

## **FY11 Australian Environmental Reporting Definitions and Assumptions**

### **Purpose and standards used by ANZ**

This document outlines the definitions and assumptions that ANZ uses in preparing environmental data and reports. It has been developed to provide greater transparency around ANZ's data and reporting. ANZ's full reporting rules are outlined in ANZ Australia Emissions Management Plan: Data policies, processes and procedures V1.4 (21 December 2011) which has been prepared in accordance with *ISO 14064-3 - Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals* and verified by SGS in 2010. It is intended that this document will be updated annually to accompany ANZ's public environmental reporting.

ANZ's commitment to compliance with the principles of ISO 14064-Part 1 is that:

- Relevance – ANZ will select the GHG sources, GHG sinks, GHG Reservoirs, data and methodologies appropriate to the needs of its stakeholders
- Completeness – ANZ will include all relevant GHG emissions and removals in its corporate GHG inventory
- Consistency – ANZ will prepare its GHG reports in a way that will enable meaningful comparisons in GHG related information
- Accuracy – ANZ will reduce bias and uncertainties as far as is practical and will err on the conservative side wherever there is uncertainty to ensure that our reported emissions are not under-estimated
- Transparency – ANZ will provide sufficient and appropriate disclosure of our GHG information to stakeholders (including exclusions) to allow them to make informed decisions with reasonable confidence.

Since it began reporting on GHG emissions in 2004, ANZ has followed the guidance provided in the 'Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard' (World Resources Institute and World Business Council on Sustainable Development, 2004) (referred to below as the GHG Protocol). ANZ has also adhered to the Global Reporting Initiative (GRI) sustainability reporting guidelines which include indicators relating to GHG emissions and energy consumption.

### **Key Normalisers**

#### **Fulltime equivalent (FTE) employees**

The annualised figure applied by ANZ for Australia-based FTEs is an average of the twelve 'month-end' figures that are tracked and reported internally. OnePath (formerly ING Australia) employees that were integrated into ANZ in December 2009 have been reported separately in 2011. The FTE figure is a key normaliser that is used by ANZ to track its environmental performance in two important areas – premises water use and energy use. Reporting our water use and energy consumption on an FTE basis allows us to better understand whether we are managing to decouple the growth in our Australia-based operations from the growth in (premises) water and energy use which are important goals for ANZ.

**Occupied building space**

The annualised figure applied by ANZ for occupied building space in Australia is an average of the twelve 'month-end' figures that are tracked and reported internally. It includes the space occupied in commercial and retail premises across every state and territory in Australia. Building space occupied by OnePath (formerly ING Australia) is reported separately in 2011. It is intended for future reporting periods to report one consolidated figure for occupied building space that will reflect all of ANZ's Australia-based operations.

**Energy****Total energy consumed in premises**

This figure represents the cumulative energy used in ANZ's commercial and retail premises across Australia. It includes natural gas used in boilers and in kitchenettes; diesel oil used in on-site generators for planned or unforeseen power outages as well as electricity use (in metered sites). All energy types are converted into units of MWh equivalence using the energy content and conversion factors listed in the National Greenhouse and Energy Reporting (NGER) Measurement Determination and the National Greenhouse Accounts (NGA) Factors.

It does not cover the power usage of ATMs that are situated outside of ANZ's branch network such as shopping centres and petrol stations (see 'Unmetered electricity and ATMs' below). This figure is used to measure ANZ's performance against the indicator 'energy use/FTE'.

**Commercial and retail electricity**

Electricity usage is tracked for ANZ with the aid of monthly or quarterly invoices issued by energy retailers. This occurs for the bulk of ANZ's commercial and retail facilities which have their own electricity accounts with energy retailers. ANZ occupies a small number of retail and commercial facilities where the electricity bills are part of the 'outgoings' for the site and consequently ANZ has no transparency around the actual electricity used for these sites. Estimates are made for these sites based on the NLA and the state average for similar sized sites.

**Non-branch ATMs**

ANZ makes an estimate of the electricity used in non-branch ATMs using conservative estimation techniques that have been accepted by our independent assurance providers as valid.

**Percentage of electricity used that is renewable (% renewable electricity)**

ANZ has installed photovoltaic solar cells on the roofs of two of our facilities that generate electricity that is used within these buildings. This indicator tracks how much of our total electricity consumption used in our premises throughout the year was produced from these renewable sources at ANZ's facilities.

