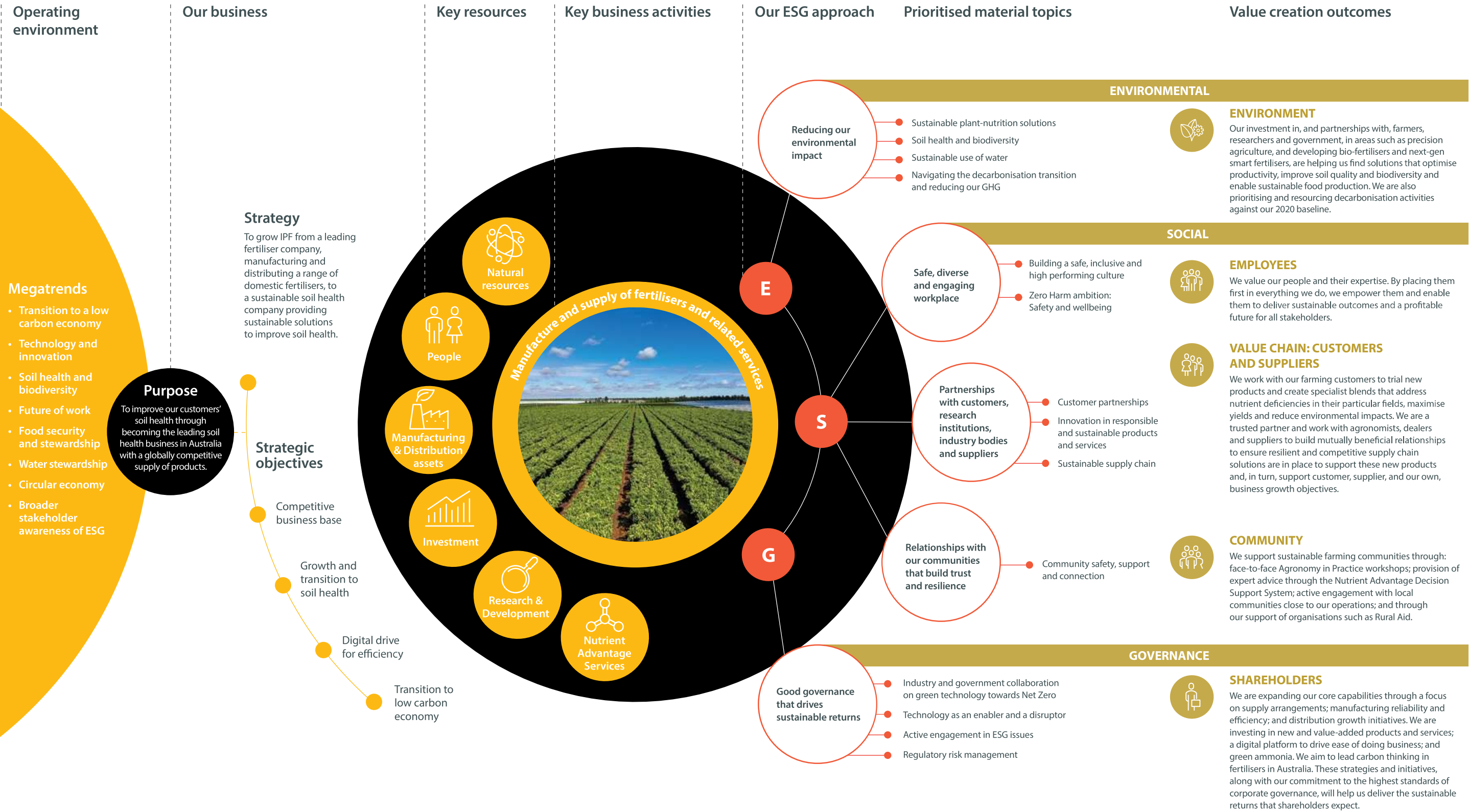
★ Headquarters







# How we create value







# Environmental Topics

Our fertilisers play a vital role in feeding a growing population through increasing crop yields and maximising production on existing cleared land. Through our Manufacturing Excellence, Leading Technology Solutions and Customer Focus strategic drivers we aim to provide leading soil health solutions for our customers while reducing their environmental impact, as well as the impacts of our own operations.

## Soil Health and Biodiversity

IPF has a proud history as a fertiliser company, producing and distributing a range of fertilisers to support the Australian agricultural industry. Today we are evolving to become a sustainable soil health company focused on improving our customers' most important asset, the soil.

Soil health continues to be recognised as a key farming priority. As such, we are seeing increasing demand for solutions that address challenges faced by growers, such as variations and declines in soil health across arable land, which are impacting yields.

Soil biodiversity is an essential component of healthy soil, because soil organisms cycle nutrients, making them available to plants, improve water entry and storage, provide resistance to erosion, aid in carbon capture and break down organic matter. For these reasons, sustainable soil health includes restoring soil biodiversity in farmland soils where it has been reduced over time.

The ability to measure and monitor soil's key characteristics is essential to improving soil health. IPF's analytical laboratory, Nutrient Advantage (NA) offers specialist soil, plant and water testing to advisors and farmers, and tests approximately 200,000 soil, plant and water samples each year. As of 2023, this operation has been providing nutritional analysis services for farmers for 60 years.

In 2022, the NA laboratory became the exclusive supplier of laboratory services to Precision Agriculture. Together, we are collecting, curating and interpreting spatial soils data for soil nutrient mapping, including through Precision Agriculture's innovative geo-spatial information system (GIS) platform, Soli. Precision Agriculture's methodology for intensive soil management enables a more advanced understanding and management of paddocks.

The strategic alliance between IPF and Precision Agriculture will further upgrade the agronomic data and infrastructure available to dealers, agronomists and consultants, helping farmers achieve more productive and sustainable outcomes.

Our work in improving soil health is underpinned by our extensive distribution footprint. IPL's fertilisers business operates in all Australian States other than Western Australia. This geographical diversity means we serve a wide variety of growers across a wide variety of crops and local ecosystems. Our strong focus on customer relationships allows us to understand the different needs of a variety of customers, and tap into the local knowledge of farmers and advisors in those different ecosystems.

## Soil Health Test Package

Introduced in 2022, our Soil Health Test Package enables analysis of the interactions between the biological, chemical and physical elements of soil and how they impact soil health. By understanding the differences in interactions, farmers can make targeted improvements to their under-performing areas and increase productivity and sustainability. Our soil health test package also interprets the results and provides recommendations on how to improve those areas.

This enables a more advanced understanding and management of paddocks, allowing farmers to adapt fertiliser application as soil characteristics change across a field. The result is application of the right product at the right place to achieve maximum yields while reducing the total amount of fertiliser applied, reducing the potential for nutrient losses to the environment. We are currently also consulting with a range of institutions to find additional, innovative solutions to enhance soil health. Our research partnerships are listed on page 22 of our [2023 GRI Index and Data Supplement](#).

Our soil health strategy is underpinned by our approach to fertiliser use, which is outlined on the following page.



IPF’s laboratory testing facilities and services play a key role in supporting the partnership with Precision Agriculture. Our soil health strategy is underpinned by the following approach to fertiliser use:

<div>USE ONLY WHAT IS NEEDED</div> <div></div>	<div>Nutrient Advantage</div>	<div>Soil health starts with building a strong base of soil, crop and nutrient knowledge.</div>	<div><ul style="list-style-type: none"><li>– We operate Australia’s largest state-of-the-art soil, plant and water testing laboratory.</li><li>– Our soil testing, undertaken by experienced agronomists, generates customised fertiliser-blend recommendations for our farming customers to optimise nutrient efficiency and yields.</li><li>– Our aim is to expand our existing advisor network and service offering to double the number of tests over the next five years by adding capacity and enhancing testing ranges.</li></ul></div>
<div>USE IT WHERE IT IS NEEDED</div> <div></div>	<div>Partnering with Precision Agriculture</div>	<div>Variation in yields and soil is not addressed by conventional application. Technology and automation can enable variable rate application, delivering precise quantities to each location.</div>	<div><ul style="list-style-type: none"><li>– IPF is the exclusive supplier of laboratory services to Precision Agriculture.</li></ul></div>
<div>USE IT EFFICIENTLY</div> <div></div>	<div>Liquid Fertilisers</div>	<div>These are a proven, easy, safe and more precise way to deliver large-scale applications.</div>	<div><ul style="list-style-type: none"><li>– In FY22, IPL finalised the purchase of the Easy Liquids (formerly Yara Nipro) liquid fertiliser business on the east coast of Australia. We continue to run agronomy workshops to share our knowledge on liquid fertilisers.</li></ul></div>
	<div>Australian Bio-Fertilisers</div>	<div>Continued investigation and testing of organo-mineral fertilisers produced from processed poultry waste and mineral fertiliser. The resulting pelletised product allows farmers to apply both organic and traditional applications in a single pass and fits the circular economy megatrend.</div>	<div><ul style="list-style-type: none"><li>– We continue to test organo-mineral fertilisers and investigate the potential for commercial scale manufacturing.</li></ul></div>
<div>USE IT, DON’T LOSE IT</div> <div></div>	<div>Enhanced Efficiency Fertilisers (EEFs)</div>	<div>These products help minimise nutrient losses to waterways and to the atmosphere as GHG emissions.</div>	<div><ul style="list-style-type: none"><li>– We have leading proprietary inhibitor brands and continue to invest in capacity and capability to develop, support and drive growth in EEF products as the drive to decarbonise intensifies.</li></ul></div>

Sustainable Plant Nutrition Solutions

**Enhanced Efficiency Fertilisers for more sustainable crop nutrition**

Our Enhanced Efficiency Fertiliser (EEFs) range has been shown to reduce GHG emissions from fertiliser use on farms by up to 76% in one instance<sup>1</sup>. EEFs work by keeping nitrogen in stable forms in the soil for longer, optimising their uptake by plants and reducing the risk of nutrient run-off and losses to the air as nitrous oxide, a GHG. This year we participated in an industry association review to submit a method to formally quantify the GHG reductions associated with EEFs.

We have been actively promoting the use of these products and working with customers to help optimise their use. A core part of this approach is a go-to-market strategy to engage with and inform farmers and so drive greater demand. To ensure customers get access to the products they need we have upgraded investment to provide the coating and blending capacity required for greater EEFs sales. We are also making enhancements to our supply chains to source ingredients to meet growing EEF demand.

We are a lead partner in the Australian Research Council (ARC) funded Hub for Smart Fertilisers (the Hub), investing nearly A\$4m in this project. The focus of Hub research is on increasing nitrogen use efficiency (NUE) through a better understanding of how plants capture and use nutrients. This R&D investment aims to provide the required knowledge to improve NUE through strengthening our existing EEF range. Because improved NUE also reduces our customers’ on-farm GHG emissions, these will also reduce IPF’s downstream scope 3 emissions. (see ‘Nitrification inhibitors in EEFs slash on-farm GHG emissions’ on the following page).

We have also continued our work on developing silicon-based fertilisers that have been shown to increase stress resistance in crops and replace silicon lost from soils in certain crops. The results to date suggest these products may improve crop tolerance of abiotic stresses, such as heat stress, which may be of value in a warming world.<sup>2</sup>

**Trigger humic acid with high organic carbon content**

To further help farmers improve the health and quality of their soils, we introduced a granular humate to our range of products last year, which can be co-located with applied fertilisers. Trigger® is an air-dried, low-dust product, with a high concentration of humic acid which not only improves soil health and quality, but also imparts its benefits directly into the root zone, increasing nutrient availability. This can lead to increased yield and crop quality and may help mitigate the effects of abiotic and biotic crop stresses.

**Our Easy Liquids Range**

IPF acquired the YaraNipro liquid fertiliser business in 2022, rebranding it as Easy Liquids. The advantages of liquid fertiliser products include easy handling, easy storage on farm and resistance to deterioration while in storage. They can also be applied using a wide range of existing farm application equipment and can be applied with precision through modern fertigation systems, which incorporate application with efficient irrigation techniques. Additionally, liquid fertilisers can be applied in any season, wet or dry, enabling flexibility for farmers when planning their programs. This is a crucial benefit, as the ability to adapt to changing environmental conditions has become a key issue for Australian farmers to manage the impacts of climate change.

Through our Easy Liquids range, and our market growth strategies, we anticipate significant growth associated with the continued roll-out of these products. Aligned geographically with IPF’s broader business, the Easy Liquids operations located in Moree and Whitton in New South Wales, and Boundary Bend in Victoria, are strategically located in key irrigation markets on Australia’s east coast.

IPF’s ongoing investment in liquid fertilisers, combined with the soil testing and analysis capabilities of its Nutrient Advantage Laboratory and our support of the ARC Research Hub for Smart Fertilisers, are all part of our work to improve productivity and soil health for our farming customers.

