

**COMPANY NAME:**

Austral Fisheries Pty Ltd

**REPORTING PERIOD:**

Calendar year 2016

**SCOPE OF CARBON NEUTRAL CERTIFICATIONS:**

- Austral Fisheries Pty Ltd, as an organisation; and
- Austral Fish Catch and Austral Prawn Catch, as two products of Austral Fisheries Pty Ltd

**Introductory Statement**

Austral Fisheries is certified as a carbon neutral organisation under the Carbon Neutral Program. This is Austral's second reporting period after the initial baseline assessment conducted in 2016, which looked at the 2014 calendar year (at the time, 2014 was the most recent year with a fully available set of accounts to audit against). The baseline year was used to determine the size of Austral's emissions in that period, and provide an emissions estimate for 2016, the first year of certification. It provided Austral Fisheries with the data to determine how many offset units needed to be purchased upfront in order to be carbon neutral in its first year in the program, as well as a baseline to measure emission reduction programs against, in future years. This approach is consistent with the National Carbon Offset Standard (version 3.0).

Now, as 2016 has concluded, Austral Fisheries has measured and reported our emissions based on collected data for the year. The difference between our reported 2016 emissions and the amount of units offset upfront from the baseline year have been accounted for, and retired, which settles our 2016 account.

Similarly, the two wild-caught products of the Austral Fisheries business, Austral Fish Catch and Austral Prawn Catch, are also certified as carbon neutral under the Carbon Neutral Program. This has involved a Life Cycle Assessment of both products in accordance with the requirements of the National Carbon Offset Standard (version 3.0).

As described for the organisation-level certification of Austral Fisheries, the 2014 calendar year was also used as a base year for measuring and reporting emissions for the products Austral Fish Catch and Austral Prawn Catch. Again, this baseline year was used to determine the extent of emissions associated with the two products' life cycles, and provides the data to determine how many emissions were needed to be offset upfront in order to be carbon neutral for the first year of certification, and the baseline for emission reduction programs and success at reducing emissions in future years.

Now, as 2016 has concluded, Austral Fisheries has measured and reported actual emissions associated with the two products' data for the year. As described in further detail below, the life cycle emissions of the certified products are contained completely within the extensive footprint already offset at the organisation level, negating the need for any additional offsetting of emissions for our fish and prawn products.

At the completion of our 2016 licence agreement with the Carbon Neutral program, we shifted our offsetting requirements from upfront, to in arrears. We will therefore purchase and retire offsets for 100% of our 2017 emissions by the end of April 2018.

## Declaration

To the best of my knowledge, the information provided in this Public Disclosure Summary is true and correct and meets the requirements of the National Carbon Offset Standard Carbon Neutral Program.

	26/04/2017
David Carter	
Chief Executive Officer	

Type of carbon neutral certification: Organisation

Verification

Date of most recent external verification/audit: 27/04/2017

Auditor: Ernst & Young

Auditor assurance statement link:

(For organisation audit) [http://www.australfisheries.com.au/wp-content/uploads/2017/04/2016.AUST\\_.NCOS\\_.CR\\_.-Assurance-Report-FINAL.pdf](http://www.australfisheries.com.au/wp-content/uploads/2017/04/2016.AUST_.NCOS_.CR_.-Assurance-Report-FINAL.pdf)

(For LCA audit) [http://www.australfisheries.com.au/wp-content/uploads/2017/04/2016.AUST\\_.NCOS\\_.CR\\_.-LCA-Assurance-Report-FINAL.pdf](http://www.australfisheries.com.au/wp-content/uploads/2017/04/2016.AUST_.NCOS_.CR_.-LCA-Assurance-Report-FINAL.pdf)

This document describes the offsetting of the carbon footprint of Austral Fisheries at both the **organisation** level, which was based on a greenhouse gas inventory approach, as well as the emissions and offsetting of the two **products**, Austral Fish Catch and Austral Prawn Catch, which was based on a life cycle approach.

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## 1A. Carbon neutral information – Organisation Certification

### Introduction

The following is an outline of the certification of our Organisation, Austral Fisheries Pty Ltd (“Austral”) as Carbon Neutral by the Carbon Neutral Program (version 4.0), using the National Carbon Offset Standard, version 3.0.

Austral is one of Australia’s leading commercial fishing companies, specialising in environmental fishing practices that catch and source sustainable seafood. Austral catches and processes Patagonian toothfish and Mackerel icefish from the Southern Ocean, as well as wild ocean caught Banana prawns and Tiger prawns from across northern Australia. To do this, Austral owns and operates ten refrigerated prawn trawlers in Australia’s Northern Prawn Fishery, and three longline vessels (including one dual purpose longline-trawler) in the Southern Ocean.

As part of Austral’s commitment to environmental excellence, the company became certified under the Carbon Neutral Program in 2016. This firstly involved an extensive footprinting analysis under the National Carbon Offset Standard, baselined in 2014. Following this, the entire footprint of the company was, and continues to be offset through Gold Standard credits, generated through revegetation in Western Australian farmland, by Carbon Neutral Pty Ltd.

All parts of the Austral business have been accounted for in the preparation of this certification. For example, it includes all the fuel we use on our vessels at sea to harvest fish and prawns; the emissions associated with production and transport of supplies we provide to vessels; and all supporting activities such as shore based operations and management, administration, policy development, sales and marketing.

As required under the Carbon Neutral Program, the calculation of the footprint includes extensive emissions generated by other suppliers (i.e. Scope 3 emissions), such as sea, land and air transportation, and cold store facilities.

Essentially, we have accounted for all carbon emissions we can identify from the start of our activities, through to the point of sale to our wholesalers, akin to a cradle-to-gate approach. Additionally, this year we have chosen to extend our boundary to include up to the point of end consumer purchase of our studied fish and prawn products at the retailer or restaurant.

Extensive details are provided on separate calculations, and they have been independently audited and verified by Ernst & Young.

For this section of the carbon footprint inventory, a “greenhouse gas inventory” approach is used, since the entity being analysed is an organisation.

## 1B. Carbon neutral information – Product Certification

### Introduction

The following is an outline of the certification of the wild caught ocean fish and prawn products of Austral Fisheries Pty Ltd (“Austral”) as Carbon Neutral by the Carbon Neutral Program (version 4.0), using the National Carbon Offset Standard, version 3.0.