**Fossil fuels consumed in premises**

This indicator tracks the amount of primary fossil fuel energy sources consumed within ANZ's commercial and retail facilities for stationary energy purposes. For ANZ this includes the natural gas consumed in boilers and in kitchenettes and the diesel used in on-site electricity generators. The overall consumption of fossil fuels in premises is calculated using energy content and conversion factors outlined in the NGER (Measurement) Determination and NGA Factors.

**Non-premises energy**

This indicator tracks the amount of energy used by ANZ for transportation purposes which includes tool-of-trade vehicles, rental cars and the ANZ mini-bus that transports ANZ employees between two of ANZ's key Melbourne commercial facilities. It includes the various liquid fuels used in these vehicles namely gasoline, diesel oil and ethanol that have varying energy contents per unit of fuel purchased. The energy content factors used to calculate the total amount of 'non-premises energy' consumed are sourced from the NGA Factors.

**Transport****Total corporate transport**

The total kilometres travelled for a business purpose by Australia-based ANZ and OnePath employees and includes road travel (tool-of-trade vehicles, rental cars and the ANZ mini-bus) and air travel (great circle distance between the origin and destination for each leg flown).

**Road travel**

The total amount of kilometres driven by Australia-based ANZ and OnePath employees in tool-of-trade and rental vehicles as well as the distance travelled by the ANZ mini-bus that transports ANZ employees between two of key Melbourne commercial facilities.

**Air travel (domestic)**

The cumulative distance flown by Australia-based ANZ and OnePath employees within Australian and other countries' national borders. The flight distance for each leg is the great circle distance between the origin and destination and provided by ANZ's travel partner.

**Air travel (international)**

The cumulative distance flown by Australia-based ANZ and One Path employees where the origin and the destination are in different countries. The flight distance for each leg is the great circle distance between the origin and destination and provided by ANZ's travel partner.

**Paper****Total paper consumed**

The combined weight of paper used for 'office' purposes at ANZ's retail and commercial facilities and 'customer paper' that is purchased by ANZ and distributed to customers.

**Customer paper**

The combined weight of customer paper products purchased by ANZ for a variety of purposes including statements, envelopes, brochures, booklets, leaflets, and flyers.

**Office paper**

The combined weight of office paper purchased from third-party suppliers and used in ANZ retail and commercial premises including printing, photocopying and faxing.

**FSC chain of custody paper (percentage)**

The overall weight of office and customer paper purchased by ANZ that carries a Forestry Stewardship Council (FSC) certification label as a proportion of the total quantity of print and office paper purchased throughout the year.

**Recycled content (percentage)**

The overall weight of office and customer paper purchased that contains recycled fibres as a proportion of the total quantity of print and office paper purchased throughout the year.

**Water****Total water consumed at key sites/FTE**

ANZ monitors water consumption billing data for eleven of its commercial sites which are the permanent location of sixty per cent of ANZ's Australia-based workforce. The water consumption per (FTE) staff member based at these sites is used by ANZ to better understand to what extent water use is being decoupled from growth in its Australia-based operations. The measurement of FTE at these eleven sites is an average of the twelve 'month-end' figures that are combined for each site that are tracked and reported internally.

**Waste and Recycling****Total waste and recycling**

This is the combined total of waste generated from within ANZ's commercial and retail facilities that is either sent to a landfill or separated at source for recycling (see below for more detail on how waste quantities are calculated).

**Total waste to landfill**

ANZ estimates the total amount of waste that it sends to landfill each year through bi-annual waste audits at nine major commercial buildings over a ten-day period and where the number of FTEs is known. These audits allow the average waste generated per FTE-employee during the audit periods to be calculated which is then extrapolated over the full year. These average waste generation results are further extrapolated across ANZ's entire Australian workforce.

**Total waste recycled**

ANZ has established collection and recycling contracts with a number of vendors across Australia. These vendors collect and recycle paper and cardboard, organic waste, commingled waste, e-waste and printer toners and cartridges. The figure for total waste recycled is the combined weight of all these recycled products that are reported separately each month to ANZ by the various vendors.

**Paper and cardboard recycled**

This recycling stream dominates ANZ's overall recycled waste and is comprised of paper that is sent away for secure document destruction (prior to recycling), as well as other mixed paper and cardboard sources.