**Circular Economy Solutions**

As noted in our case study on nitrification inhibitors in EEFs on page 64, we continue to investigate and test organo-mineral fertiliser products which include treated organic wastes such as chicken manure. In another circularity initiative, IPF has recovered 3 million kilograms of our woven polypropylene fertiliser bags from customers since 2015. These are sent for recycling through the Australian Government Accredited Product Stewardship scheme, Big Bag Recovery. Read about this initiative in the waste section on page 67.

1. Meng, Y., et al (2021) Geoderma, Nitrification inhibitors reduce nitrogen losses and improve soil health in a subtropical pastureland (388). <https://www.sciencedirect.com/science/article/abs/pii/S0016706121000215>.

2. Guntzer, F., Keller, C. and Meunier, J. (2012) Benefits of plant silicon for crops: a review. Agronomy for Sustainable Development, Springer Verlag/EDP Sciences/INRA, 2012, 32. (1), pp.201-213. [ff10.1007/s13593-011-0039-8](https://doi.org/10.1007/s13593-011-0039-8)ff. fffhal-00930510.

\* Trigger is a registered trademark of IFO.





## Nitrification inhibitors in EEFs slash on-farm GHG emissions

In late 2022, IPF tested using fertilisers treated with the nitrification inhibitor, dimethyl pyrazole glycolate (DMP-G), which has been shown to reduce nitrous oxide (N<sub>2</sub>O) emissions. This research is important for the decarbonisation of the agricultural sector, because nitrous oxide is a GHG with a warming potential 265 times higher than CO<sub>2</sub>.

Using eNpower® EasyN®, a combination of our proprietary nitrification inhibitor containing (DMP-G), and urea ammonium nitrate solution, we recorded a 64% reduction in N<sub>2</sub>O emissions over the 36-day experiment.

With more nitrogen being retained in the soil, farmers may be able to maintain current yields with less applied nitrogen, or grow increased yields with existing nitrogen application rates. Improved nitrogen use efficiency is a key objective for IPF's research, as it reduces GHG and improves productivity.<sup>1</sup>

In 2023, field trials continued to show substantial reductions in GHG with the use of inhibitors. In partnership with Latrobe University, we tested a blend of organo-mineral fertilisers applied to celery crops. The use of organo-mineral products and dimethylpyrazole phosphate (DMPP) treated synthetic fertiliser reduced N<sub>2</sub>O emissions by between 55% and 82% compared with the standard practice of applying chicken manure and inorganic fertiliser during the cropping cycle.

A separate trial aimed to quantify the effect of our Trigger humic acid granule when applied with NPKS fertiliser at a cabbage field in Bacchus Marsh. GHG emissions were sampled at pre-determined intervals using static chambers and analysed, with the initial results showing promising reductions in GHG with the use of Trigger. See our 2023 Climate Change Report for some of the data from this trial.

Measurements will continue over the next few months with further data on biomass, tissue and soil analysis to be collected.

## Navigating the decarbonisation transition and reducing our GHG

As a manufacturer of emissions-intensive ammonia-based fertiliser products, IPF is committed to reducing its GHG emissions and has identified a pathway to a potential 44% Paris-aligned reduction by 2030. See the Gibson Island green ammonia project discussed on page 89 of our Governance Topics section under 'Industry and Government Collaboration on Green Technology Towards Net Zero'. Our Net Zero Pathway to 2050 is presented in Chapter 2 of the [2023 IPL Climate Change Report](#).

### Managing scope 3 emissions

Scope 3 emissions are indirect GHG emissions that arise from third parties in our value chain, such as our suppliers, and their suppliers. Scope 3 also includes the GHG emissions associated with the use of the products we sell.

For IPF, the most significant scope 3 emissions sources are the on-farm nitrous oxide (N<sub>2</sub>O) emissions from the use of our fertiliser products by our customers. For this reason, our EEF range will form a key part of our Scope 3 management strategy. See the case study on EEFs on the left.

We are also working to integrate scope 3 management into our procurement systems. By 2025, we aim to have a framework and systems in place that allow us to track and manage our upstream scope 3 GHG just as we manage other aspects of our supplier relationships. Please refer to Chapter 3 of the [2023 IPL Climate Change Report](#) for detailed insight into IPF's scope 3 reduction strategies.

### Climate-related financial risks

For a detailed discussion of the identified risks and opportunities associated with climate change for IPF, and our management strategies, see Chapter 4 of the [2023 IPL Climate Change Report](#).

## Sustainable use of water

At IPF, we treat water as a precious resource. Large volumes of high quality cooling water are required for the manufacture of ammonia at our Phosphate Hill and Gibson Island facilities, and water is also a key input for the manufacture of sulphuric acid at Mt Isa, which is used to make ammonium phosphate fertilisers at Phosphate Hill, and for the manufacture of single super phosphate (SSP) fertiliser manufacture in Geelong.

Water management strategies during 2023 included the reclamation of 146,950kL of water from waste gypsum piles at our Phosphate Hill site. This allowed the extraction of fresh groundwater to be reduced as well as the recapture of valuable phosphates from the water. At Gibson Island, 149,580kL of process water was recycled through an on-site reverse osmosis water treatment plant, 70,577kL of stormwater was captured for use and 371,762kL of purchased recycled water was used.

At Geelong, 28,265kL of stormwater was captured and treated for reuse. This reduces municipal water use and prevents high nutrient rainwater leaving the site. At Mt Isa, steam used in the on-site electricity generation turbine is condensed for reuse and any water drained from our cooling towers is returned to the nearby metal ore mine as process water. At our Townsville PDC, we have increased our capacity to collect and store 'first flush' rainwater and reuse this captured water for cleaning activities and the site wheel bath, reducing site water use.

## Managing water risk

We conduct an annual water risk assessment for our manufacturing sites, using the World Resources Institute (WRI) Aqueduct Water Tool. The Tool provides projections of rainfall, population and expected baseline water stress for each region to 2025, 2030 and 2040. In addition, our future climate-related scenarios indicate that average annual rainfall across the lower half of Australia is likely to be reduced and longer periods of prolonged drought may be created potentially resulting in water restrictions becoming more frequent in some areas, including Gibson Island, Geelong and Mt Isa.

In addition to the water saving strategies above, our Gibson Island site is connected to a recycled water source to manage the risk of water restrictions impacting on future production. See the case study to the right. A similar project is being investigated for our Geelong site. At Phosphate Hill where our facility and our farming neighbours depend on groundwater, we conduct modelling, using 39 monitoring bores, to assess any potential changes across the embayment. We also submit an annual performance report to the Queensland Government Department of Natural Resources and Mines each year, as well as completing an annual aquifer review. Work in 2023 has confirmed that water is not a risk at this site in the short to medium term. We plan to extend this work on water risks to our Mt Isa site in 2024.

### Remediating groundwater impacts at Gibson Island

The cessation of natural gas based manufacturing at Gibson Island and the decommissioning of the ammonia and urea plants has allowed IPL to begin assessing and investing in the remediation of legacy environmental impacts since the plant was built in 1969. As part of this work, we identified potential groundwater contamination and, in line with our corporate values, proactively approached the regulator to collaborate on a prompt and effective management plan.

This has resulted in the planned construction of a \$13m wastewater plant that will process the groundwater to remove contaminants in line with environmental licence limits. Using biological treatment, the plant will address nitrogen, phosphorus, zinc and other contaminants via nitrification, denitrification and clarification processes.



## Managing water risks at Gibson Island

Our Gibson Island site in Brisbane, Queensland, is in a catchment currently assessed by the WRI Aqueduct Water Tool as subject to high (40-80%) baseline water stress and high 'physical risk – water quantity' due to a relatively large local population and high inter-annual variability in rainfall. The Water Tool also predicts that baseline water stress in the catchment will double by 2030 due to climate change and a growing population. Water will continue to be required to produce hydrogen via electrolysis of water at this site should the Gibson Island Green Ammonia project proceed.

During 2021, IPL collaborated with Seqwater, the Queensland Bulk Water Supply Authority, and Urban Utilities to enable the supply of recycled water to the IPL Gibson Island site. We invested A\$4m in a dedicated pipeline that allowed around 6,000kL per day of recycled water to be delivered for use up until natural gas based manufacturing ceased in December 2022. This project underpinned our three-year target of a 25% reduction in Australian municipal water use by 2023 against a 2020 baseline. The target was exceeded, with a 42% reduction in 2023, due in part to the cessation of natural gas based manufacturing during the year.

The recycled water connection not only secures an uninterrupted supply in the event that municipal water supplies are restricted – it also means that more water is left in municipal water supply dams for our local community.

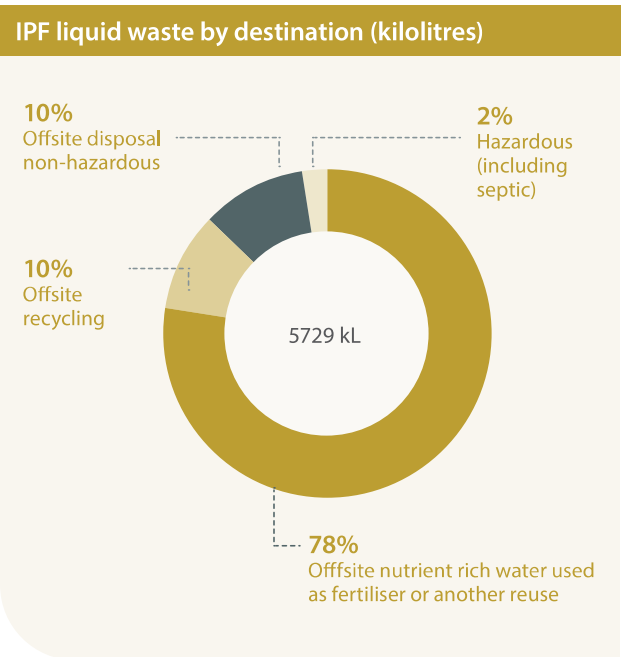
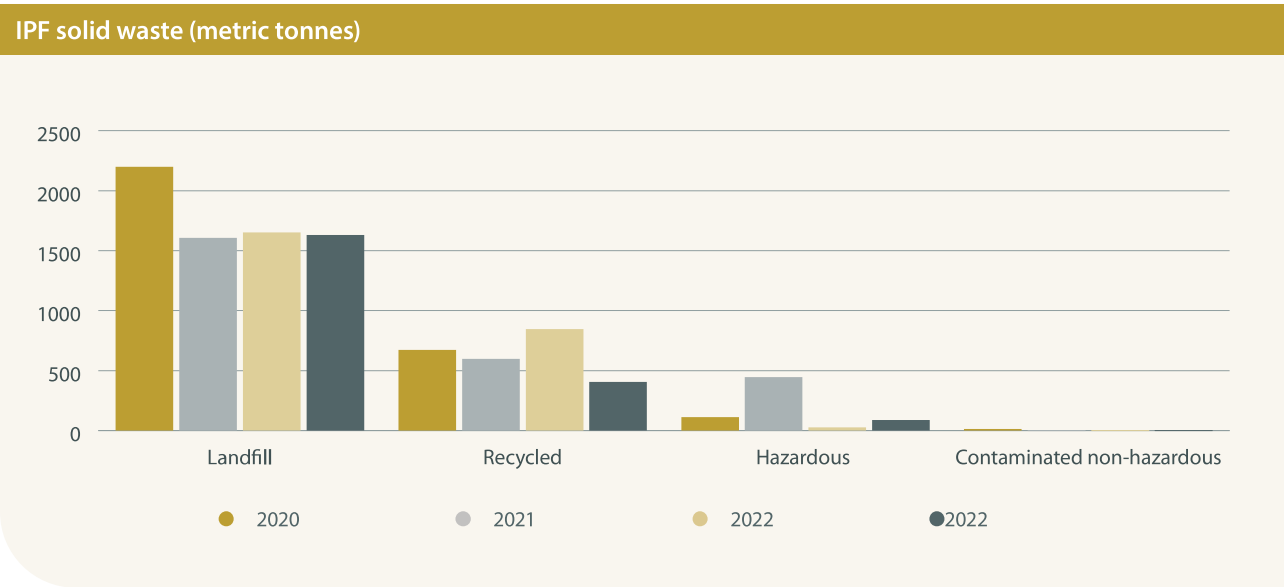
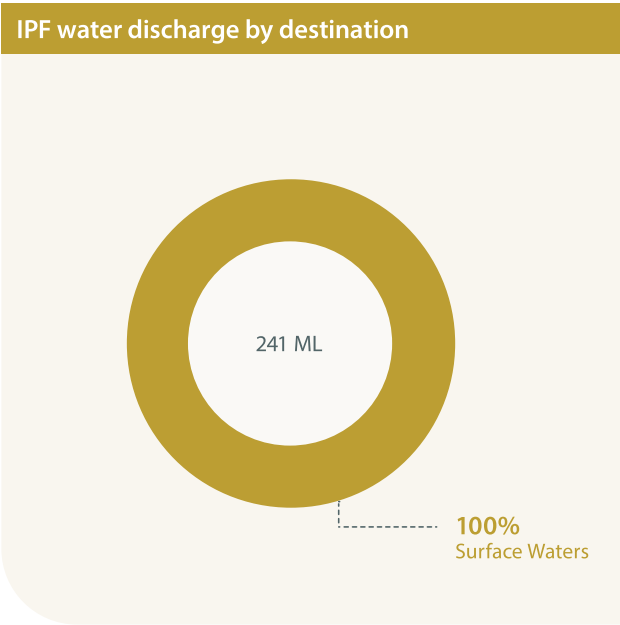
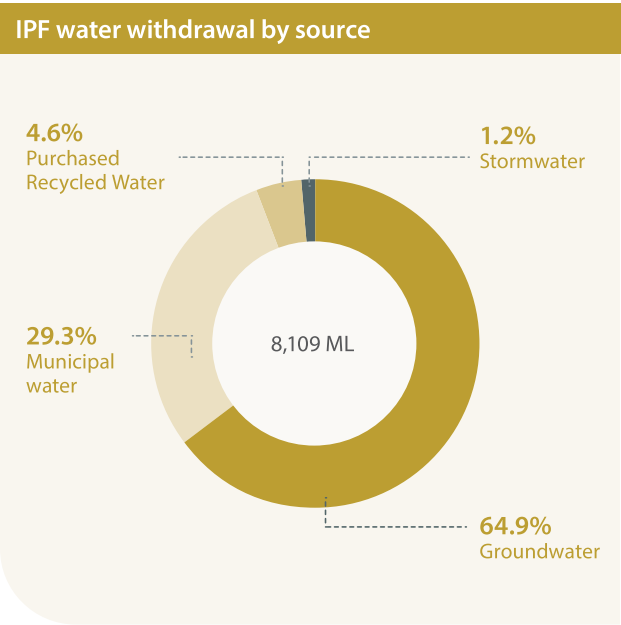