Further to the organisation-level certification, Austral has carried out Life Cycle Assessments (LCA) of its wild ocean-caught fish and prawn products, so that these products can also be certified as carbon neutral.

This LCA covers all the wild fish and prawn products caught by Austral. Carried out in accordance with the Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Protocol, this extends from the carbon emissions from the vessels and bait used to catch the fish and prawns, through the pre-processing of materials in the production line, and through to the point of sale to our wholesale customer, which is known as a cradle-to-gate approach. Additionally, this year we have chosen to extend our boundary to include up to the point of end consumer purchase of our studied fish and prawn products at the restaurant or retailer.

The extensive scope in calculating the carbon footprint of the organisation, Austral Fisheries, covered, amongst other things, the activities involved in producing the fish and prawn products. The carbon emissions associated with the products, assessed via the LCA, are shown to fit within the organisational footprint, as a subset. This is indeed the general intention of the Greenhouse Gas Protocol reporting for the relationship businesses and products.

As our LCA scope falls inside our organisation emissions boundary, the emissions involved in the production of Austral’s fish and prawn catch are covered by those same offsetting activities as described in section 1A.

Details are provided on separate calculations, and in a separate full report<sup>1</sup> on the LCA of the two products. These have been independently audited and verified by Ernst & Young.

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<sup>1</sup> *The carbon footprint of fish and prawns caught by Austral Fisheries: Production carbon footprint using the cradle-to-gate Life Cycle Assessment approach. Calendar year 2016, Carbon Neutral Period – calendar year 2017, Prepared March 2017.*

## 1C. Emission sources within certification boundary

### Quantified sources – Organisation

The emissions boundary is the entire organisation of Austral Fisheries Pty Ltd (Figure 1). The boundary for the emissions sources was defined using the “control approach” described in the National Greenhouse and Energy Reporting Act. This then involves accounting for the following emissions:

- Scope 1 (direct) emissions by the organisation, such as fuel burned in fishing vessels;
- Scope 2 emissions, which are emissions attributed to purchased electricity; and
- Scope 3 emissions, which are emissions arising from third party sources associated with activities of Austral.

Austral has followed the carbon accounting principals of relevance, completeness, consistency, transparency and accuracy. It has also referenced the following methods and factors:

the Greenhouse Gas (GHG) Protocol standards, including:

- *GHG Protocol – A corporate accounting and reporting standard* (GHG Corporate Standard) (2004)
- *GHG Protocol – Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (2011);

the National Greenhouse and Energy Reporting Act 2007 (NGER Act) and supporting legislation and documentation, including:

- *National Greenhouse and Energy Reporting Regulations 2008 (1 March 2017 compilation)*
- *National Greenhouse and Energy Reporting (Measurement) Determination 2008 (1 July 2016 compilation)<sup>2</sup> (referred to as NGER 2016)*
- *National Greenhouse and Energy Reporting Technical Guidelines*
- *National Greenhouse Accounts Factors 2016 (referred to as NGA Factors 2016);*

procedures and factors used by the Environmental Protection Authority Victoria for some Scope 3 emissions;

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<sup>2</sup> The NGER Determination is often used in preference to the NGA Factors. While they report the same methods and factors, we consider NGER is superior since it describes methods in more detail, describes alternative methods and is the source of the data in the NGA Factors.

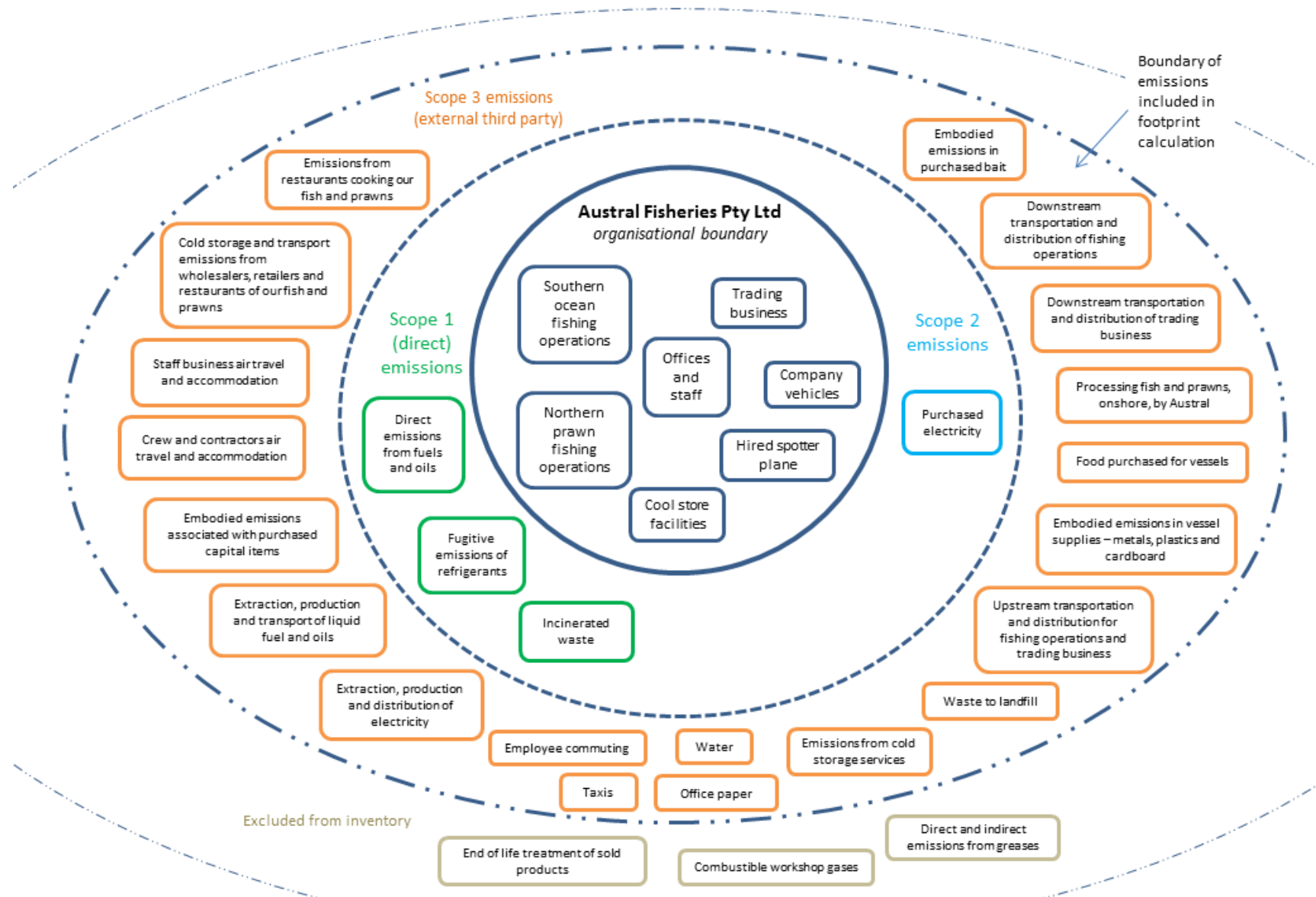


Figure 1. Organisational boundary and carbon inventory boundary of Austral Fisheries 2016 footprint at the organisation level.