## **Greenhouse gas emissions**

### **Organisational boundary**

ANZ has adopted the 'operational control' approach to reporting our organisational greenhouse gas (GHG) emissions. This reporting approach allows ANZ to meet the requirements of the National Greenhouse and Energy Reporting (NGER) legislation and to ensure consistency in reporting across other voluntary reporting requirements. ANZ uses the operational control definition as defined in the GHG Protocol and used in the NGER Act 2007.

ANZ's corporate greenhouse gas inventory includes the direct (Scope 1) and indirect (Scope 2) GHG emissions arising from all activities undertaken at facilities under our operational control for all or part of the reporting year. ANZ also includes in its organisational boundary the emissions arising from activities that are ancillary to the principal activity performed at another facility and which come under the 'overall control' of the ANZ Banking Group Limited (ANZBGL). An example of this are the emissions arising from 'tool-of-trade' vehicles driven by ANZ employees which is an activity that is ancillary to the activities performed by ANZ at a fixed location e.g. a retail or commercial site.

ANZ has also voluntarily undertaken to include in our organisational boundary a number of indirect (Scope 3) emissions that occur as a consequence of the activities undertaken by ANZBGL, but arise from facilities outside of the operational control of ANZBGL.

ANZ also includes in its organisational boundary the emissions arising from facilities that come under the operational control of its subsidiaries and any unincorporated joint ventures that ANZBGL is a participant in or where ANZBGL has been nominated (and accepted) as the responsible reporting entity.

During FY11 ANZBGL had operational control of the following facilities:

- 28 commercial buildings
- 6 'critical' sites – i.e. call centres and processing centres
- 2 data centres
- 873 retail sites – personal and business banking branches/outlets (including associated ATMs)
- 1,826 stand alone ATMs – not connected to a branch.

### **Reporting periods**

ANZ reports its annual GHG emissions using two different reporting timeframes. To meet its legislative obligations under the NGER Act and Regulations, ANZ is required to report its GHG emissions, energy consumption and energy production (from its Australian operations only) for the 1 July – 30 June year. For the remainder of its GHG reporting, ANZ reports for the Australian banking year which is 1 October – 30 September.

### **Base year and significance thresholds**

ANZ has set as its GHG emissions baseline the period from 1 October 2009 – 30 September 2010. If ANZ Australia acquires or divests any companies with emissions which, if counted (or discounted) would make a difference to the baseline of greater than 1% (in either direction), ANZ will include (or deduct) the full years emissions of that company in the emissions baseline. Where possible this change will be made for

the emissions baseline year, otherwise the closest available year in which accurate and complete data exists will be used.

ANZ will also apply a 1% significance threshold to determine whether the emissions baseline will need to be retrospectively adjusted to take account of changes in calculation methods or the release of revised emission factors.

ANZ will not alter the emissions of baseline years due to organic growth or decline in emissions.

In FY11 ANZ has followed this methodology to make changes to the base year as a result of the addition of three new sources of emissions:

1. Outsourced data centres
2. Base building emissions for commercial sites
3. Executive air travel.

In addition, ANZ has made changes to the following calculation methods:

- Updated the emissions factor for paper following the publication of a revised factor by the Victorian EPA in 2011.
- Simplified the process for calculating emissions from taxi travel using data from the Green Vehicle Guide.
- Updated the New Zealand electricity factor for Australian staff staying in hotels in New Zealand based on using the quarterly updates available from the Ministry of Economic Development rather than the annual update from the Ministry of Environment.

An updated inventory has been included on ANZ.com in the ANZ FY11 Environmental Indicators Report.

### **Greenhouse gas emissions reported**

ANZ's annual greenhouse gas inventory includes all six greenhouse gases listed under the Kyoto Protocol:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur Hexafluoride (SF<sub>6</sub>)

To reflect the different warming potency of each of these greenhouse gases, ANZ's total emissions will be expressed in terms of tonnes of carbon dioxide equivalence (CO<sub>2</sub>-e). This is achieved by multiplying the tonnage of each of these six greenhouse gases by their global warming potential listed in Regulation 2.02 of the *NGER Regulations 2008*.