## Innovation in environmental controls

Staff at IPF now use iAuditor across manufacturing and distribution sites. As highlighted in our TNFD-aligned 'LEAP Assessment', the prevention of fertiliser spills to the environment is a key focus for our business to manage the risk of potential release of nutrients to the environment through loss of containment incidents. This technology is an iPad-based software which assists us to monitor environmental issues and controls. The use of a dashboard enhances accountability and visibility.

1. Meng, Y., et al (2021) Geoderma, Nitrification inhibitors reduce nitrogen losses and improve soil health in a subtropical pastureland (388) at <https://www.sciencedirect.com/science/article/abs/pii/S0016706121000215>.





**Increasing the recycling and reuse of solid waste**

In 2023, IPF reduced overall solid waste by 16%, generating 2,120 tonnes of solid waste compared to 2,520 tonnes in 2022. Due to the decommissioning of equipment associated with the cessation of natural gas based manufacturing at Gibson Island in Queensland, our hazardous waste increased from 25 tonnes in 2022 to 87 metric tonnes in 2023.

In addition, 3,175,868 tonnes of phosphogypsum waste was stockpiled on lined pads for dewatering at our Phosphate Hill ammonium phosphate manufacturing facility in Queensland. This waste is considered hazardous due to its low pH. It is planned that these stockpiles will be capped and vegetated to match local landforms.

We also continued to promote the collection and recycling of our fertiliser bags through Big Bag Recovery, who collected 310 tonnes of our woven polypropylene (WPP) plastic packaging from our farming customers and dealers for recycling.

**Liquid waste by destination**

In 2023, of the 5,729 kilolitres (kL) of liquid waste sent offsite, 4,442 kilolitres or 77.5% of this was nutrient-rich water repurposed as a fertiliser product by farmers or used for another purpose downstream, such as woodchip additive. Our 2023 liquid waste total includes 129 kilolitres, or 2.2%, that is hazardous liquid waste.



**Upcycling waste into energy**

In June 2023, IPF announced an agreement with QEM Limited to provide the latter with vanadium-rich spent catalyst from its Mt Isa sulphuric acid plant, in order to create vanadium redox flow batteries (VRFBs).

This is an outstanding example of circular economy opportunities being captured by IPF – upcycling manufacturing waste to produce VRFBs, an Australian invention, and likely to play an important role in achieving Australia's decarbonisation ambitions. The agreement will be in place for five years.





### Why is the Taskforce on Nature-related Financial Disclosures (TNFD) important?

**With the recognition that a changing climate can impact on the financial returns of companies, there is also increasing recognition that the rapid decline in the state of nature more broadly, including natural ecological systems, also poses risks for businesses.**

Natural resources are the basis of the goods and services we use in everyday life. More than half of the world's economic output – US\$44 trillion of economic value generation – is highly or moderately dependent on nature-based systems. As a supplier to the agricultural sector, we understand that our customers interact directly with natural resources such as water and soils, and depend on natural systems such as the water cycle, nutrient cycles, and the atmospheric cycles which create our weather. These are required to grow the food and fibre, such as cotton, that are not only required to sustain our populations, but that our customers depend on for their livelihoods. The Taskforce on Nature-related Financial Disclosures (TNFD) aims to help businesses account for nature-related risks and opportunities in their decisions.

For IPF, these decisions relate not only to the provision of products and services that help our customers improve soil health and reduce their environmental impacts, but also to our own operations. We recognise that these also depend on natural resources and can impact local environments. In view of this, we conducted an initial TNFD LEAP<sup>1</sup> assessment during 2023.

This assessment is a first step towards:

- » **Developing a more informed understanding of how nature-related risks and opportunities affect our business performance, reputation and future, and taking actions to address these.** In the same way that we have assessed how climate change may impact the sustainability of our business, this LEAP assessment is the first step in assessing and managing risks and opportunities associated with the nature-based assets we depend on.
- » **Getting ahead of the curve on the evolving TNFD framework, identifying any gaps in capability and knowledge to develop an integrated approach ahead of the framework's wider adoption.** With the release of the final TNFD framework in September 2023, IPF is likely to be one of the first businesses to engage with it, allowing us to identify focus areas to strengthen our management strategies.
- » **Demonstrating our commitment to investigating the value of the natural assets and broader environment on which we, our agricultural customers, and wider society depend.** In addition to our commitment to Zero Harm which extends to the environment, IPF aims to become Australia's leading soil health company, improving the health of soils and reducing the impact of our products and our operations on the ecosystems we interact with.

1. The LEAP approach for corporates involves four core phases of analytic activity: Locate your interface with nature; Evaluate your dependencies and impacts; Assess your risks and opportunities; and Prepare to respond to nature-related risks and opportunities.



## IPF and Natural Systems

IPF's long-term strategy is to grow from a leading fertiliser company, manufacturing a range of domestic fertilisers, into a sustainable soil health company that provides sustainable plant nutrition solutions to improve soil health. This makes good business sense, and it presents us with an opportunity to better understand the natural cycles of which we are a part.

As a fertiliser business, IPF's products interact with important natural cycles that support plant growth and can also impact animal and plant biodiversity. Our fertilisers contain nutrients that are part of the nitrogen and phosphorous cycles; the soils and crops they support interact with the water cycle and carbon cycle; and through our manufacturing processes, we use water, and fuels that are part of the carbon cycle.

Through our Net Zero Pathway, we are actively seeking to decarbonise our operations and reduce our GHG emissions, and we continue to develop products and services which reduce impacts relating to the overuse of nitrogen and the depletions of soils. These include our EEF range, which aims to increase nitrogen use efficiency and reduce losses to waterways and to the air as GHG; our Trigger humic acid product; and precision agriculture and our soils and plant testing services, which enable the sustainable and efficient application of nutrients.

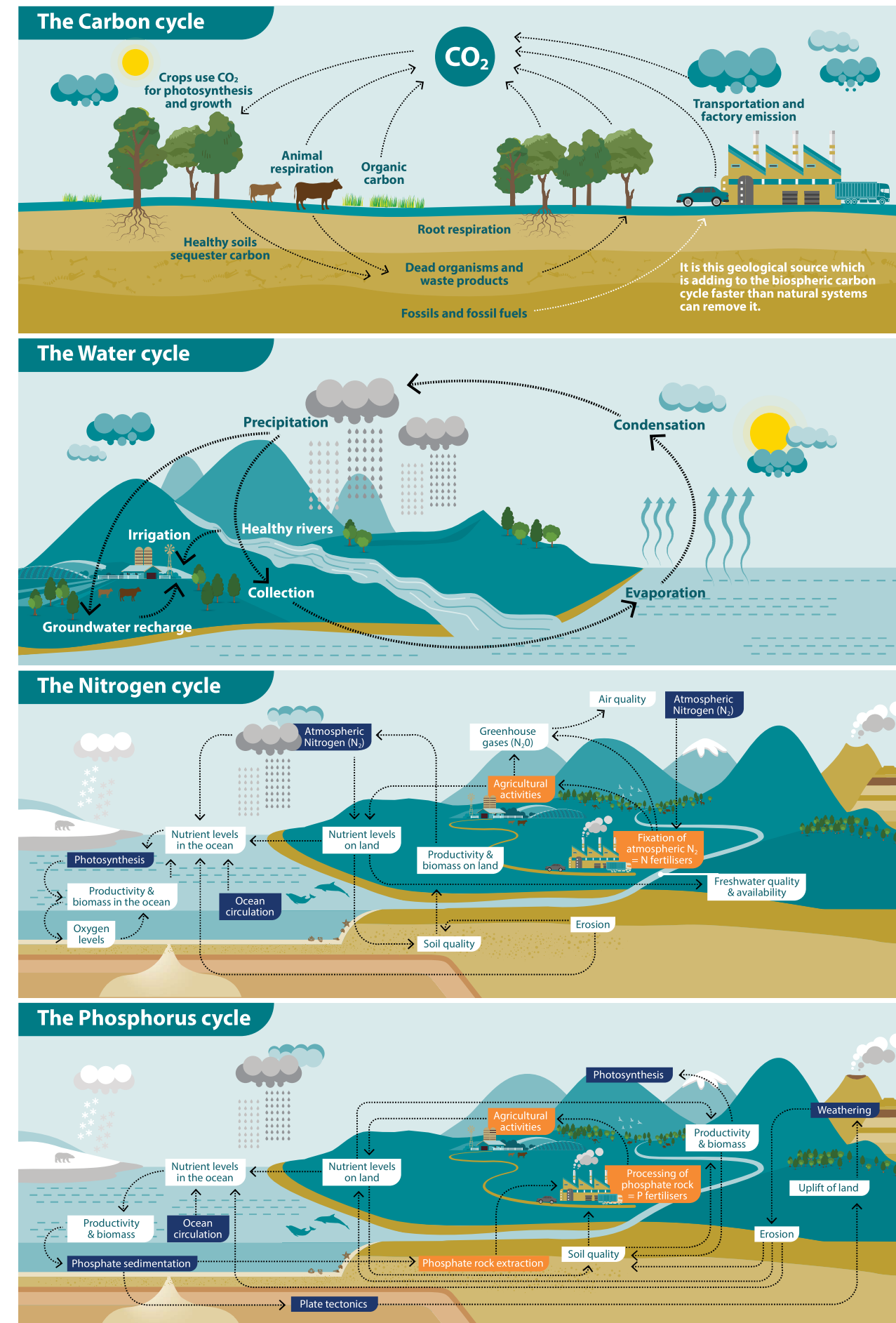
This approach is in line with our values of Zero Harm for Everyone Everywhere, Care for the Community and our Environment, and Challenge and Improve the Status Quo – and strengthens our wider commitment to being a sustainable business.

The steps in our inaugural LEAP Assessment comprised the following:

1. An analysis of how IPF's operations and products (downstream) intersect with natural ecosystems, including ecosystems of concern, has been undertaken in accordance with the TNFD's 'LEAP' framework<sup>2</sup>. The LEAP framework comprises the following phases:
  - » **Locate** their interfaces with nature.
  - » **Evaluate** their dependencies and impacts on nature.
  - » **Assess** their nature-related risks and opportunities.
  - » **Prepare** to respond and report on these.
2. In line with the LEAP framework, a subset of seven high-priority sites was identified, with three sites selected for deeper analysis: Geelong SSP Manufacturing site, Cairns PDC, and our research farm at Colonsay.
  - » The Cairns PDC and Geelong manufacturing sites were selected for deeper analysis as they are large sites that are representative of a wide range of operations across the IPF business, and are located close to areas of high biodiversity importance.
  - » The Colonsay Farm site is a research farming site and was chosen as a proxy for a range of farming customers. This site has used farming practices similar to those of local farmers in the region since 1985, and provides many years of data relating to fertiliser use and other farming practices.
  - » For the purposes of this inaugural LEAP assessment, these deep-dives serve as 'case studies'. A fully detailed LEAP assessment may deliver similar findings for each of IPF's other seven high-priority sites.
3. Finally, an analysis was conducted to identify key nature-related risks and opportunities across the business. This analysis drew on the first two steps of the LEAP assessment above and IPF's existing soil health strategy.