emissions factors from the Department of Energy and Climate Change in the United Kingdom; and other in house calculations of emissions where other data was not readily available, as well as online emissions calculators, for example for emissions from flights and hotel accommodation, specified in the relevant worksheets which were audited by Ernst Young.

The following greenhouse gases were accounted for:

- (a) carbon dioxide;
- (b) methane;
- (c) nitrous oxide;
- (d) sulfur hexafluoride;
- (e) hydrofluorocarbons specified in the National Greenhouse and Energy Reporting Determination; and
- (f) perfluorocarbons specified in the National Greenhouse and Energy Reporting Determination.

A summary of the outcomes for our calculations can be seen at Table 4.

## Quantified sources – Products

Austral catches two broad categories of seafood – fish and prawns. Fish include Patagonian Toothfish, Icefish, Grenadier, and a small portion of High Seas species caught in the Indian Ocean. Prawns include both Banana prawns and Tiger prawns as the major species, Endeavour and King prawns as minor catches, as well as small bycatch quantities of other species such as squid, moreton bay bugs and scallops, which for the purpose of our LCA, we will include in our ‘prawn’ category.

The fish and prawn fleets are geographically and operationally separated. Within Austral Fisheries, there is a neat split between the operations associated with these two product categories.

Fish and prawn catches, separately, are the studied products of the LCA. Together these make up the entire catch of Austral Fisheries.

### Studied Products

- “*Austral Fish Catch*” is defined and accounted for as caught fish product leaving the ship. It comprises 100% of the fish catch.
- “*Austral Prawn Catch*” is defined and accounted for as caught seafood product leaving the ship. It consists of whole frozen prawns and other minor bycatch species, and comprises 100% of the prawn catch.



The specific seafood products which make up these fish and prawn catches are listed in Table 1.

The studied products also comprise the major reference flows used in the organisation-level carbon footprint of Austral, for example in downstream transport calculations.

The unit of analysis is defined as the reference flow since the Austral Fish Catch and Austral Prawn Catch are intermediate products and this is a cradle-to-gate life cycle analysis.

*Table 1. Summary and definitions of studied products.*

	<b>Accounting point and definition</b>	<b>Unit of Analysis, Reference Flow and Functional Unit</b>	<b>Description<sup>A</sup></b>
<b>Studied Products</b>			
<i>Austral Fish Catch</i>	Product leaving the ship	Tonnes of Austral Fish Catch leaving the ship	<ul style="list-style-type: none"> <li>Patagonian Toothfish, as 'HGT' (headed, gutted and tailed)<sup>B</sup></li> <li>Icefish, as whole fish</li> <li>Grenadier, as 'H&amp;G' (headed and gutted), or fillets</li> <li>High seas fish, as both 'H&amp;G' and whole fish</li> </ul> <p>Comprises 100% of the fish catch of Austral Fisheries</p>
<i>Austral Prawn Catch</i>	Product leaving the ship	Tonnes of Austral Prawn Catch leaving the ship	<ul style="list-style-type: none"> <li>Whole frozen prawns<sup>C</sup></li> <li>Whole frozen bycatch species<sup>D</sup></li> </ul> <p>Comprises 100% of the prawn catch of Austral Fisheries</p>

Notes:

<sup>A</sup> For interest, it is estimated that 70% of HGT fish and 50% of whole prawns are actually eaten, due to heads, bones, etc.

<sup>B</sup> For simplicity we have not specifically referred to additional minor products from Toothfish which are cheeks and collars (<5%). The emissions for cheeks and collars are nonetheless included in the analysis, and the tonnage of these products is included in numbers referring to 'HGT'.

<sup>C</sup> Includes Tiger, Banana, Endeavour and King prawns. Endeavour and King prawns are minor catches during both Tiger and Banana prawn seasons.

<sup>D</sup> Includes squid, moreton bay bugs, scallops, cuttlefish, lobster, pomfret, leader prawns and certain whole fish species.

Between the two studied products, all of the wild-caught fish and prawns of Austral Fisheries are included in the greenhouse gas life cycle assessments.

The LCA scope will be Cradle-to-Gate, due to the fact that Austral is a supplier of wholesale seafood which is then processed and eaten in a diverse variety of ways around the globe. However, this year, Austral has chosen to also include downstream Use of Fish Catch and Prawn Catch, in terms of transportation and storage in wholesaler and retailer facilities, as well as storage and cooking in restaurants. Consistent with a Cradle-to-Gate scope, End-of-life emissions of the products are not included.

Greenhouse gases involved in the LCA are as per the GHG Protocol Product Life Cycle Accounting and Reporting Standard and the National Carbon Offset Standard, and are the same as used in the calculations in the Austral Fisheries organisational carbon footprint study, mentioned above in *Quantified Sources - Organisation*.

A process map for the production of fish and prawns are shown in Figure 2. The process applies to both studied products, so the one figure is applicable for both.

Wild caught fish and prawns grow naturally in the ocean, and in accordance with the requirements of the life cycle assessment, natural emissions from this process are not included.

The production facility consists of a fishing fleet steaming to the fishing grounds, catching the fish or prawn products, processing on board, freezing, and packaging. The production facility also includes any onshore processing undertaken by Austral.

Figure 3 shows the relationship between the Austral Fisheries organisation level inventory and the Life Cycle Assessment of fish and prawn products<sup>34</sup>. We consider that many of these are marginally attributable from a LCA viewpoint, but have included them on the basis that they have already been included in the organisation level inventory.