### **Scope 1 emissions**

#### ***Natural gas***

Natural gas is mainly used by ANZ to fuel boilers in commercial buildings in Victoria. It is also used in a small number of sites for cooking in kitchens. As the GHG

emissions that arise from the combustion of natural gas come from facilities under the operational control of ANZ, they are therefore a source of Scope 1 emissions.

The calculation of the GHG emissions arising from the combustion of natural gas is undertaken using the emission factors outlined in Schedule 1, Part 2 Item 17 of the NGER (Measurement) Determination - 'natural gas distributed in a pipeline'.

#### ***Liquid fuels used for transportation***

ANZ has a fleet of 'tool-of-trade' vehicles that come under ANZ's operational control. The GHG emissions that arise from the combustion of liquid fuels in these vehicles is therefore a source of Scope 1 emissions for ANZ. Note that the emissions arising from the use of 'novated lease' vehicles for work purposes are recorded as 'Business travel in personal vehicles' (Scope 3). Private mileage is not included in the scope of ANZ's GHG Inventory.

The calculation of the GHG emissions arising from the combustion of liquid fuels for transportation purposes is undertaken using the emission and energy content factors for the applicable fuel types outlined in Schedule 1, Part 4 (Division 4.1) of the NGER (Measurement) Determination.

#### ***Liquid fuels used for stationary energy purposes***

ANZ periodically operates back-up diesel generators at key commercial sites to ensure uninterrupted service provision in the event of planned or unforeseen disruptions to power supplies. Because the facilities in which these generators operate come under the operational control of ANZ, the resulting GHG emissions that arise from the combustion of diesel are a source of Scope 1 emissions for ANZ.

The calculation of the GHG emissions arising from the combustion of diesel oil for stationary generation purposes is undertaken using the emission and energy content factors outlined in Schedule 1, Part 3 Item 40 of the NGER (Measurement) Determination - 'diesel oil'.

#### ***Rental cars***

ANZ Australia staff occasionally book hire cars within Australia for business purposes. Because staff are required to comply with ANZ's operating and OHS policies when hiring cars, the emissions arising from the combustion of fuels are within ANZ's overall control for the period of the activity and are therefore a source of Scope 1 emissions which are considered as an ancillary activity. It is assumed that the majority of hire cars are typically less than 12 months old and so the vehicles driven are assumed to be the latest available model.

The volume of fuel used in rental cars is firstly estimated by multiplying the total aggregate kilometres driven in each vehicle type by the fuel consumption factor for that vehicle type outlined in the Australian Government's Green Vehicle Guide website (see [www.greenvehicleguide.gov.au](http://www.greenvehicleguide.gov.au)). Because the majority of ANZ's hire car travel occurs in urban settings, ANZ applies the 'urban' factor. ANZ also updates these fuel consumption factors on October 1 each year at the commencement of a new reporting period. GHG emissions are then calculated by applying the relevant emission and energy content factors for the fuel types outlined in Schedule 1, Part 4 (Division 4.1) of the NGER (Measurement) Determination.

## **Scope 2 emissions**

### ***Energy indirect greenhouse gas emissions***

Electricity is used by ANZ to operate facilities and services including lighting, IT, heating, ventilation and air conditioning (HVAC) equipment and appliances (such as ATMs, fridges and microwaves) across its commercial, and retail buildings. ANZ includes base building as well as tenancy electricity for all of the commercial sites where it is the sole occupant or where it is the primary tenant. As such, ANZ accounts for the bulk of the base building energy use in our emissions inventory.

ANZ also has a network of 'independent' (non-branch) Automatic Teller Machines (ATMs) across all states and territories of Australia that are located in facilities that ANZ does not have operational control of, such as service stations, supermarkets and shop-fronts. However, because ANZ retains full responsibility for servicing these ATMs, they are within ANZ's overall control and have therefore been included within the organisational boundary of ANZ's GHG Inventory. ANZ is required in most cases to estimate the electricity used by these machines as they are not separately metered from the facility in which they are located.

To meet its legislative obligations under the NGER legislation, ANZ applies the Scope 2 emissions factors outlined for each state and territory that its facilities are located in and for the relevant financial year in which the electricity is used in our facilities. These factors are obtained from Schedule 1 Part 6 of the NGER (Measurement) Determination.