2. While the TNFD framework also recommends analysis of upstream (supplier) level impacts and dependencies on nature, this has not been included in our initial assessment.

## Natural cycles which IPF and its customers interact with and depend on.





# LEAP Assessment framework

PHASE 1

LOCATE

Interface with nature

51  
IPF sites identified  
across Australia

26  
were prioritised as being of larger scale  
and importance, based on analysis of the  
scale of their operations and their likely  
impact on nature.

7  
sites emerged as highest  
priority, in view of their  
overlap with a large number  
of ecosystems under stress.  
These were: Cairns,  
Devonport, Geelong, Gibson  
Island, Kooragang Island, Port  
Adelaide and Werribee.

**Cairns and Geelong** sites were  
selected from these seven for a  
full analysis recommended by  
the TNFD. These are covered on  
pages 74 and 75.

**Colonsay Farm**  
IPF's research-focused  
Colonsay Farm site was  
selected as an additional site,  
broadly representative of farms  
where IPF's products are used,  
to assess the impacts and  
dependencies at this interface  
with natural systems. These are  
covered on page 76.

PHASE 2

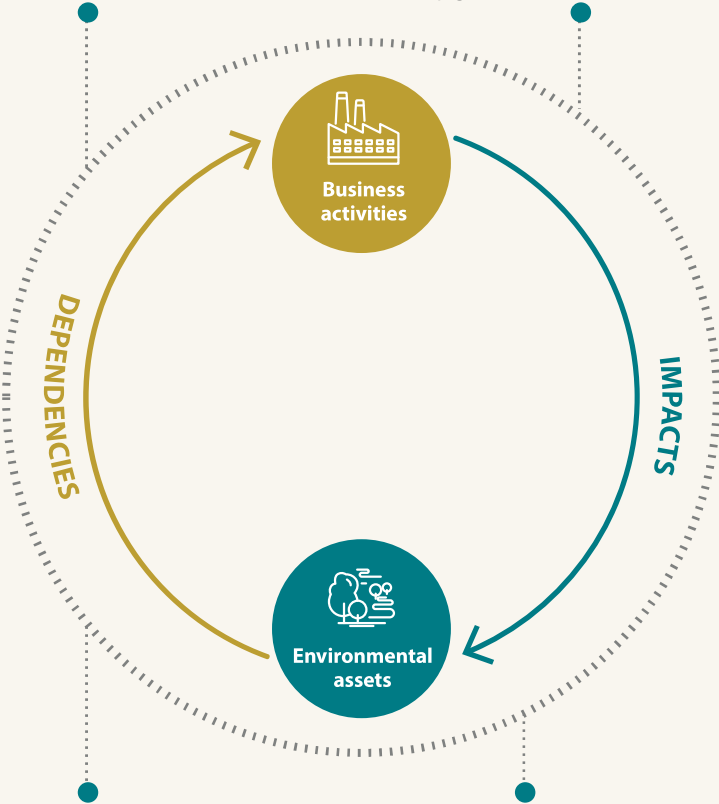
EVALUATE

Dependencies and impact

**Dominant drivers of natural impact ('impact drivers')** were mapped for the business, using the TNFD-recommended ENCORE tool.

» IPF sites were mapped against industry-relevant drivers such as water use, non-GHG air pollutants, soil pollutants and water pollutants.

**Dependencies and impacts for the Colonsay Farm site** were evaluated with reference to relevant TNFD disclosure metrics for the agriculture sector, including soil state, nitrogen use efficiency, nutrient losses to waterways, GHG from fertilisers and dependencies on natural cycles and ecosystems for crop growth.



**Taken together, the Cairns and Geelong sites intersect with 21 ecosystems, including:**

» Tropical and temperate forests, savannas and grasslands, subterranean cave and rock systems, and agricultural lands

» Wetlands, rivers and lakes, shoreline systems and marine vegetation

» Coastal inlets and lagoons, marine shelves, and ocean waters.

**Detailed assessments of each site** were conducted to understand their likely impacts and dependencies on the above ecosystems.

PHASE 3

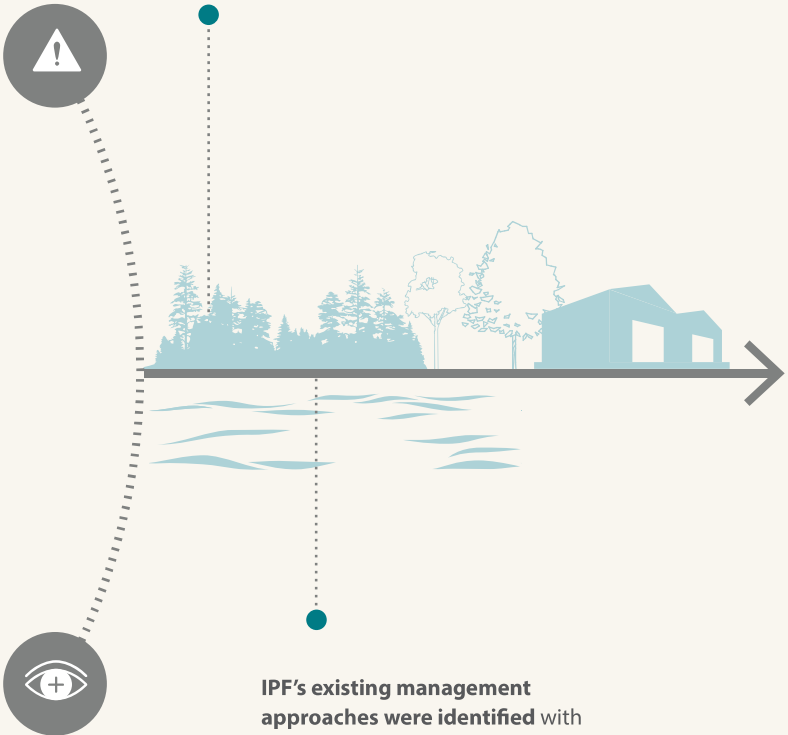
ASSESS

Material risks and opportunities

**A list of nature-related risks and opportunities was identified** as being relevant to IPF, using the outputs of the Locate and Evaluate phases.

» Risks and opportunities pertaining to land, water and atmospheric ecosystems were identified.

» Some relate directly to IPF's operations; other risks and opportunities relate to the state of broader natural systems, which can impact on relationships and networks on which IPF depends, such as customers and community stakeholders.



**IPF's existing management approaches were identified** with reference to IPF's risk management framework and business strategy. Opportunities for future management strategies, including participation in potential partnerships to track natural ecosystem health, were also identified.

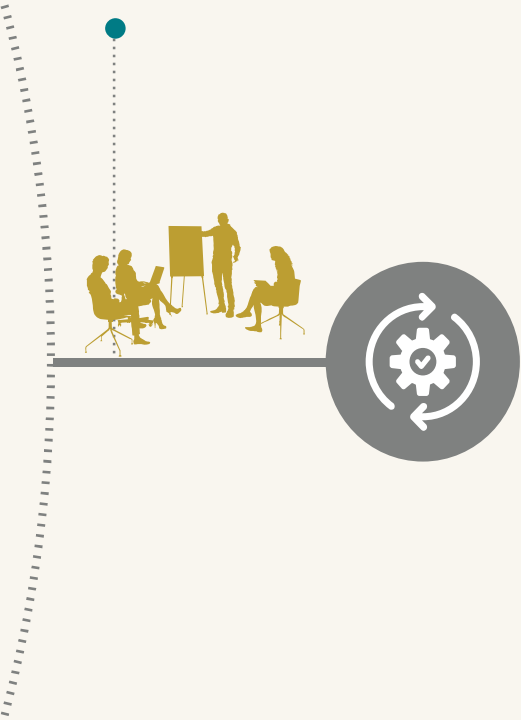
PHASE 4

PREPARE

To respond and report

The PREPARE Phase of the LEAP framework involves a business making decisions on strategy and resource allocations to respond to the risks and opportunities identified, and to prepare to report on these as per the TNFD framework.

This initial LEAP assessment examined existing management strategies for identified risks and opportunities and will inform management's consideration of additional strategies as we prepare to respond and report. It also sets the foundation for a future, deeper assessment of IPF's interactions with nature.





# Deep dive

## Geelong

### Key biodiversity areas

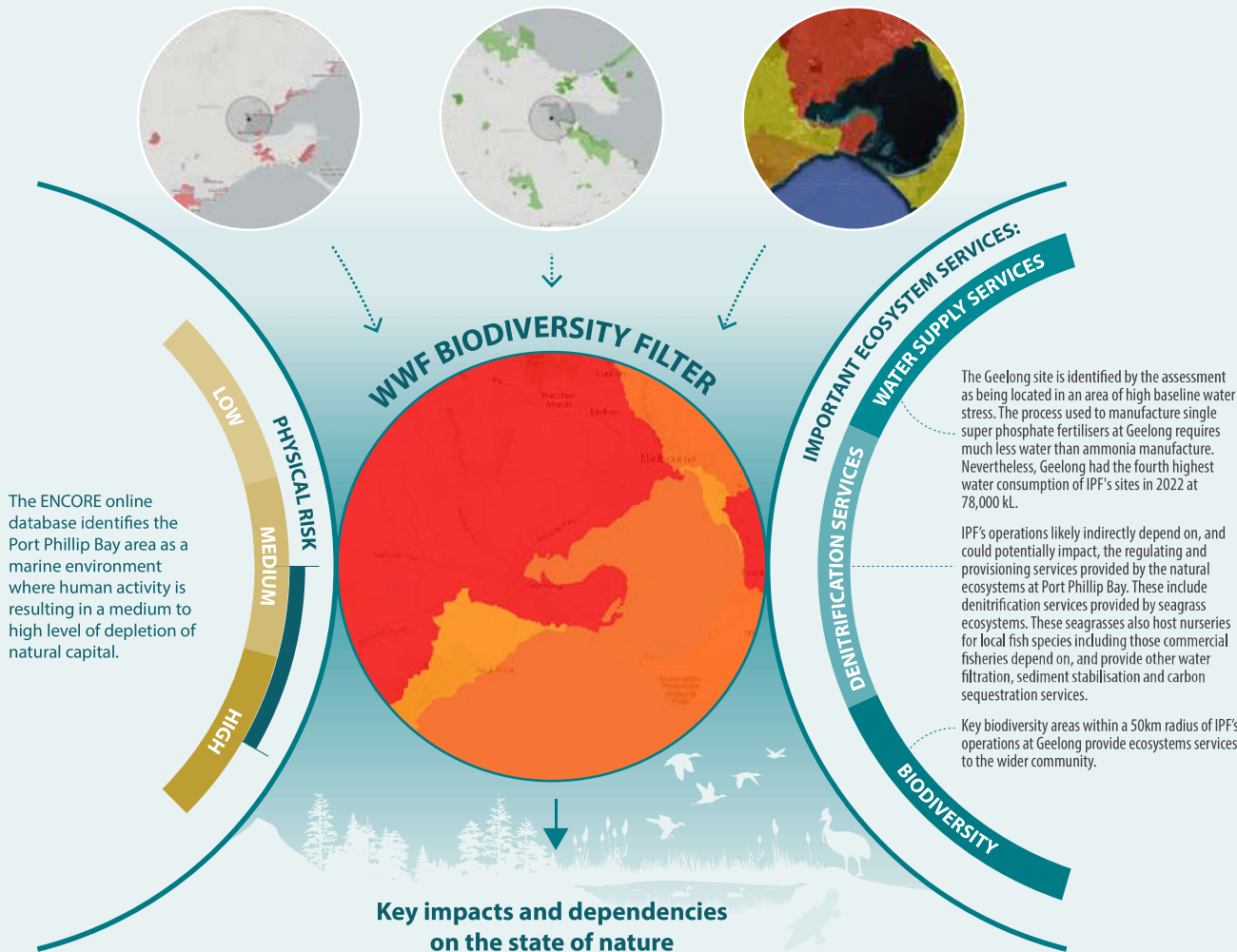
There are six key biodiversity areas within a 50km radius of IPF's operations at Geelong. There are six Critically Endangered species, and a further 31 Endangered species, in the study area.