Austral has followed the carbon accounting principals of relevance, completeness, consistency, transparency and accuracy, as outlined above in *Quantified Sources – Organisation*, with the addition, in the LCA, of:

- *GHG Protocol – Product Life Cycle Accounting and Reporting Standard (2011)*

A summary of the outcomes for our LCA calculations are in Tables 5 and 6 below.

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<sup>3</sup> Note of explanation on the trading business (Seafood Solutions) within Austral Fisheries, in relation to the LCA: The emissions associated with Seafood Solutions are rightly included in the Organisation level inventory (see Figure 3) but do not feature in the life cycle assessment of Austral Fish Catch and Austral Prawn Catch. This is due to the fact that Seafood Solutions is a separate importing business arm which does not deal in significant quantities of Austral Fish Catch or Austral Prawn Catch.

<sup>4</sup> Note of explanation that only the Scope 2 electricity emissions from Austral's head office have been included as part of the fish and prawn product LCA, as this is the only office that controls the sales and marketing of both products.

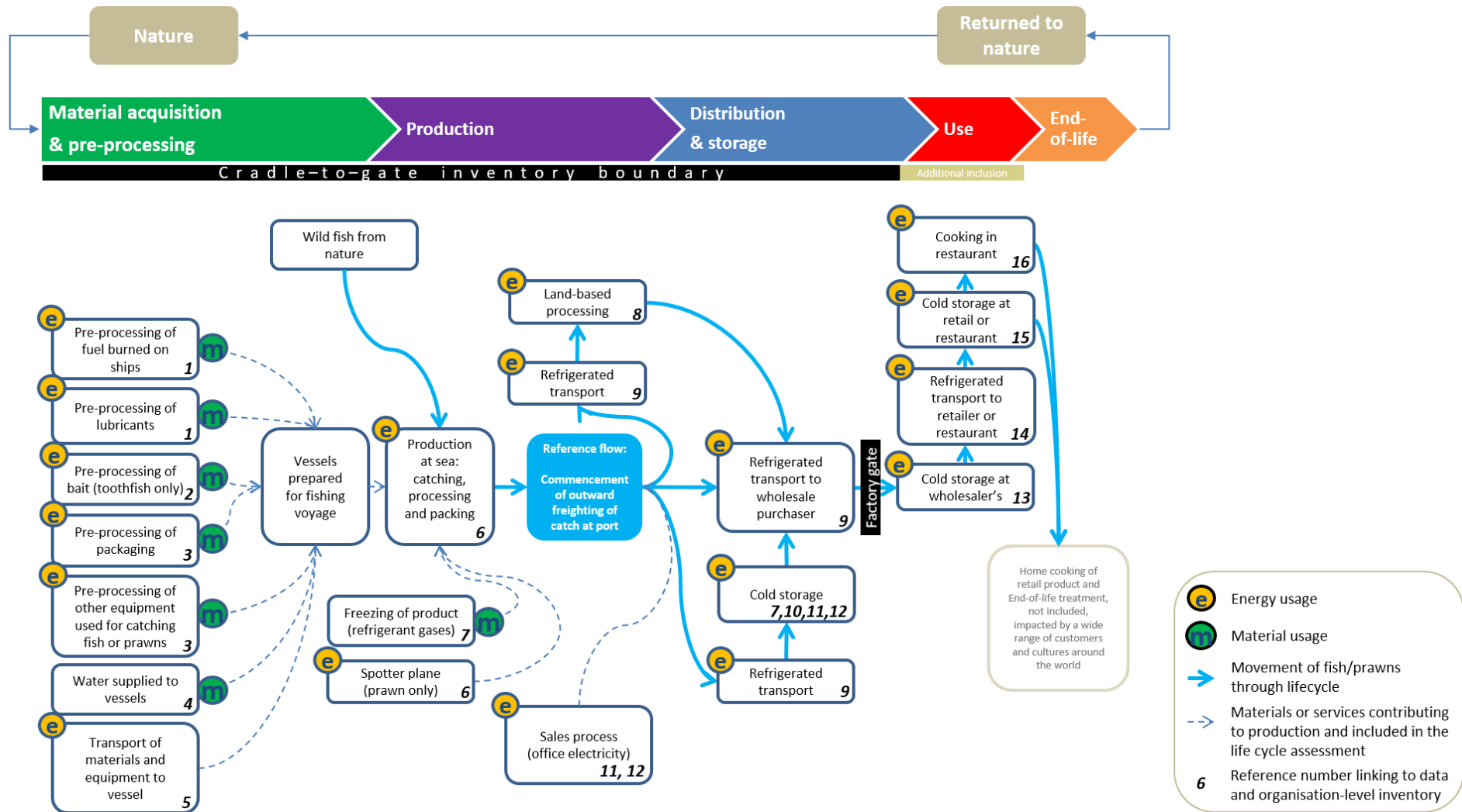


Figure 2. Process map for the production of the studied products, Austral Fish Catch and Austral Prawn Catch. The process map applies to both products.