## **Scope 3 emissions**

### ***Energy extraction, transmission and distribution losses***

ANZ uses a variety of energy sources in conducting its day-to-day operations. While the combustion of these primary energy sources results in direct greenhouse gas emissions there are also further emissions released upstream. These emissions are associated with the extraction, processing and transport of liquid fossil fuels and natural gas and the losses of electricity that occur through transmission and distribution from the site of generation to the final consumption point. Because ANZ's operations place a demand on final energy commodities, it is also indirectly responsible for the emissions that occur upstream from the final consumption point. ANZ reports these emissions as Scope 3 emissions sources as they occur as a result of ANZ's operations, but from a source outside of ANZ's operational control.

For ANZ's Australian operations the Scope 3 emissions sources associated with extraction, processing, transmission and distribution losses of fossil fuels are obtained from the NGA Factors published on the Department of Climate Change and Energy Efficiency website.

### ***Business travel in private vehicles and novated lease vehicles***

ANZ staff are occasionally required to travel in their own private vehicles or novated lease vehicles for a business-related purpose. This is a source of Scope 3 emissions for ANZ as while the travel occurs as result of business needs, it occurs from a source outside of the overall control of ANZ.



In calculating the emissions from these vehicles ANZ has assumed for conservative purposes that the vehicle driven is a 6 cylinder, 4.0 litre Ford Falcon XT that is 2-3 years old. Emissions are then calculated by multiplying the known number of kilometres driven by the 'combined' fuel efficiency factor for the Ford Falcon obtained from the Australian Government's GreenVehicle Guide website (see [www.greenvehicleguide.gov.au](http://www.greenvehicleguide.gov.au)). ANZ applies the 'combined factor' in estimating emissions from this source as it is assumed that the travel would occur on a combination of urban and open roads.

#### ***Air travel***

Staff travel in commercial and private airliners is a source of Scope 3 emissions for ANZ. This is because emissions occur as a result of ANZ's demand for domestic and international travel, but are from aircraft that lie outside the operational control of ANZ.

The calculation of ANZ's air travel emissions is undertaken using the greenhouse gas emission factors (kg CO<sub>2</sub>-e/mile flown) available in the 'Greenhouse Gas Conversion Factors for Company Reporting' published by the UK Department for Environment, Food and Rural Affairs and the UK Department of Environment and Climate Change (available at <http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm>). The selection of appropriate factors is based on the distance of travel flown as well as the class of travel flown as first class, business class and premium economy seats have a higher emissions factor per kilometre flown due to the proportionately larger space occupied by passengers travelling in these premium seats. Each flight is categorised as either domestic (within country borders), short haul international (<3,700km) or long haul international (≥3,700km) and the class of flight allocated to either economy, premium economy, business class or first class. Where the class of travel flown has not been made available by ANZ's travel partners, ANZ uses average factors that apply to the distance flown. No class of travel is applied to flights classified as domestic travel. ANZ has also elected to apply an uplift factor of 9% to take into account the additional distance flown between two points due to non-direct routes, delays and circling. This aligns with best-practice guidance outlined in DEFRA/DECC 2010.

While the most recent version of the DEFRA/DECC document contains factors for indirect emissions associated with the extraction, processing and transport of the jet fuel used in air travel, ANZ elected in 2011 to only account for the direct emissions associated with the combustion of the jet fuel for this source of scope 3 emissions.

ANZ now includes a small amount of executive air travel in its GHG inventory. The emissions are calculated based on the number of hours of flight time and the litres of fuel used.

#### ***Taxi travel***

Taxi travel is most commonly used by employees for travel between ANZ corporate and client offices or when undertaking air travel to interstate and international locations. It is therefore a source of Scope 3 emissions for ANZ as this travel occurs as a result of ANZ's business activities, but outside of the facilities for which ANZ has operational control.

This is the second year that the emissions from taxi travel have been incorporated into ANZ's GHG inventory and there are no common standards that exist to allow its consistent calculation between and within countries. This is mainly because taxi

vendors do not currently provide any information on the distance driven for each ride and the tariffs applied to taxi fares vary between regions, states and countries. To overcome this issue, ANZ has applied average Australian trip data made available (on an annual basis) by the Australian Taxi Industry Association (ATIA) and used the overall cost of taxi fares as a proxy for the distance driven and therefore the carbon impact of taxi travel (see <http://www.atia.com.au/library.php?tab=1>).