### Protected areas

IPF's Geelong site is in proximity to a number of important ecosystems, such as Port Phillip Bay and the Bellarine Peninsula, which are both Ramsar Site Wetlands of National Importance.

### Water stress: High

According to the WRI Aqueduct water tool, Geelong has a water stress score of 4 (high) compared to an IPF site average of 1.70.



### Water

In FY22 Geelong used 78,000kL of water – IPF's third-highest consumer.

- » Sources in the upper Barwon and Moorabool Rivers are experiencing reduced flows as a result of high use by industry, farms and residents.
- » Port Phillip Bay provides significant regulating and provisioning services. In 2016 annual denitrification has been estimated at \$11bn in value, and carbon sequestration at \$350,000.
- » The health of this and other local water ecosystems are under pressure from a growing urban and industrial land use footprint.



### Water, land and air pollution

In FY22 Geelong was responsible for 35,522 tonnes of CO<sub>2</sub>e emissions (tCO<sub>2</sub>e); and NPI data for FY21 records 123 tonnes of non-CO<sub>2</sub> emissions.

- » A high proportion of NPI-reported emissions come from fluoride compounds and particulate matter. Geelong's legacy manufacturing facilities pose a challenge to controlling these emissions, suggesting the site directly depends on, and impacts, the regulating and provisioning services at Port Phillip Bay.
- » Geelong also produced 9kL of hazardous liquid waste, and 263 tonnes of solid waste, in FY22. The capture and reuse of stormwater and wastewater mitigates the outflow of these into local waterways.

## Cairns

### Key biodiversity areas

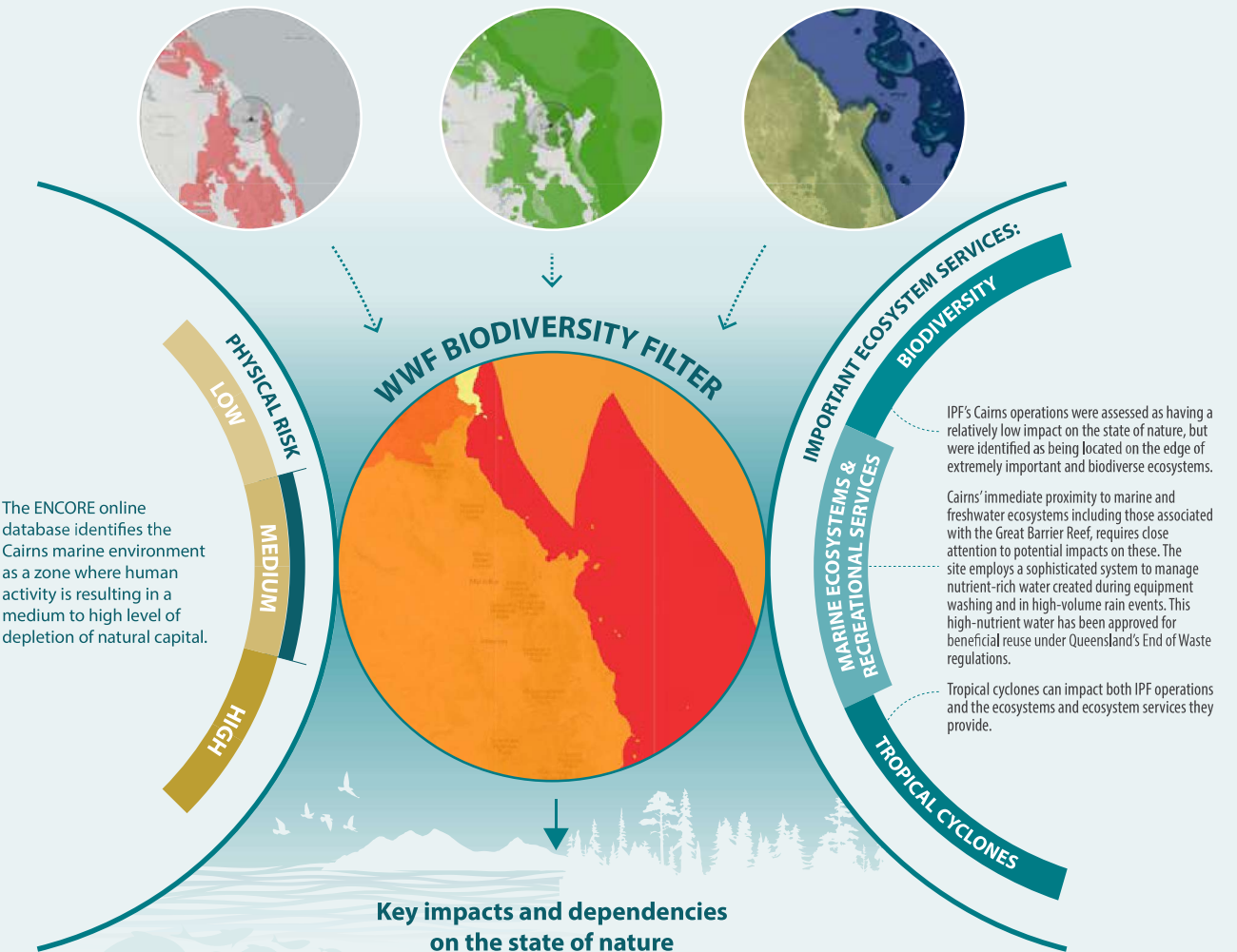
There are six key biodiversity areas in a 50km radius of IPF's site at Cairns. 14 migratory and local species are Critically Endangered, and a further 49 are Endangered.

### Protected areas

IPF's Cairns site is close to the World Heritage Great Barrier Reef, the Mandingalbay Yidinji Indigenous Protected Area, the World Heritage Wet Tropics of Queensland and seven marine parks.

### Water stress: Low-Medium

According to the WRI Aqueduct water tool, Cairns has a water stress score of 1 (low-medium) compared to an IPF site average of 1.70.



### Water

In FY22 Cairns used 300kL of water.

- » There is a low-to-moderate pressure on water supply.
- » However, Trinity Bay directly touches to the Great Barrier Reef, the value of which has been estimated at A\$6.4bn annually.
- » 90km of wetlands provide biodiversity, filtration, storm and flood protection and recreational services to human and animal communities.



### Water, land and air pollution

In FY22 Cairns was responsible for 261 tonnes of CO<sub>2</sub> emissions (tCO<sub>2</sub>e); and NPI data for FY21 records 3.9kg of non-CO<sub>2</sub> emissions.

- » NPI-reported emissions comprise fluoride compounds. These are produced only occasionally, and typically when fertilisers are moved around on-site.
- » Cairns also produced 0.4kL of liquid waste and 23.7 tonnes of solid waste in FY22.
- » Cairns employs a system to manage nutrient-rich stormwater during extreme rain events. Wastewater can be on-sold as a nutrient under Queensland's End of Waste regulations.



# Colonsay Farm

## Protected areas

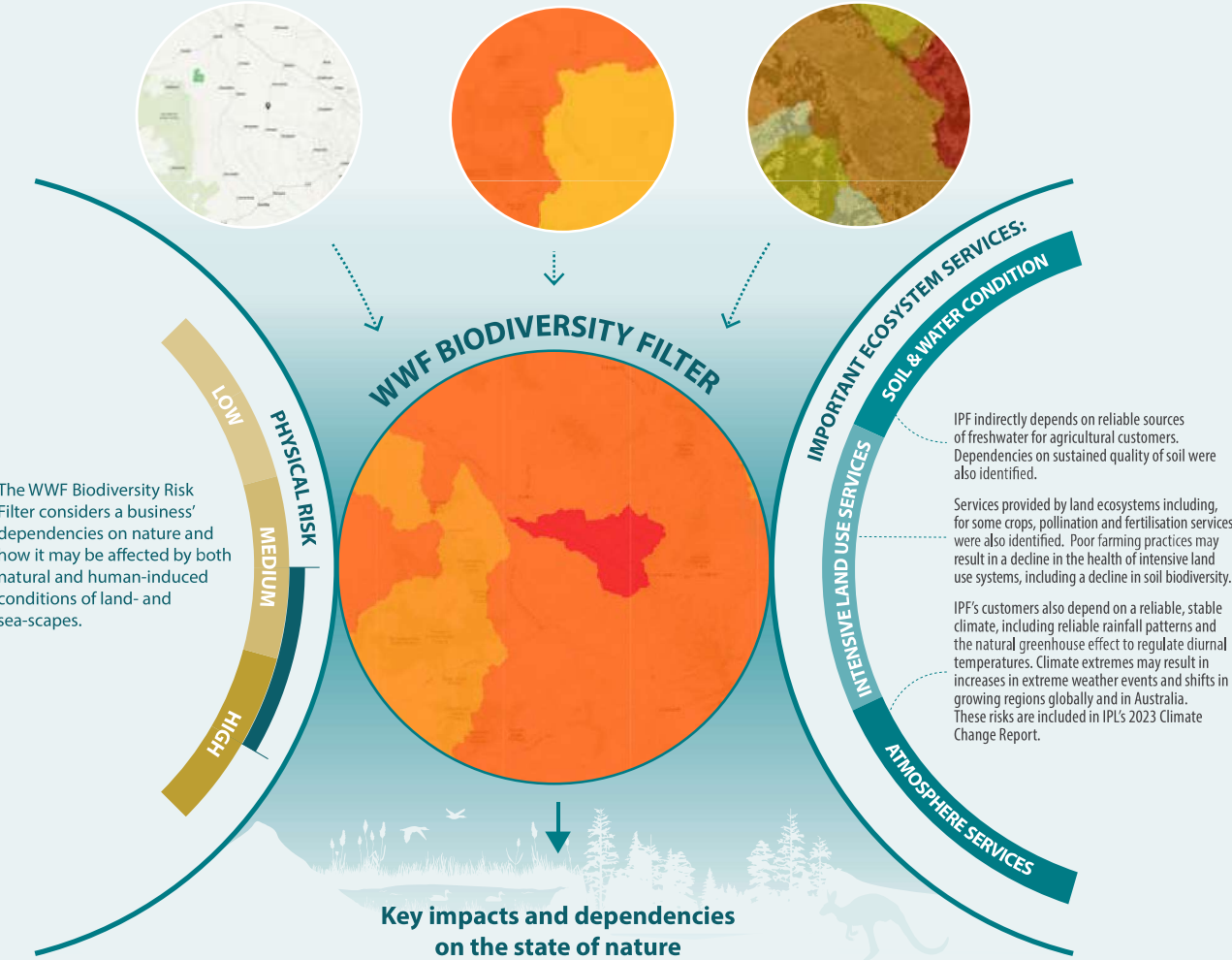
There are four protected areas within a 50km radius, and no Key Biodiversity Areas. 30 threatened species live in the area, including 10 migratory and local species considered Endangered (and one Critically Endangered).

## Soil condition

The WWF Biodiversity Risk Filter uses soil organic carbon (SOC) as a proxy for overall soil condition. SOC is essential to soil functions and food production, mitigation and adaptation to climate change. At Colonsay Farm soil condition is ranked 'medium risk'.

## Water stress: Medium-High

According to the WRI Aqueduct water tool, the Colonsay site has a medium-high (20-40%) baseline water stress (ratio of total water withdrawals to available renewable water supplies).



The WWF Biodiversity Risk Filter considers a business' dependencies on nature and how it may be affected by both natural and human-induced conditions of land- and sea-scapes.

IPF indirectly depends on reliable sources of freshwater for agricultural customers. Dependencies on sustained quality of soil were also identified.

Services provided by land ecosystems including, for some crops, pollination and fertilisation services were also identified. Poor farming practices may result in a decline in the health of intensive land use systems, including a decline in soil biodiversity.

IPF's customers also depend on a reliable, stable climate, including reliable rainfall patterns and the natural greenhouse effect to regulate diurnal temperatures. Climate extremes may result in increases in extreme weather events and shifts in growing regions globally and in Australia. These risks are included in IPL's 2023 Climate Change Report.



## Water

The Colonsay Farm uses only rainfall water.

» Although water stress is medium-high (20-40%) there is a low-to-moderate pressure on water supply in the region due to low population density, and the Colonsay Farm uses only rainfall for crops.



## Water, land and air pollution

The Colonsay Farm is located in an area assessed by the WWF Biodiversity filter as having a medium risk of nutrient loading in water bodies. This is assessed to be the most significant impact extending beyond the farm boundaries.

» Colonsay Farm research data has focused on crop yields and soil health (soil carbon content, water holding capacity and other soil nutrient content) under farming practices predominantly used in the region since 1985.