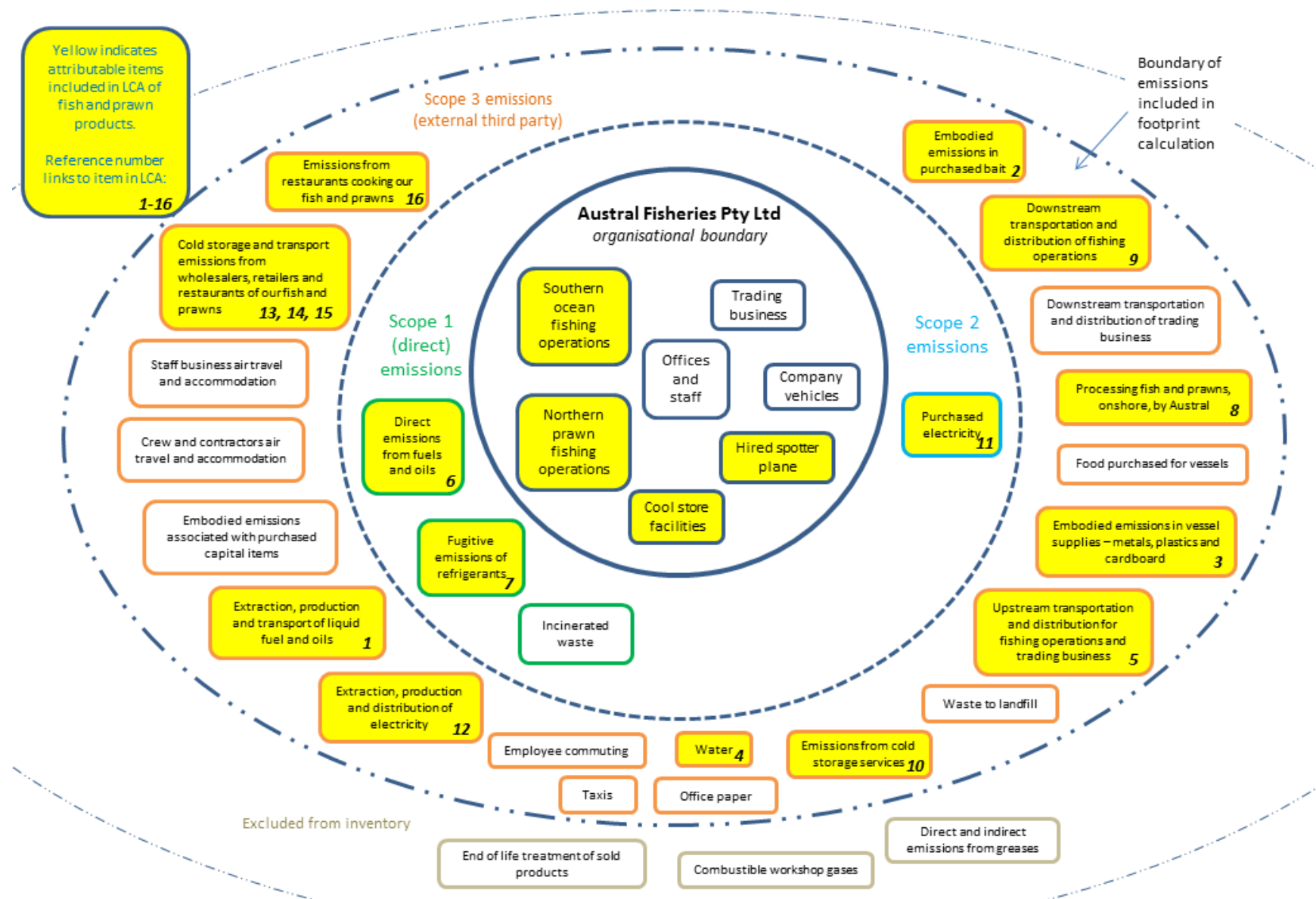


Figure 3. Austral Fisheries organisation level inventory with items which have been used in the life cycle assessment of fish and prawn products shown in yellow highlight.

## **Non-quantified sources**

Two sources of emissions from our inventory have not been quantified due to immateriality.

Firstly, Scope 1 emissions associated with use of petroleum based greases were excluded on the basis of immateriality. In our baseline year calculation, this was estimated to account for 0.04t CO<sub>2</sub>-e, or approximately 0.0001 % of our organisation's emissions, and usage has not changed significantly since that time.

Secondly, Scope 1 emissions associated with use of combustible workshop gases were excluded on the basis of immateriality. In our baseline year calculation, this was estimated to account for 0.5t CO<sub>2</sub>-e, or approximately 0.002 % of our organisation's emissions, and usage has not changed significantly since that time.

## **Excluded sources**

One emissions source has been excluded from our inventory.

Scope 3 emissions associated with End-of-Life treatment of sold fish were excluded on the basis that this is outside of the scope of cradle-to-gate accounting. However, we have chosen to extend our boundary further downstream to include downstream transport, cold storage and cooking of Austral fish and prawn catch by restaurants and retailers.

We will be strongly encouraging our suppliers and customers to carry out their business with a low carbon footprint. This footprint is akin to a cradle-to-gate scope in this regard.

## 2. Emissions reduction measures

### Part A. Emissions over time

This section compares emissions over time, in this case, between the baseline year (2014) and current year (2016).

With the baseline calculations obviously being our first year of calculating emissions, there were refinements in some of the methodologies used, that were implemented this year. These refinements were the result of a greater understanding of the GHG Reporting Protocols, as well as better understanding of the types of data that are required, and then implementing systems to be able retrieve those data. These minor changes to methodology in some calculations, we believe, will better allow us to track results over time, and enable us to deliver achievable results in regards to our Emissions Reduction Strategy. These changes resulted in some increases and some decreases to emissions compared to our baseline, with two of these changes being relatively significant. Therefore, as per our baseline recalculation policy, we have recalculated our baseline to include:

#### **Seafood Solutions amendment to baseline:**

For 2016, 1770t CO<sub>2</sub>e was the calculated figure for upstream transportation of imported seafood goods for our Seafood Solutions division. These emissions were directly linked to the importation of 2058t of seafood. To create a metric for this revised emission, we divide the emissions by the total amount of imported product to give 0.860 t CO<sub>2</sub>e/t imported product. We then apply this factor of 0.860 to the 2014 import tonnage of 1914t. This therefore equates to 1646 t CO<sub>2</sub>e as what should have been attributed to this item in the baseline calculation, instead of the calculated 395t. Therefore the recalculation results in an extra **1251 t CO<sub>2</sub>e** to be added to the baseline

#### **Extension of gate amendment to baseline:**

This year, 346t CO<sub>2</sub>e was included for the extension of our inventory boundary from our fish and prawn products' point of sale to our wholesaler customer, to the point of sale to the end user. To create a metric for this extra item, we divide the emissions by the total catch of 3658 t fish and prawns to give 0.095 t CO<sub>2</sub>e/t fish and prawn catch. We then apply this factor of 0.095 to the 2014 fish and prawn tonnage of 4632t. This therefore equates to an extra **438 t CO<sub>2</sub>e** to be added to the baseline (243 t to fish and 195 t to prawns, based on the respective catches).

### Revised baseline emissions:

Including these two revisions into our baseline calculations increases the baseline emissions in 2014 from 27,422 t to **29,111 t CO<sub>2</sub>e**.

As a result of this change, the scope and coverage of the 2014 baseline will be most accurately represented diagrammatically by Figures 2 and 3, shown for this current 2016 inventory.