With the majority of Australia's taxi fleet consisting of 6-cylinder vehicles fuelled by LPG, it is assumed that all taxi travel occurs in LPG-powered Ford Falcons that are two years old. The fuel consumption factor for this vehicle type is sourced from the Australian Government's 'Green Vehicle Guide' website and as the majority of ANZ's taxi travel occurs in urban settings, ANZ applies the 'urban factor' to calculate the emissions arising from taxi travel.

### ***Hotel accommodation***

The use of electricity and fuel for stationary energy purposes in hotel accommodation is a source of Scope 3 emissions for ANZ. This is because they occur as a result of ANZ's business activities, but occur outside of the facilities for which ANZ has operational control.

There are two significant variables that affect the quantity of GHG emissions arising from hotel accommodation. First, there is significant fluctuation in the size and type of hotels used by ANZ staff. The available research shows that high quality hotels generally have a higher energy use per square meter than hotels of a lower star rating. The second factor is that emissions factors associated with electricity consumption differ significantly depending on the fuel mix of power generation in a particular locale or country.

The method used by ANZ to estimate the GHG emissions arising from staff use of hotel accommodation is based on data presented in two peer-reviewed articles<sup>1,2</sup> that takes into account these two factors. The studies which analysed the energy performance of 29 hotel buildings in Singapore over a 2-year period included a mix of 3, 4 and 5 star hotels. It also identified that energy use per room night is influenced by average occupancy rates with higher occupancy rates meaning lower energy use per room night as the energy use of the hotel is distributed across more occupied hotel rooms. In Singapore the study of the 29 hotels over a two year period showed that the average occupancy rate was 78% which is the default occupancy rate applied by ANZ for all hotel stays outside of Australia. In Australia, data obtained from the ABS showed that the average occupancy rate for 5 star Hotels, motels and serviced apartments with 15 or more rooms over the period July 2010 – June 2011 was 75.9% which was the occupancy rate applied for all hotel stays within Australia. The average electricity and stationary energy use per room night was then multiplied by the relevant emission factors to calculate the estimated greenhouse gas emissions per room night.

For electricity, these factors were derived from 3 separate sources depending on whether the stays occurred in Australia, New Zealand, or other countries throughout the world. For Australian hotel stays the electricity factors were sourced from

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<sup>1</sup> Rajagopalan, P., Wu, X.C., & Lee, S.E. 2009 'A study on energy performance of hotel buildings in Singapore'. *Energy and Buildings* v41(12) pp 1319-1324

<sup>2</sup> Wu, X.C., Rajagopalan, P., & Lee, S.E. 2010 'Benchmarking energy use and greenhouse gas emissions in Singapore's hotel industry'. *Energy Policy* v38 pp 4520-4527

Schedule 1, Part 6 of the NGER (Measurement) Determination and applied dependent on the state or territory in which the hotel was located and for the financial year in which the Determination applies. In 2011 ANZ has elected to apply only the 'Scope 2' emission factor rather than the full cycle factor that incorporates the 'Scope 2' and 'Scope 3' emissions.

For New Zealand-based hotel stays the source of the emission factor is the '*Guidance for Voluntary, Corporate Greenhouse Gas Reporting*' that is prepared by the New Zealand Ministry for Economic Development (MED) quarterly. This factor is applicable for the country as a whole and ANZ again elected to apply only the 'Scope 2' emission factor rather than the full cycle factor.

For hotel stays in the rest of the world the source of the electricity emission factors are those outlined in the document '*CO<sub>2</sub> Emissions from Fuel Combustion*' that is prepared and updated annually by the International Energy Agency (IEA). This document contains individual factors for all OECD countries as well as many developing countries. For Pacific Island nations that do not have a separate emissions factor listed the default emission factor for Annex II countries (Pacific) is applied.

To calculate stationary energy emissions, ANZ applied the appropriate emission factors from the NGER (Measurement) Determination for piped natural gas and diesel that are used for stationary energy generation purposes.

The tables below shows the average electricity and stationary energy emissions per room night that were applied by ANZ to calculate the overall emissions arising indirectly from hotel stays by Australian based ANZ staff.