» Data on nutrient losses to ground and surface water from the site has not been collected to date.

## Preliminary summary of findings

IPF's nature-related risks and opportunities have been identified at a high level, with reference to the TNFD's fundamental concepts for understanding nature. These include interactions with biomes, environmental assets and ecosystem services, as defined by the TNFD. See the glossary on page 88 for more information.

## Relevant biomes, environmental assets and ecosystem services

IPF was found to interact with, or had the potential to impact, biomes and natural assets in the Land, Freshwater and Atmosphere TNFD realms. These included a range of biomes located in proximity to IPF sites, which stretch from Cairns in north Queensland, down the eastern coast of Australia, and across southern Australia as far as Port Lincoln in South Australia.

## Land ecosystems and the services they provide

Land ecosystems comprise soils, grasslands and bushlands, and subterranean structures. These ecosystems provide services including soil formation, soil stabilisation, supporting pollinators, filtering water, and providing food and habitat for Australia's unique animals<sup>1</sup>. Australia's land ecosystems also absorb over 700 million tonnes of CO<sub>2</sub> from the atmosphere each year<sup>2</sup>. Soil health is of particular relevance to IPF. Over 95% of the world's food is grown in soil and soil organisms provide essential nutrient recycling for plants<sup>3</sup>. Soils are home to over 25% of Earth's species with significant biodiversity found within soils<sup>4</sup>. A teaspoon of healthy topsoil typically contains up to 6 billion micro-organisms<sup>5</sup>.

Land based biomes that IPF interacts with or could potentially impact include Subterranean-terrestrial ecosystems, mineral and energy resources, terrestrial (land-based) ecosystems, and cultivated biological resources.

In addition to the soil and pollination services provided to farming customers as listed above, it was identified that IPF relies either directly or indirectly on a number of other ecosystem services provided by land based natural ecosystems, or could potentially impact services provided to others. These include water flow regulation, water purification, habitat maintenance, recreational services, cultural services, education, scientific and research services, and spiritual, artistic and symbolic services.

## Marine and freshwater ecosystems and the services they provide

Marine and freshwater ecosystems comprise oceans, coastal waters, terrestrial waters such as rivers and lakes and subterranean systems, such as aquifers. They also include the water plants, fish and shellfish found in marine, coastal and terrestrial water systems. In addition to providing seafood and water for irrigation, these ecosystems include important 'blue carbon' assets such as mangrove forests, seagrass meadows and tidal marshes which capture and store large amounts of carbon. Australia is home to 12% of the world's blue carbon ecosystems, and holds 5-11% of global blue carbon stock. The Great Barrier Reef alone accounts for around 11% of the world's seagrass blue carbon stock<sup>6</sup>.

Ecosystem services provided by marine and freshwater ecosystems that IPF depends on or could potentially impact include water supply, soil and sediment retention, water flow regulation, water purification, flood mitigation, air filtration, soil quality regulation, nursery population and habitat maintenance, local (micro and meso) climate regulation, biological control and storm mitigation. They also provide recreation-related services, education, scientific and research services, spiritual, artistic and symbolic services.

## Atmosphere and the services provided

Earth's atmosphere is vital to sustaining life. Not only does it contain the oxygen most species need to live, but it is also where our weather is created.

Atmospheric ecosystem services that IPF interacts with or could potentially impact, include atmospheric flows of energy, water vapour and gases, including GHG which contribute to climate change. Services provided to others that IPF could potentially impact include recreation-related services, education, scientific and research services, spiritual, artistic and symbolic services.

This initial LEAP assessment also examined existing management strategies for a preliminary list of identified risks and opportunities. This will inform management's consideration of additional strategies as we prepare to respond and report.



1. Australian Government, (2021) Australia State of the Environment Report.  
2. Earth Systems and Climate Change Hub (2021) Global and Regional Carbon Budgets.  
3. Australian Government Department of Agriculture, Fisheries and Forestry (2023) National Soil Strategy. [https://www.agriculture.gov.au/agriculture-land/farm-food-drought/natural-resources/soils#:~:text=Soil%20is%20vital%20to%20life,from%20soil%20and%20soil%20organisms\).](https://www.agriculture.gov.au/agriculture-land/farm-food-drought/natural-resources/soils#:~:text=Soil%20is%20vital%20to%20life,from%20soil%20and%20soil%20organisms).)  
4. Yarwood, S. et al (2020). Forest and Rangeland Soil Biodiversity. 10.1007/978-3-030-45216-2\_5.  
5. NSW Department of Planning and Environment (2023) Soil biodiversity. <https://www.environment.nsw.gov.au/topics/land-and-soil/soil-degradation/soil-biodiversity>.  
6. Australian Government, 2023, 'Coastal Blue Carbon Ecosystems'.





Food and agribusiness are critical to Australia’s economy and to the people and communities who rely on the agricultural industry. Increased efficiency and productivity are essential to the sector’s international competitiveness. Through investment, expansion and partnerships, our fertiliser business has an opportunity to play a leading role in helping Australian farmers improve profitability and, importantly, minimise their environmental impact.

Customer partnerships

In 2022 and 2023, our customers faced an array of challenges – an increasingly unpredictable climate, post COVID-19 dislocation in the supply chains of crucial commodities, volatile prices and trade tariffs and sanctions related to the Ukraine/Russia war. That conflict alone removed between 20-30% of globally traded nitrate from the market. As a result, many of the conversations we have had with customers have been about supply and price as we endeavoured to provide them with the products they required.

During 2023, we also focused on working directly with farmers to establish a range of research trials and demonstrations. These aimed to provide data on both productivity and GHG reductions associated with the use of our products on customer farms.

Our customers are increasingly focused on technical innovation to drive yield, manage cost and reduce environmental impacts. There is increasing recognition that more sustainable farming practices are required to maintain productivity, and there is a growing interest in managing on-farm GHG emissions. We are well positioned to provide leading technology solutions to meet their needs.

Innovation in responsible and sustainable products and services

Worldwide the agricultural sector used around 185.1 million tonnes of fertiliser in 2022 – a relative decline owing to a rise in prices due to the war in Ukraine. However, global consumption is expected to bounce back by 4% in 2023<sup>1</sup>. Australian fertiliser imports remained high, and were valued at A\$4.9bn in 2022<sup>2</sup>.

Our commitment to continue the development of new, sustainable fertiliser products that address the sector’s impacts, such as nutrient losses to waterways and GHG emissions, while increasing fertiliser efficiency, is demonstrated through our research partnerships and our innovative product range.

In 2023, we continued our involvement in the ARC funded Research Hub for Smart Fertilisers (the Hub) in partnership with Elders Rural Services, the University of Melbourne and La Trobe University, building on our work last year which developed a new class of nitrification inhibitors.

This year we brought our EasyNpower Liquid Enhanced Efficiency Fertiliser (EEF) to commercial production. Like our other EEFs, the product improves nitrogen use efficiency through keeping nitrogen in a stable form in the soil for longer, ensuring more nitrogen is taken up by crops and reducing losses to air as GHG and to waterways through leaching. Used in pasture systems, it can be stored for long periods on farm, giving farmers an easy to handle source of nutrients they can draw on 365 days a year. We also began work with several new farming customers on soil health testing, including testing for soil carbon.

1. International Fertiliser Association (2023), Medium-term Fertiliser Outlook 2023-27, [https://www.fertilizer.org/wp-content/uploads/2023/07/2023\\_IFA\\_medium\\_term\\_outlook\\_public\\_summary.pdf](https://www.fertilizer.org/wp-content/uploads/2023/07/2023_IFA_medium_term_outlook_public_summary.pdf).  
2. Australian Government (2022), Snapshot of global fertiliser trade, <https://www.agriculture.gov.au/about/news/snapshot-global-fertiliser-trade-sep-22>.



Sustainable Supply Chains

Maintaining robust, sustainable supply chains is crucial to our customers and our business success. Given the disruption to supply chains over the past three years, primarily due to COVID-19, the Russia/Ukraine conflict and other geopolitical developments, supply chain optimisation and risk management has become even more critical for IPF. The implications of these disruptions have included extraordinary increases and volatility in global commodity prices which in turn has led to varying degrees of customer demand disruption. In these circumstances, the predictability of demand requirements has been challenging.

Over the past three years IPF's response to the COVID-19 and Ukraine crises has proven the resilience of our supply chains. Whilst there is a level of normalisation occurring, a range of enhancements have been implemented to further mitigate these risks. Examples include an increased capacity of Phosphate Hill rail assets in the sulphuric acid supply chain; further diversification of our imported urea supply base and qualification of new phosphate rock suppliers for our Geelong SSP manufacturing facility. In addition, enhancements to trading risk management processes have been implemented.

During the past year, the IPF supply chain and procurement teams have been consolidated to enhance alignment to our business objectives. We continue to use technology to support our supplier selection processes including the Dow Jones Risk and Compliance screening tool, freight vetting tools such as the RightShip maritime ESG platform and a supply audit platform through which supplier audits and tests for supply chain risks and sensitivities can be conducted. These tools are progressively being developed with additional functionality to better support supplier due diligence and supply chain risk monitoring.

Managing modern slavery, human rights and environmental supply chain risks

During 2023, we continued to integrate the assessment of modern slavery risk and other ethical concerns into our supply chain management systems. Our operations team follow strict guidelines regarding the procurement of materials and the selection of suppliers. In addition to applying due diligence regarding sanctions and trade compliance, we avoid buying any materials where the point of origin is unclear.

We believe staff training is a key measure when it comes to managing modern slavery risk. In 2022, IPL developed and rolled out an in-house Modern Slavery training package that deploys in the native languages of staff members. The wider training program is designed for, but not limited to, regional and functional business leaders, procurement team members, human resources team members, site and operations managers, and project managers. In 2023, 109 IPF employees completed the e-learning module.

When looking at broader social and environmental risks in our supply chains, IPF's overall geographic risk is considered low, with over 90% of our Tier 1 suppliers based in Australia, a country with a relatively low level of social and environmental risk. Approximately 1% of IPF's suppliers are in high-risk countries such as China, Malaysia, Vietnam, Morocco and Togo. One of these suppliers was selected for a deep-dive audit to be completed in 2024. For more information see the [IPL Modern Slavery Statement](#).

Our manufacturing facilities: a critical source of supply

Our domestically located, large-scale manufacturing facilities provide a critical source of security of supply for our distribution business:

**Phosphate Hill** is the only domestic manufacturer of Monoammonium Phosphate (MAP) and Diammonium Phosphate (DAP) in Australia. Located 900 kilometres west of Townsville in Queensland, it has an annual capacity of over 950,000 tonnes. It has access to locally produced sulphuric acid from our Mt Isa plant, medium-term natural gas supply contracts are in place and it operates a phosphate rock mine on-site.

**Gibson Island:** Our Gibson Island plant near Brisbane produced Ammonia (Big N), granulated ammonium sulphate (GranAm) and urea until natural gas based manufacturing ceased at the site during this year, after extensive efforts failed to secure an economically viable gas supply. We worked with our employees and outplacement services to ensure a just transition for affected personnel. As outlined in the Governance Topics section, a planned repurposing of the plant to generate Green Ammonia from water electrolysis in partnership with Fortescue Future Industries is currently being assessed for a final investment decision.

**Geelong:** Our Geelong site produces Single Super Phosphate (SSP) using domestically sourced sulphuric acid and naturally occurring mineral rock.

In FY22, IPL finalised the purchase of the Easy Liquids (formerly Yara Nipro) liquid fertiliser business in Australia and acquired a majority stake in Australian Bio Fert Pty Ltd with the intent of investigating large scale manufacturing and delivering a new category of sustainable fertiliser.

In addition to its manufacturing activities, IPF is Australia's largest fertiliser importer and distributes fertiliser via its extensive network of distribution centres.

Increasing our spend with Australian First Nations businesses

Our procurement team has worked for several years to increase our spend on First Nations businesses and suppliers. In line with IPL's Innovate Reconciliation Action Plan and the development of an Indigenous participation strategy and framework, we have incorporated procedures, templates and resources into our procurement processes with noticeable outcomes. In 2023, we exceeded our targeted spend on First Nations suppliers, with a 61% increase. IPL also become a voluntary member of the Business Council of Australia's Raising the Bar program, which aims to see members steadily increase their procurement spending with Indigenous suppliers.



Urea and Perdaman

One of the key supply chain initiatives is increasing our access to urea – the most traded nitrogenous fertiliser. In early 2023, ground was broken on the Perdaman Chemicals & Fertilisers' (PCF) urea plant construction site. The world scale manufacturing plant will produce granular urea fertiliser, an essential input for both Australian agriculture and industrial chemical markets.