Additionally, the major reason for the relatively large increase in emissions in 2016 (32,619t) compared to the revised baseline (29,111t) is due to an approximate 3700t CO<sub>2</sub>e increase in relation to extra diesel consumed by our Southern Ocean fleet in 2016. This was due to lower than predicted catch rates, which meant that it took our vessels longer than normal to catch our fish. Because of this, we caught less fish than the baseline year which has also contributed to increasing the emissions intensity from 5.12 to 7.25 t CO<sub>2</sub>e/t fish.

Also worth noting, the relatively stable total prawn product emissions (12,662t compared to 12,462t in 2016), is offset by a significant increase in emissions intensity due to less prawns being caught in 2016. This can be explained through the productivity of this fishery being largely dependent on rainfall across northern Australia during the wet season, and while 2016 was not seen as a disappointing year, it is being compared to 2014 which is seen historically as an exceptional year in terms of prawn catches.

We have chosen to report and track our yearly progress against the total emissions and the emission intensity of total seafood catch for the Organisation; and the emissions intensity per tonne of seafood caught for our Products (see Table 2).

<b>Table 2. Emissions comparison to (revised) baseline year</b>						
	<b>Organisation</b>		<b>Fish</b>		<b>Prawns</b>	
	Base year (2014 rev.)	Current year (2016)	Base year (2014 rev.)	Current year (2016)	Base year (2014 rev.)	Current year (2016)
<b>Scope 1</b>	21532	25042	10834	14002	10664	11003
<b>Scope 2</b>	96	100	26	21	26	21
<b>Scope 3</b>	7483	7476	2282	2449	2127	1438
<b>Total</b>	29,111t CO <sub>2</sub> e or 6.28 t CO <sub>2</sub> e/t fish+prawn	32,619t CO <sub>2</sub> e or 8.92 t CO <sub>2</sub> e/t fish+prawn	13,142t CO <sub>2</sub> e or 5.12 t CO <sub>2</sub> e/t fish	16,472t CO <sub>2</sub> e or 7.25 t CO <sub>2</sub> e/t fish	12,817t CO <sub>2</sub> e or 6.21 t CO <sub>2</sub> e/t prawn	12,462 t CO <sub>2</sub> e or 9.00 t CO <sub>2</sub> e/t prawn

## Part B. Emissions reduction strategy

Our decision to become certified as Carbon Neutral as an organisation, and extend that to our products, is a direct result of our aim to do our bit to ensure a sustainable, healthy, environment for the seafood and seafood products that we rely upon for our livelihoods.

Our vision is to increase the efficiency of our operations (relative to carbon emissions) as far as possible, reduce our carbon emissions wherever we can, and to fully offset remaining emissions. Our offsetting activities support direct revegetation activities in Western Australia, generating carbon offsets under the Gold Standard certification program, which takes into account, not only the direct carbon sequestration benefits of biodiverse plantings, but additional direct benefits including environmental, social, economic and heritage. We will review and investigate additional carbon offset programs in future years, with a particular focus on the development of eligible new “blue” carbon offset programs, which we have begun looking at with the CSIRO.

In the 2014 baseline year (after applying the recalculation policy):

- our total direct catch was 4,632 t of fish and prawns<sup>5</sup>,
- our total carbon footprint was 29,111 t CO<sub>2</sub>-e, and
- our emissions intensity was 6.28 t CO<sub>2</sub>-e per tonne of fish and prawns caught.

Our emissions reduction strategy is primarily focussed on the rate of carbon emissions per tonne of product caught. This is appropriate because our operations fluctuate as a result of either increasing or decreasing availability of wild fish stocks, changes to expand our operations into other fisheries, or due to government fisheries resources management or conservation changes out of our control.

Any meaningful emissions reduction strategy in a complex business will not happen overnight. For this reason, we saw 2016 as the first of many years in this journey. 2016 involved communication of the ideas, and analysis of options, within the business. As such, we estimated the quantity of emissions expected to be reduced early in this journey would be modest, while we investigate alternatives to create more significant reductions in future years. With over 80% of our emissions being directly attributable to fuel use on our vessels, any substantive reductions to our overall emissions, will likely be achieved here, as a result of operational and technological developments.

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<sup>5</sup> In this document, when referring to tonnes of fish and prawns caught, it means the weight of the *total product* that comes off the fishing vessel, which in the case of ‘fish’, consists of either whole fish, headed, gutted and tailed (HGT) trunks, headed and gutted (H&G) trunks, fillets, collars or cheeks, and in the case of ‘prawns’, consists of whole prawns, and minor bycatch species such as squid, scallops and lobster.



In addition to the three emission reduction projects that we have outlined in Part C (two of which focus on making our vessels more fuel efficient), below, that have already begun in development, our specific Emissions Reduction Strategy for 2017 will include:

- Aim to maintain or reduce the emissions intensity of the 2014 base line year of 6.28 t CO<sub>2</sub>-e per tonne of fish and prawns caught.
- Continue to communicate the policy and approach of our new “Carbon Neutral” stand to all employees, contractors, suppliers, customers and industry peer groups in an endeavour to gain their support for devising mechanisms to lower the carbon emission footprint of Austral Fisheries, and as a consequence, the industry as a whole;
- Public acknowledgement that this is a starting point in a journey for Austral Fisheries and our industry more broadly, and seek support to improve our vision and/or approach such that we can reduce both our carbon emissions directly, or our carbon emission ‘rate per kilogram of product’ where appropriate;
- Continue to work with non-government organisations such as the World Wildlife Fund for Nature to adapt or implement suggestions from their programs;
- Continue to encourage our suppliers to provide lower carbon emission goods and services to our company. This would include fishing gear, mechanical and engineering supplies, stevedore and provedore supplies, fuel, product suppliers, and others;
- Working with our certified products customers to encourage them to continue our Carbon Neutral story through to the end consumer, now that we have extended our gate, and the end user is now able to purchase carbon neutral seafood.
- Continue to work with stakeholders in this field to progress an international offset standard (like the Marine Stewardship Council certification for sustainable seafood), or alignment of domestic standards.
- Continue to work with stakeholders, such as CSIRO, to develop methodologies and logistically possible solutions surrounding for future for ‘blue carbon’ capturing systems.

We will review, evaluate, refine and report on our Emissions Reduction Strategy following the end of calendar year 2017.

## Part C. Emissions reduction actions

Table 3 indicates the measures that have been completed or are currently underway in regards to emissions reductions at Austral Fisheries.