***Outside Australia***

Average electricity use per room-night (kWh)	89.43 (assumes a 78% occupancy rate)
Average emissions (gas and diesel) (kg CO <sub>2</sub> -e) per room night	3.82 (assumes a 78% occupancy rate)

***Australia***

Average electricity use per room-night (kWh)	91.91 (assumes a 75.9% occupancy rate)
Average emissions (gas and diesel) (kg CO <sub>2</sub> -e) per room night	3.93 (assumes a 75.9% occupancy rate)

**Waste to landfill**

A certain proportion of the waste generated each day by ANZ staff is discarded to landfill. The breakdown of organic wastes in landfill generates methane – a potent greenhouse gas that can escape to the atmosphere through the landfill cap or through sub-surface migration. The main types of waste generated by ANZ that can break down this way include paper and cardboard waste and food waste. These emissions are a source of Scope 3 (indirect) emissions for ANZ as they occur at waste management facilities outside the operational control of ANZ.

ANZ estimates the total amount of waste that it sends to landfill each year through bi-annual waste audits at nine major commercial buildings over a ten-day period and where the number of FTEs is known. By working out the average waste generated per FTE-employee during these audit periods and extrapolating the results over a full year it is then possible to apply these average waste generation results across our entire Australian workforce.

The estimated greenhouse gas emissions arising from the landfilling of this waste is calculated by ANZ by applying the factor for 'commercial and industrial' waste (t CO<sub>2</sub>-e/t of waste) available in the NGA Factors produced by the Australian Government's Department of Climate Change and Energy Efficiency.

#### **Paper use**

ANZ's use of paper for business purposes is a source of Scope 3 (indirect) emissions. This is because paper production is an energy and emissions intensive process and ANZ contributes indirectly to these emissions as it purchases paper from third party suppliers who lie outside the operational control of ANZ. With the majority of ANZ's paper consumption associated with customer facing printed paper, ANZ recognises that there would be further indirect emissions associated with the printing process. By the end of October 2010 ANZ has been unable to identify a reliable emission factor that would provide a robust estimation of the emissions arising from commercial printing. In the absence of relevant and reliable emissions factors for print paper from third-party suppliers, no distinction has been made by ANZ between the emissions factors for office and print paper.

It is ANZ's intention to continue to work with our printing suppliers so that we can include emissions from printing in future emissions inventories for ANZ. ANZ will then make retrospective adjustments to previous emissions inventories to ensure consistency.

To calculate the emissions arising indirectly as a consequence of ANZ's consumption of office and customer paper, ANZ applies an emission factor for paper that is based on research commissioned by EPA Victoria and available from their website.

#### **Outsourced data centres**

In FY11, ANZ established there were three external data centres that needed to be included as part of the GHG inventory (two in New South Wales and one in Victoria). ANZ has used the total energy usage of the IT equipment together with the cooling demand based on the power usage effectiveness ratio (PUE) of each data centre in order to calculate the associated GHG emissions.

#### **Base building usage in commercial facilities**

ANZ has attempted to estimate the base building emissions that occur in sites where ANZ is a tenant but is not responsible for base building operation. ANZ requests information on annual energy consumption for the base building from the building owner on an annual basis. ANZ then uses the landlord data with the % of NLA occupied by ANZ and calculates the associated emissions.

#### **Exclusions**

There are several sources of GHG emissions that have been excluded from ANZ's GHG Emissions Inventory on the basis that their quantification is not currently technically feasible or cost effective. This approach aligns with guidance provided in Section 4.3.1 of ISO 14064-Part 1. However, ANZ will continue to seek appropriate

data and methods that will allow it to quantify estimated emissions for the most material of these sources. Emission sources and the reasons for their exclusion are outlined in the table below:

Emission Source	Reason for Exclusion
Leakage of hydrofluorocarbon refrigerants from commercial chiller units (Scope 1)	<ul style="list-style-type: none"> <li>• Not required to be reported under NGER legislation as ANZ's facilities are not one of the 6 ANZSIC industry classifications listed in the NGER (Measurement) Determination</li> <li>• Data on refrigerant re-charging or the capacity of chiller units is not centrally collated to allow an estimation of emissions from this source. It is not currently technically feasible for ANZ to estimate emissions from this source.</li> </ul>
Fire extinguishers (CO <sub>2</sub> ) (Scope 1)	<ul style="list-style-type: none"> <li>• A visual inspection of the ANZ Centre in November 2010 has shown that all fire extinguishers stored in the building are dry powder extinguishers used to contain electrical fires and not CO<sub>2</sub> extinguishers.</li> <li>• Fire extinguishers are rarely if ever used and leakage is considered extremely minimal. Because CO<sub>2</sub> also has a global warming potential of 1 the contribution to ANZ's overall Australia-based GHG inventory is considered to be extremely small and far less than 0.1% of overall emissions.</li> <li>• Considering the likely small contribution that CO<sub>2</sub> fire extinguishers would make to ANZ's GHG emissions it is not considered cost-effective for ANZ to undertake a detailed inventory of its fire extinguishers at almost 1,000 commercial and retail locations.</li> </ul>
Energy in residential properties	<ul style="list-style-type: none"> <li>• ANZ considers the residential properties it owns to be outside its operational control for GHG reporting. This is the same approach adopted for NGER. The tenant (branch manager) in each of the sites is responsible for the payments of all bills associated with the properties.</li> </ul>
Energy for retailers at ANZ Centre	<ul style="list-style-type: none"> <li>• At the ANZ Centre, ANZ has ten retailers located at the site with their own energy meters. ANZ does not monitor this energy consumption and has not reported this energy as a scope 3 source.</li> </ul>
Paper printing (Scope 3)	<ul style="list-style-type: none"> <li>• ANZ has been unable to identify a suitably robust emissions factor that would allow it to estimate the emissions associated with the printing process used to communicate information on customer facing print. ANZ intends to continue working with its print suppliers to develop method for reporting these Scope 3 emissions for future reporting periods.</li> </ul>
Air Travel (Upstream emissions associated with the extraction, processing and transport of fuel used	<ul style="list-style-type: none"> <li>• While the 2010 DEFRA Guidelines used by ANZ to estimate the Scope 3 emissions from air travel contain for the first time the additional 'upstream' factors to account for the extraction, processing and transport of fuel used in commercial aircraft, ANZ will</li> </ul>

in commercial aircraft)	<p>at this stage only account for the global warming impact associated with the direct combustion of the fuel. This is reflective of the fact that this is a scope 3 emission source and the methodology is applicable to airlines that are responsible for the scope 1&amp;2 emissions.</p> <ul style="list-style-type: none"> <li>• By applying a 9% uplift factor and applying factors based on the class and distance of travel flown ANZ considers that it is using conservative assumptions to estimate the GHG emissions from air travel.</li> <li>• ANZ also considers it likely that the measurement of the global warming impact of air travel will continue to emerge in the coming years, particularly as more research is undertaken into the radiative forcing index. Hence ANZ considers that there is sufficient uncertainty around the GHG emissions factors for air travel to exclude these upstream emissions factors (at least temporarily).</li> </ul>
Employee commuting (Scope 3)	<ul style="list-style-type: none"> <li>• Surveying approximately 25,000 employees on the distance and mode of travel they use to get to work each day is not currently cost-effective for ANZ.</li> </ul>
Couriers (Scope 3)	<ul style="list-style-type: none"> <li>• As couriers who undertake deliveries on behalf of ANZ operate on a non-exclusive basis and are likely to operate on a 'milk-run' delivery mode, it is considered technically unfeasible for ANZ to make a reliable estimate of emissions from this source and is unlikely to represent a materially important source of emissions.</li> </ul>
Food and beverages (catering purposes and meals) (Scope 3)	<ul style="list-style-type: none"> <li>• There are currently no reliable GHG emissions factors available that would allow ANZ to make an accurate estimation of emissions from catering. The diversity of food and beverages purchased and the uncertainty of the location of its growth and/or manufacturing origin makes it technically very difficult for ANZ to reliably estimate.</li> <li>• It is also not cost effective for ANZ to undertake a life cycle assessment to estimate emissions from this source</li> </ul>
Embodied emissions in purchased items and materials and their transportation to ANZ premises e.g. IT equipment (Scope 3)	<ul style="list-style-type: none"> <li>• There are currently no reliable GHG emissions factors available that would allow ANZ to make an accurate estimation of emissions from this source. Hence, it is technically unfeasible for ANZ to estimate emissions from this source and it is not cost effective for ANZ to undertake a life cycle assessment to estimate emissions from this source. In addition, a significant proportion of IT devices used by ANZ are leased rather than owned.</li> </ul>

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