The plant will provide IPF with a secure, long-term supply of Australian urea through an exclusive 20-year offtake partnership that secures up to 2.3 million tonnes of urea per year for IPF and its customers. The agreement with Perdaman underpins IPF's ability to deliver competitive, long-term urea supply for its Australian customers and facilitates expansion of sales into growing global markets.





Community safety, support and connection

We are committed to building long-term and meaningful relationships with the communities in which we operate. Our Sustainable Communities Policy defines our approach to community relations and our Community Investment Framework (see page 48) preferences local approaches, enabling each of our sites to respond to the distinct needs of those who live in and around our areas of operations.

Community Safety

Due to the potentially hazardous nature of industrial and agricultural chemicals, IPF’s on-site staff are well trained to cooperate and engage with local community leaders and first responders on how to keep the community safe in the unlikely event of an incident. In addition to our robust safety measures, many of our sites are required by law to communicate regularly with our communities regarding safety plans and emergency procedures. For IPF, 100% of sites also fall into this category. Some of these sites are classified as Major Hazard Facilities and these follow Safe Work Australia guidelines in communicating with their communities.

Community Investment

There are two key components of the IPL Community Investment Framework. The first is our Dollar-for-Dollar program. It matches employee donations and site-based fundraising efforts (up to \$20,000 annually) where they align with our Principles for Giving. The second is our Workplace Giving program. This is a voluntary workplace giving scheme whereby IPF employees can donate to one or more of the Company’s nominated not-for-profit charities with the assurance that IPL will match these donations up to a total of \$20,000 each year.

During 2023, A\$383,596 of the IPL Community Investment was made globally by IPF through the Dollar-for-Dollar program, the Australian Workplace Giving program and various site-based initiatives, including in-kind donations and employee volunteer hours.



Ensuring a just transition

For IPL, a ‘just transition’ means decarbonising our operations and supply chains in a way that meets the goals of the Paris Agreement but is also orderly, timely, fair and equitable.

We seek to protect and sustain the jobs we provide and to support the communities which depend on those jobs.

As a manufacturer of fertilisers, we manufacture and supply products and services that will continue to be in demand throughout the energy transition. As a result – and unlike some other industries – our ambition is not orderly closure, but successful decarbonisation of our manufacturing assets to continue to provide our products and services in a decarbonised economy, and to maintain the employment opportunities we provide.

We ceased natural gas based manufacturing at our Gibson Island site in Queensland, Australia this year after being unable to secure natural gas at a competitive price. We engaged with 193 employees to offer redeployment and outplacement services, with 75% engaging the services and 58% known successful transitions made.

For more information, see pages 15 and 23 of the [2023 IPL Climate Change Report](#).



IPF Geelong supports the 2023 Moorpanyal Park 1000 Swim

Our Geelong site is nestled against Corio Bay in North Shore, a bayside Geelong suburb which has just six residential streets and a close-knit community from all walks of life.

The waterfront offers spectacular views of Geelong and Corio Bay, and as our TNFD assessment identified this year, the area has a natural capital with a high value for both biodiversity and recreation, including six key biodiversity areas and two Ramsar Site Wetlands of National Importance within a 50km radius of IPF’s operations. As a result the North Shore is frequented by tourists and locals, swimmers, kayakers, recreational fishermen, and families.

The Moorpanyal Park 1000 Swim was founded at the dawn of the new century with just 14 swimmers in 2000. The swim is now an annual event attracting more than 150 competitors along with friends, family and community members enjoying the day. This year our Geelong site helped the swim remain financially viable by assisting the local residents group with a cash donation, equipment such as witches’ hats, flags and chairs, and also jointly sponsoring swimming caps for the event. This is a great example of IPF’s community focused, locally-based community engagement strategy in action.



Phosphate Hill supports Outback school, Flying Doctor Service and SES

Our Phosphate Hill ammonium phosphate fertiliser manufacturing site is located near a natural phosphate rock deposit in the north-west Queensland desert in Australia. Due to its remote location, our entire workforce is fly-in-fly-out, with charter flights between Townsville and our site-based employee camp.

The local Dajarra school has just one teacher and 14 students from ages 5-11, and is located about an hour’s drive from the site. The kids hadn’t been on a school camp for five years when the school approached and asked if we could help. The school does not have a bus, so one of our employees drove to the school, and delivered the students, teacher and support

teacher to one of our return charter flights into Townsville. The students were able to attend a three-day school camp located on the coast, which many of the children had never visited before. We also donated snack packs and activities for the flight.

The local community is important in this remote location. The site was a major sponsor of the Royal Flying Doctor Service Gala in Mt Isa this year, employs four dedicated professional Emergency Response employees who are part of the local Dajarra SES unit, and sponsors the local rodeo and a raft of local sporting teams – allowing them to travel across the State to participate in competitions.





# Governance Topics

**We recognise that good corporate governance, the G in ESG, drives sustainable returns. The management of new risks and opportunities, new technologies, emerging sustainability issues and regulatory risks requires sound, strategic governance, including interaction with a wide range of external stakeholders, to achieve sustainable outcomes.**

The Board's oversight of the issues in this section, and our Governance structures, are described in the 'Our Governance' section on pages 7-9. IPL's Sustainability Steering Committee provides executive oversight of the sustainability strategy and gives direction on the management of ESG issues.

Good governance includes ensuring our people have the necessary knowledge to identify and manage ESG risks right across our global business. For IPF, Zero Harm for our people is of the utmost importance to us. We provide regular training for our employees to ensure hazardous materials and processes are handled with respect to Zero Harm for our people, our communities and the environment.

In 2023 this included prioritising mental health as a safety issue, with collaboration across IPF designed to build a mentally healthy workplace that incorporates psychosocial as well as physical health risk management.

This risk management approach included:

- » a clear corporate framework and governance structure to ensure accountability
- » data collection and analysis to inform strategic decisions and investments in programs and interventions and to assess their effectiveness
- » a shift to a more proactive and preventative approach to building wellbeing and safeguarding mental health.

Our SafeTEAMS and mental health and wellbeing programs are aligned and designed to create a mentally healthy workplace. They include monthly discussion topics, lunch and learns, resources and tip sheets, workshops, and mental health awareness and leadership training.

Within IPF just under 78% of the target audience (541 staff) have received this training.

## Industry and government collaboration on green technology towards Net Zero

IPL is working with Fortescue Future Industries to investigate green ammonia production at our Gibson Island site. Since 1969, the site has used natural gas to produce hydrogen (H<sub>2</sub>) for the manufacture of ammonia (NH<sub>3</sub>).

IPL and Fortescue are assessing hydrogen production from the electrolysis of water using renewable electricity, to significantly reduce GHG emissions. The facility targets production of up to 70,000 tonnes of renewable hydrogen per year and this would replace all Gibson Island's current natural gas feedstock and 99% of its use of natural gas for energy. This would mean a 44% GHG reduction for Incitec Pivot Fertilisers (IPF) against its 2020 baseline and a 17% reduction against IPL's 2020 baseline.

In addition to our partnership with FFI, we have engaged with the Australian Government as we seek to bring the development of industrial-scale green ammonia forward. In October 2022 the project secured a A\$13.7m Australian Renewal Energy Agency (ARENA) grant to proceed to Front End Engineering Design (FEED) stage and align technical specifications and costs, facilitate procurement and prepare the project for a Final Investment Decision (FID), which is expected in late 2023. Should it be approved, green ammonia production could begin as early as 2026.



If successful, as far as we are aware, Gibson Island would be the first retrofit of an existing ammonia plant in the world to run on green hydrogen. Green hydrogen has the potential to assist the decarbonisation of transport, heating, power and industry and could function as a renewable feedstock. The success of Gibson Island's green ammonia plant would be a pioneering contribution to the growth of Australia's green hydrogen industry.

Green hydrogen is more easily and safely transported as ammonia (NH<sub>3</sub>) and can potentially be used to decarbonise other industries. Examples include its use as a fuel in decarbonising heavy transport, heating and power for buildings and industrial heat usage.

Technology as an enabler and disruptor

In line with our Leading Technology Solutions strategic driver, we continue to invest in a range of research projects to assess the technical and commercial readiness of new technologies. These include: fertiliser technologies for sustained food security, healthy soils for sustainable food production, the development of novel urea coatings and the testing of silicon fertilisers which have been shown to increase heat stress resistance in crops.

Our long-term strategy is to grow from a leading fertiliser Company, manufacturing and distributing a range of domestic fertilisers, to a provider of sustainable plant nutrition solutions which improve soil health. This strategy will be leveraged through our expansive distribution footprint to drive new growth products and services towards soil health and changing growing conditions.

See the topics 'Soil Health and Biodiversity' on page 61, 'Sustainable Plant Nutrition Solutions' on page 63 and 'Innovation in responsible and sustainable products and services' on page 83 for more information.

Active engagement in ESG issues

At IPF we work to build relationships with regulators and industry stakeholders as an important part of our managing ESG issues which are material to the sustainability of our business. We continue to seek feedback from a range of stakeholders on the issues important to them and the effectiveness of our reporting on these issues.

During 2023, progress on IPL's climate change strategy and transition plan, as provided in the 2022 Climate Change Report, was put to a non-binding, advisory vote to shareholders at the 2022 IPL Annual General Meeting, with 89.68% of shareholders voting in support. This was a resounding endorsement of IPL's management strategy. This non-binding, advisory vote will be held at least every three years, and will complement IPL's continued engagement with shareholders and other stakeholders about the risks and opportunities climate change presents for IPL's business.

This year we are also proud to have engaged an external expert to conduct an initial 'LEAP Assessment'. This has enabled us to identify IPF's impacts and dependencies on natural systems and to report against the risk management and disclosure framework of the Taskforce on Nature-related Financial Disclosures (TNFD) for the first time. For more information see page 68.

We continue to track and monitor changing regulations and incentives across Australia, including Hydrogen Headstart and the Federal Government's \$1.9 billion Powering the Regions Fund. This is a welcome initiative that may support efforts to strengthen the nation's move to renewables and move to Net Zero by 2050 through support to decarbonise existing industry and develop new clean energy industries.

During 2023, we participated in an industry association review to submit a method to formally quantify the GHG reductions associated with our EEFs. We continue to actively promote the use of these products and work with customers to help optimise their use.

We also collaborated with a third party expert to conduct our annual review of the climate positions of the various industry bodies and associations of which we are a member. The review forms part of our ongoing monitoring of industry associations and the alignment between the views of these associations and IPL.

Regulatory risk management

Our businesses, and those of our customers and suppliers, are subject to health, safety and environmental laws and regulations that require specific operating licences and impose various requirements and standards. Risk management, including regulatory and reputational risk management, is central to our continued growth and success, and the achievement of the Company's objectives and strategy.

To ensure we have the procedures and systems in place to not only determine what our regulatory obligations are, but how we carry them out, we receive monthly legislative updates, provided by a third party service provider for all States in Australia. As well as updates on existing legislation, this includes updates on proposed bills and changes, all of which feeds into our assessment of how legislation or upcoming changes could potentially impact our business and/or operations. Additionally, rather than taking a top-down approach, we encourage our site and environmental managers to stay on top of regulatory developments and to have processes to manage environmental legislation within the business.

In Australia, two of our major manufacturing sites, Phosphate Hill and Gibson Island, are captured under the Australian Federal Government's Safeguard Mechanism, which has essentially established a cap and trade scheme for any site which exceeds its facility-specific emissions baseline within a June year-end period. We are continuing to work with the Clean Energy Regulator to ensure we have the processes and systems in place for full compliance with Safeguard 2.0, which came into force on 1 July 2023.

Regulatory infringements

We received two penalty infringement notices in 2023 from the Queensland Department of Environment and Science (DES) amounting to \$28,750. These fines concern two separate incidents at our Phosphate Hill site which each involved a loss of containment of contaminated water from pipes to ground in one instance, and to ground and a dry creek bed in the second instance. We identified these incidents during regular inspections of the pipe networks and duly reported them to the regulator. Remediation actions included the removal of contaminated soil, replacement with clean soil and the replacement of pipe joints. In addition, a review of the governance of pipe networks between plants was conducted to clearly define the appropriate department responsible for these within the site. In addition the site has implemented

increased frequency of decant water network inspections, improved quality of permit-to-work activities and improved face to face environmental compliance training for team leaders.

With the closure of natural gas-based manufacturing at Gibson Island during the year, we engaged with the Queensland Department of Environment and Science (DES) to resolve legacy contamination of soil, groundwater and stormwater. An Enforceable Undertaking, which contains commitments to further investigate, monitor and develop programs to improve the condition of the site, was negotiated with the DES. We also agreed to fund research at the University of Queensland into the recovery of phosphorus in water and donated to a local catchment management group.