<b>Table 3. Emissions reduction measures implemented in the current reporting period</b>					
Year completed	Emission source	Reduction measure and calculation method	Scope	Status	Reduction t CO <sub>2</sub> -e
2016	Paper	Moved to NCOS certified paper for all offices	3	Complete	0.8t
Not yet complete	Perth office electricity	Have received quotes for office lighting changeover to LED lights	2	Expect completion mid-2017 during office renovation	
Not yet complete	Litres of diesel per kilogram of prawn caught	We have begun the construction of a new state of the art prawn trawler, that we expect to be able to catch more prawns per litre of diesel than our current 30 year old vessels achieve.	1	Expect delivery of vessel late 2017, for the start of the 2018 season	
Not yet complete	Litres of diesel per kilogram of fish caught	We have received Board approval for an alternating generator for our largest toothfish vessel, which we estimate will reduce fuel usage by 20%.	1	Expect complete early 2018, for the start of the 2018 season	
Total emission reductions implemented in this reporting period					0.8t

### 3A. Emissions summary – Organisation

The total emissions of Austral Fisheries at the organisation level in 2016 was 32,619 t CO<sub>2</sub>-e, as shown in Table 4.

<b>Table 4. Emissions Summary - Organisation</b>		
Scope	Emission source	t CO <sub>2</sub> -e
1	Diesel oil - transport (Southern Ocean fleet)	13980
1	Diesel oil - transport (Northern Prawn fleet)	10941
1	Petroleum-based oils (Southern Ocean fleet)	22
1	Petroleum-based oils (Northern Prawn fleet)	14
1	Transport petrol-post 2004 vehicles	35
1	Gasoline for aircraft – spotter plane	48

<b>Table 4. Emissions Summary - Organisation</b>		
Scope	Emission source	t CO <sub>2</sub> -e
1	Fugitive emissions of refrigerant gas	0
1	Waste incinerated on vessels	2.9
2	Electricity purchased for Australian offices	99
2	Electricity purchased for international offices	0.8
3	Cold storage services	82
3	Food supplies on vessels	928
3	Water purchased for vessels and offices	0.8
3	Office paper	0.8
3	Bait for Southern Ocean	506
3	Supplies procured for vessels – cardboard	107
3	Remaining weight of supplies procured for vessels – assumed to be metals and plastics	395
3	Capital goods	54
3	Diesel oil - transport (Southern Ocean fleet)	714
3	Diesel oil - transport (Northern Prawn fleet)	559
3	Petroleum-based oils (Southern Ocean fleet)	5.7
3	Petroleum-based oils (Northern Prawn fleet)	3.6
3	Transport petrol-post 2004 vehicles	1.9
3	Gasoline for aircraft – spotter plane	2.5
3	Electricity purchased for international offices	0.1
3	Electricity purchased for Australian offices	13
3	Upstream transportation of supplies for fishing vessels	156
3	Upstream transportation of fish in trading division, by sea	1770
3	Waste to landfill	35
3	Business air travel - employees	164
3	Business air travel - crew/contractors	211
3	Business travel accommodation - employees	36
3	Business travel accommodation – crew/contractors	13
3	Employee commuting	50
3	Taxi use	4.2
3	Onshore processing of catch	13.6
3	Downstream transportation of Austral fish and prawn catch	1038
3	Downstream transportation of fish in trading division, by road	266
3	Retail and Restaurant use of product	346
<b>Total Gross Emissions</b>		<b>32,619</b>
<b>GreenPower or retired LGCs</b>		<b>0</b>
<b>Total Net Emissions</b>		<b>32,619</b>

### 3B. Emissions summary – Products

The total emissions of Austral Fish Catch (2273 t) in 2016 was 16,472 t CO<sub>2</sub>-e, as shown in Table 5. This represents emissions of 7.25 t CO<sub>2</sub>-e per tonne of product leaving the ship.

<b>Table 5. Emissions Summary for Austral Fish Catch</b>		
Emission source	t CO <sub>2</sub> -e for 2016 Austral Fish Catch	t CO <sub>2</sub> -e for emission source contributing to life cycle of one tonne of Austral Fish Catch in 2016
Pre-processing of fuel burned on ships (diesel)	714	0.3143
Pre-processing of lubricants (petroleum-based oils)	5.7	0.0025
Pre-processing of bait	506	0.2227
Pre-processing of packaging (cardboard)	0.1	0.00004
Remaining supplies procured for vessels – assumed to be metals and plastics	284	0.1250
Water supplied to vessels	0.2	0.0001
Transport of materials and equipment to vessels	135	0.0594
Production at sea: catching, processing and packing (diesel)	13980	6.1533
Production at sea: catching, processing and packing (petroleum-based oils)	22	0.0097
Freezing of product (at sea) (refrigerant gases)	0	0
Land-based processing	3.1	0.0014
Refrigerated transport	538	0.2368
Cold storage on land, third party	0	0
Cold storage, Austral facility (refrigerant gases)	0	0
Sales co-ordination, Leederville office – electricity use	20.6	0.0091
Sales co-ordination, Leederville office – pre-processing of supplied electricity	2.0	0.0009
Retail and Restaurant use of fish and prawn products	261	0.1149
<b>Total Gross Emissions</b>	<b>16,472</b>	<b>7.25</b>
GreenPower or retired LGCs	0	
<b>Total Net Emissions</b>	<b>16,472</b>	

The total emissions of Austral Prawn Catch (1385 t) in 2016 was 12,462 t CO<sub>2</sub>-e, as shown in Table 6. This represents emissions of 9.00 t CO<sub>2</sub>-e per tonne of product leaving the ship.

<b>Table 6. Emissions Summary for Austral Prawn Catch</b>		
<b>Emission source</b>	<b>t CO<sub>2</sub>-e for 2016 Austral Prawn Catch</b>	<b>t CO<sub>2</sub>-e for emission source contributing to life cycle of one tonne of Austral Prawn Catch in 2016</b>
Pre-processing of fuel burned on ships (diesel)	559	0.4037
Pre-processing of lubricants (petroleum-based oils)	3.6	0.0026
Pre-processing of gasoline for spotter plane	2.5	0.0018
Pre-processing of packaging (cardboard)	107	0.0773
Remaining supplies procured for vessels – assumed to be metals and plastics	111	0.0802
Water supplied to vessels	0.5	0.0004
Transport of materials and equipment to vessels	21	0.0152
Production at sea: catching, processing and packing (diesel)	10941	7.9017
Production at sea: catching, processing and packing (petroleum-based oils)	14	0.0101
Spotter plane	48	0.0347
Freezing of product (at sea) (refrigerant gases)	0	0
Land-based processing	10.5	0.0076
Refrigerated transport	500	0.3611
Cold storage on land, third party	36	0.0260
Sales co-ordination, Leederville office – electricity use	20.6	0.0149
Sales co-ordination, Leederville office – pre-processing of supplied electricity	2.0	0.0014
Retail and Restaurant use of fish and prawn products	85	0.0614
<b>Total Gross Emissions</b>	<b>12,462</b>	<b>9.00</b>
<b>GreenPower or retired LGCs</b>	<b>0</b>	
<b>Total Net Emissions</b>	<b>12,462</b>	

## 4. Carbon offsets

### Part A. Offsets summary

Austral Fisheries have offset all of our 2016 emissions through the purchase of Gold Standard Voluntary Emissions Reductions (VERs) in the *Yarra Yarra Biodiversity Corridor* project in south-west Australia. Our original baseline calculations required us to purchase 27,422 units to offset the estimate of our 2016 emissions. Having now completed our 2016 emissions audit, we know that this quantity was lower than actual emissions and therefore we have now purchased an extra 5197 units to cover 100% of our 2016 emissions.

The VERs purchased for the first year of certification can be seen in Table 7 below, all of which have been assigned on the Gold Standard Registry and can be viewed publically on the Markit Environmental Registry.

<b>Table 7: VER serial numbers for the 2016 reporting period</b>		
<b>Serial Number</b>	<b>Vintage</b>	<b>Credits</b>
<b>2016 reporting period, based on 2016 actual emissions</b>		
GS1-1-AU-GS3039-22-2010-4638-4426 to 6769	2010	2344
GS1-1-AU-GS3039-22-2011-4637-2399 to 11987	2011	9589
GS1-1-AU-GS3039-22-2012-4636-3544 to 17712	2012	14169
GS1-1-AU-GS3039-22-2013-4635-4138 to 5457	2013	1320
GS1-1-TR-GS707-21-2010-4833-5256 to 9603	2010	4348
2441-104153604-104154076-VCU-009-MER-IN-1-750-01012010-10122010-0	2010	473
4214-178923378-178923753-VCU-023-APX-IN-1-324-01012009-31122009-0	2009	376
	<b>Total</b>	<b>32619</b>

#### **Australian Native Reforestation within the *Yarra Yarra Biodiversity Corridor***

The *Yarra Yarra Biodiversity Corridor* Gold Standard project is part of nearly 14,000 hectares that has been revegetated and will capture an estimated 1.925 million tonnes of CO<sub>2</sub>e over the next 50 years.

The project involves the planting of mixed native tree and shrub species on degraded agricultural land that no longer supports viable farming practices. It's located in a globally significant biodiversity hotspot and in a region where over 90% of the land has already been cleared. This reforestation project is encouraging native animals and plants that have vanished or been pushed to the brink of extinction in the region to return and breed. This includes iconic threatened species such as Malleefowl, Bush Stone-curlew, Carnaby's Black-Cockatoo, Western Spiny-tailed Skink and the Woylie

(Brush-tailed Bettong), as well as over 30 species of conservation-significant native plants.

**Project impacts and benefits:**

As well as removing carbon dioxide from the atmosphere, the Yarra Yarra Biodiversity Corridor project also delivers substantial positive social outcomes in the region.

- Reducing soil erosion and salinity
- Employment, including local indigenous people, and liaison with Traditional Owners
- Aboriginal heritage sites recognised and registered
- Creating new industry and supporting local businesses
- Provision of opportunities for scientific research, eco-tourism and community education

**Part B. Offsets purchasing and retirement strategy**

All of our offsets purchased and retired for the 2016 certification period are VERs from the *Yarra Yarra Biodiversity Corridor* Gold Standard program.

As mentioned above, it should be noted that from the calendar year 2017, Austral has changed its offsetting obligations with the Carbon Neutral Program from upfront, to in arrears. We will therefore purchase and retire offsets for 100% of our 2017 emissions by the end of April 2018.

**Part C. Offset projects (Co-benefits)**

The Australian Gold Standard offset project involves planting a biodiverse mix of shrubs and trees which directly removes carbon dioxide from the atmosphere every day.

In addition, this revegetation has many direct benefits besides the central goal of sequestration and storage of carbon. The plantings involve a mix of 40-50 endemic plant species (some of which are endangered) on land that had become degraded and uneconomic for mainstream agriculture. Once planted, native insects, birds and animals also re-colonise, and a strong and resilient ecosystem is returned. The offset project also forms part of the *Yarra Yarra Biodiversity Corridor*, which helps these insects, birds and animals to transition through the landscape with less friction – there being a continuous corridor of bush habitat for nearly 100 kms.

Other direct benefits include environmental, social, economic and heritage:

- **Environmental** includes salt, wind and water erosion amelioration and improved soil biology and aeration (which equals increased soil carbon levels).
- **Social** includes local employment (including First Peoples) and support of local businesses (more than 100 people employed and nearly 100 local businesses benefit since project inception), which is contributing to reversing the population drift from rural areas to the cities. Scientific research, eco-tourism and community education is also gathering momentum.
- **Economic** includes nearly \$20 million invested from project inception into struggling rural areas, with the biodiversity project model allowing other sustainable and profitable land uses to occur (sandalwood, dryland irrigation, agistment of neighbours sheep for fire risk mitigation, beekeeping, bush foods and tourism).
- **Heritage** includes identifying and protecting significant First People's heritage sites of cultural significance and relying on Elders knowledge on how we interact and manage these areas. One of Carbon Neutral's core values is to recruit as many local indigenous people as possible and since project inception there has been nearly 50 individuals employed at different times.

## 5. Have you done more?

To date, we are the only protein source that we know of in the world that is certified carbon neutral, which we take great pride in. We have begun liaising with our supply chain and customer base, to encourage them to also take action in this space. Being certified as carbon neutral is not for every business, but some of our customers have shown interest in doing their bit, with the installation of solar panels, and implementation of recycling programs.

We have a genuine vision of leading our suppliers, customers and competitors to reduce carbon pollution as a result of their activities, and will continue to do so into the future.

Watch this space.