# Glossary

**ARENA:** ARENA is the Australian Renewable Energy Agency. The agency supports the global transition to net zero emissions by accelerating the pace of pre-commercial innovation, to the benefit of Australian consumers, businesses and workers.

**Biodiversity:** the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems. The term also includes diversity within species, between species, and in ecosystems.

**Biomes:** global scale zones, generally defined by the type of plant life that they support in response to average rainfall and temperature patterns (e.g. tunfra, coral reefs or savannas).

**Carbon dioxide equivalent (CO<sub>2</sub>e):** The universal unit of measurement to indicate the global warming potential (GWP) of each of the six greenhouse gases, expressed in terms of the GWP of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) different greenhouse gases against a common basis.

**Cation:** A positively charged atom or molecule. The five most abundant exchangeable cations in soil are calcium (Ca++), magnesium (Mg++), potassium (K+), sodium (Na+) and aluminium (Al+++).

**Climate:** The weather conditions prevailing in an area/ region in general or over a long period.

**Dependencies:** Aspects of ecosystem services that an organisation or other actor relies on to function.

**Ecosystem:** A dynamic complex of plant, animal and micro-organism communities and the non-living environment, interacting as a functional unit.

**Ecosystem services:** The contributions of ecosystems to the benefits that are used in economic and other human activity. These comprise: (a) provisioning services, which include any type of benefit that people can extract from nature; (b) cultural services, which include non-material services such as recreational activities, aesthetic inspiration, cultural identity and spiritual significance; and (c) regulating and maintenance services, which refers to the way in which ecosystems maintain and regulate the quality of land, air and water (e.g. through flood control). A list of ecosystem services, as recognised by the TNFD's 'Fundamental Concepts for Understanding Nature', is at page 77.

**Endangered species:** Species considered to be facing a very high risk of extinction in the wild.

**Environmental assets:** The naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity. A list of environmental assets, as recognised by the TNFD's 'Fundamental Concepts for Understanding Nature', is at page 77.

**Future Climate Related Scenario:** A scenario describes a path of development leading to a particular outcome. A climate change scenario describes a path of development leading to a set degree of rise in temperature above pre-industrial global average temperatures. Our climate scenarios are described in Chapter 4 of the IPL Climate Change Report (2022).

**Global Reporting Initiative (GRI):** a leading organisation in the sustainability field, promoting the use of sustainability reporting as a way for organisations to become more sustainable and contribute to sustainable development. GRI has pioneered and developed a comprehensive Sustainability Reporting Framework that is widely used around the world. To see the GRI indicators covered by our sustainability webpages and publications, see IPL's GRI Index and Data Supplement.

**Group:** The IPL Group, collectively comprising IPL and its subsidiaries.

**Impacts:** Changes in the state of nature which may result in changes to the capacity of nature to provide social and economic functions. Impacts can be positive of negative, and they may result from an organisation's or another party's actions, and may be direct, indirect, and cumulative.

**Impact drivers:** A measurable quantity of a natural resource that is used as a natural input to production, or a measurable non-product output of business activity (e.g. CO<sub>2</sub> emissions).

**ISSB:** The Trustees of the IFRS Foundation announced the formation of the International Sustainability Standards Board (ISSB) on 3 November 2021 at COP26 in Glasgow. The ISSB is developing – in the public interest – standards that will result in a high-quality, comprehensive global baseline of sustainability disclosures focused on the needs of investors and the financial markets.

**Key Biodiversity Area:** A site contributing significantly to the global persistence of biodiversity. A global list of Key Biodiversity Areas is curated by the KBA Partnership of leading global nature conservation organisations, and can be found at <https://www.keybiodiversityareas.org>.

**Material:** In the context of the GRI Reporting Framework, 'material' topics for a reporting organisation are those topics that have a direct or indirect impact on an organisation's ability to create, preserve or erode economic, environmental and social value for itself, its stakeholders and society at large.

**Megatrend:** Our materiality assessment defines a megatrend as a large, transformative global force that defines the future by having a far-reaching impact on business, economies, industries, societies and individuals. A megatrend is distinguished from other trends in that it cannot be stopped or significantly altered, even by powerful actors such as governments.

**NAIDOC Week:** An Australian observance lasting from the first Sunday in July until the following Sunday. The acronym NAIDOC stands for National Aborigines and Islanders Day Observance Committee.

**Natural capital:** The stock of renewable and non-renewable natural resources that combine to yield a flow of benefits to people. These include living and non-living entities such as plants, animals, air, water, soils and minerals.

**Nature:** The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment.

**Nature-related opportunities:** These can occur where (a) organisations avoid, reduce, mitigate or manage nature-related risks, or (b) through the strategic transformation of business models, products, services, markets and investments, allowing organisations to actively work to reverse the loss of nature (including by restoration, regeneration of nature and implementation of nature-based solutions).

**Nature-related risks:** These pertain to potential threats to an organisation and its sustained success, linked to their and wider society's dependencies on nature and nature impacts. These may include (a) nature-related physical risks (e.g. threats to an organisation from disruptions to natural systems, resulting in changes to living and non-living conditions that sustain the ecosystems on which businesses rely); (b) nature-related systemic risks (e.g. threats relating to the collapse of entire ecosystems, rather than a decline in part of an ecosystem); and (c) nature-related transition risks (e.g. threats to an organisation stemming from a misalignment between that organisation's strategy and management, and a changing regulatory, policy or societal landscape).

**Near miss:** An unplanned event that did not result in injury, illness or damage – but had the potential to do so. The aim of the investigation of 'near miss' events is to identify and mitigate root causes, providing a focus for improvement.

**NOx:** a generic term for the mono-nitrogen oxides NO and NO<sub>2</sub> (nitric oxide and nitrogen dioxide).

**N<sub>2</sub>O:** Nitrous oxide (di-nitrogen oxide), listed as one of six greenhouse gases covered by the Kyoto Protocol and the Greenhouse Gas Protocol.

**Paris Agreement:** A global climate agreement that was reached under the United Nations Framework Convention on Climate Change (UNFCCC) at the 21st Conference of the Parties (COP21) in Paris (30 November to 12 December 2015) to limit average global temperature rise this century to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

**Physical risks:** Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organisations, such as direct damage to assets and indirect impacts from supply chain disruption. Organisations' financial performance may also be affected by changes in water availability, sourcing and quality; food security; and/ or extreme temperature changes impacting organisations' premises, operations, supply chain, transport needs, and employee safety.

**Plant:** The equipment used to manufacture a specific product e.g. ammonia. There may be several plants on a single IPL site.

**Realms:** Major components of the living, natural world that differ fundamentally in ecosystem organisation and function. In the TNFD's framework, these are: land, freshwater, ocean and atmosphere.

**SafeGround:** IPL seeks to create a culture of SafeGround, which we define as 'an environment of psychological safety in which people feel safe to raise concerns and make suggestions'. It is an essential part of a safety culture.

**SASB:** The Sustainability Accounting Standards Board (SASB) Standards help companies disclose relevant sustainability information to their investors. Available for 77 industries, the SASB Standards identify the sustainability-related risks and opportunities most likely to affect an entity's cash flows, access to finance and cost of capital over the short, medium or long term.

**Scope 1 emissions:** Direct GHG emissions which occur from sources that are owned or controlled by the Group, for example emissions from combustion in owned or controlled boilers, furnaces, vehicles etc, and emissions from chemical production in owned or controlled process equipment.

**Scope 2 emissions:** Scope 2 emissions are GHG emissions which arise from the generation of purchased electricity consumed by the Group. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the Group. scope 2 emissions physically occur at the facility where this electricity is generated.

**Scope 3 emissions:** A GHG emissions reporting category that allows for the treatment of indirect emissions (other than scope 1&2 emissions). scope 3 emissions are a consequence of the activities of the Group, but occur from sources not owned or controlled by the Group. Our scope 3 emissions and calculation methodology are reported in Appendices 3 and 4 of the IPL Climate Change Report (2022).

**Significant Environmental Incidents:** Environmental Incidents as assessed against IPL's internal risk matrix with actual consequences of 5 or higher on a 6-level scale. A Category 5 environmental incident is 'a major event or Environmental repeat non-compliance with regulatory, licence or permit conditions leading to prosecution or restriction of operations' and a Category 6 environmental incident is one which results in 'permanent or long-term impacts to water, land, biodiversity, air or ecosystems and requires significant remediation, rectification or investment in mitigation'.

**Site:** A single geographic location where IPL operations take place.

**SOx:** Sulphur oxide emissions, for example, sulphur dioxide (SO<sub>2</sub>). Sulphur oxides arise from the burning of fossil fuels that contain sulphur and during the burning of sulphur to make sulphuric acid.

**Supply chains:** A sub-set of our value chain, referring to the companies who supply the inputs to our operations, such as raw materials for manufacturing, service providers and providers of other inputs such as electricity and water.

**Transition risk:** Transitioning to a lower-carbon economy may entail extensive policy, legal, technology and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organisations.

**TCFD:** The Financial Stability Board Taskforce on Climate-related Financial Disclosures (TCFD) is a market-driven initiative, set up to develop a set of recommendations for voluntary and consistent climate-related financial risk disclosures in mainstream filings.

**TNFD:** The Taskforce on Nature-related Financial Disclosures (TNFD) is a risk management and disclosure framework to enable organisations to report on and respond to nature-related risks. The TNFD comprises UN organisations, financial institutions and corporates with over US \$20 trillion in assets. Since July 2021 it has progressively released four beta frameworks, and a final framework is scheduled to be released in September 2023.

**TRIFR:** Total Recordable Injury Frequency Rate – the number of recordable incidents per 200,000 hours worked; includes contractors unless otherwise indicated.

**UN SDGs:** The UN SDGs are a set of 17 goals and 169 targets adopted by world leaders at the United Nations to end poverty, fight inequality and tackle climate change by 2030. Although primarily designed for governments, the SDGs call for action by all countries and stakeholders.

**UNGC:** The UN Global Compact (UNGC) is the world's largest corporate sustainability initiative – transforming businesses and raising ambitions towards the achievement of societal goals. The UN Global Compact Network Australia (UNGCA) is the Australian business-led network of the UN Global Compact.

**Value chain:** Our value chain includes our suppliers (and potentially their suppliers), our operations, our distribution channels, and our customers who are the end users of our products. Our supply chains (described above) are a subset of this.

**Water stress:** Water stress may refer to the availability, quality or accessibility of water in relation to human and ecological demands for water.



## Forward looking statements

This Report contains forward looking statements, including, but not limited to: statements regarding trends in commodity prices and supply and demand for commodities; assumed long-term scenarios; potential global responses to climate change; regulatory and policy developments; the development of certain technologies; the potential effect of possible future events on IPL and the plans, strategies and objectives of the organisation. Forward looking statements may be identified by the use of terminology, including, but not limited to, 'intend', 'aim', 'project', 'see', 'anticipate', 'expect', 'estimate', 'plan', 'objective', 'believe', 'may', 'should', 'will', 'would', 'continue', or similar words. These statements refer to future results, asset condition or financial conditions, or provide other forward looking information. The forward looking statements in this Report are based on the information available as at the date of this Report and/or the date of the Group's planning processes or scenario analysis processes.

There are inherent limitations with the use of forward looking statements and in particular where they relate to scenario analysis, and it is difficult to predict which, if any, of the scenarios might eventuate. Scenarios do not constitute definitive outcomes for IPL. Scenario analysis relies on a range of assumptions that may or may not be, or prove to be, correct and may or may not eventuate, and scenarios may be impacted by additional factors to the assumptions disclosed. Additionally, forward looking statements are not guarantees or predictions of future performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond our control, and which may cause actual results to differ materially from those expressed in the statements contained in this Report. IPL cautions against reliance on any forward looking statements or guidance.

To the extent permissible by law, IPL disclaims all liability to any third party who uses or relies on any forward looking statements or guidance in this Report. For example, future decarbonisation opportunities identified and described in this Report will be based, in part, upon the availability and reliability of alternative and developing technologies, and incentives and support from government bodies and the industry, which may differ from assumptions, estimates and forecasts. These variations may affect the timing or the feasibility of the development of a particular technology or project, and its subsequent adoption and use by IPL or the broader industry more generally.

Except as required by applicable regulations or by law, IPL does not undertake any obligation to publicly update or review any forward looking statements, whether as a result of new information or future events. Forward looking statements are current only as at the earlier of the date of this Report or the date the planning process assumptions or scenario analysis assumptions were adopted, as relevant and applicable. Past performance cannot be relied on as a guide to future performance.

The views expressed in this Report contain information that has been derived from publicly available sources that have not been independently verified. No representation or warranty is made as to the accuracy, completeness or reliability of the information. This Report should not be relied upon as a recommendation or forecast by IPL.

