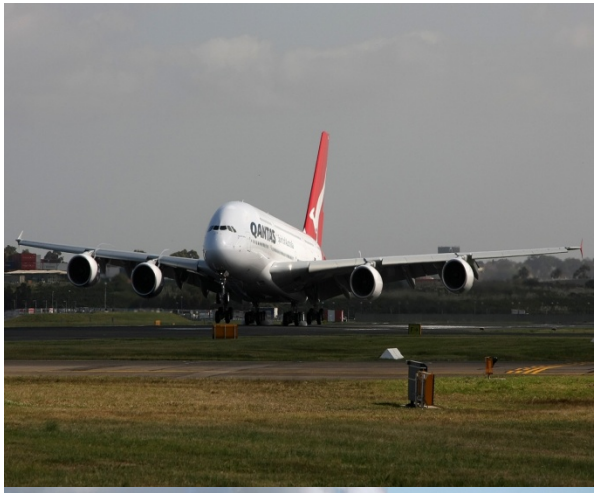


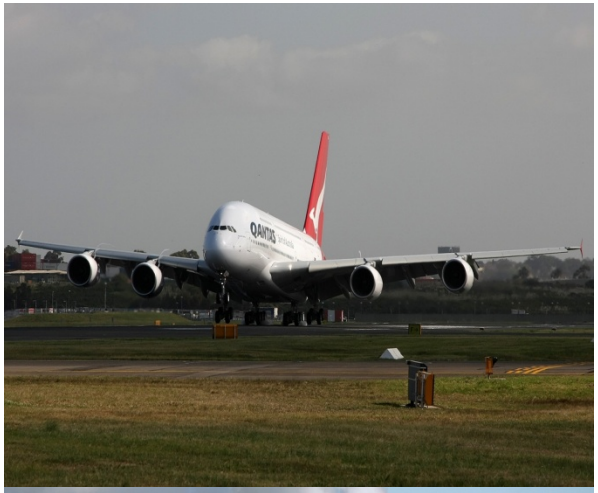
Basis Risk Pty Ltd

Basis Risk

Carbon Pollution Reduction Scheme (CPRS)

SME Workshop

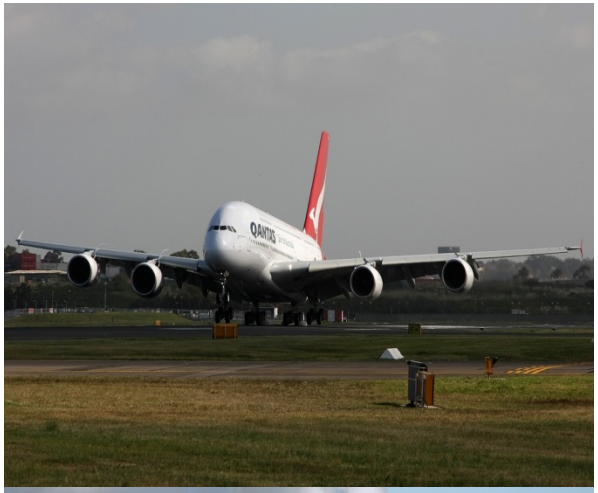
April 2009



Basis Risk

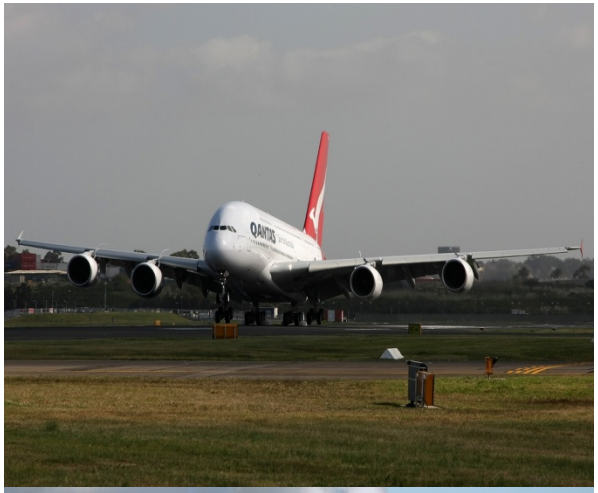
Agenda

1. Workshop objectives
2. Introduction to Emissions Trading & the CPRS
3. How will the CPRS impact on SME's?
4. Managing your carbon risk
5. Case Studies



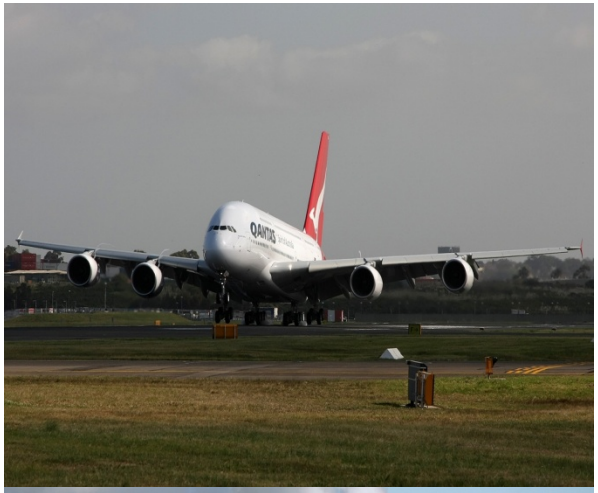
Objectives of Today's Workshop

- What does the CPRS mean for your bottom line?
- How can you reduce your carbon footprint?
- How should you manage risk and exposures?
- What opportunities does CPRS present to you?



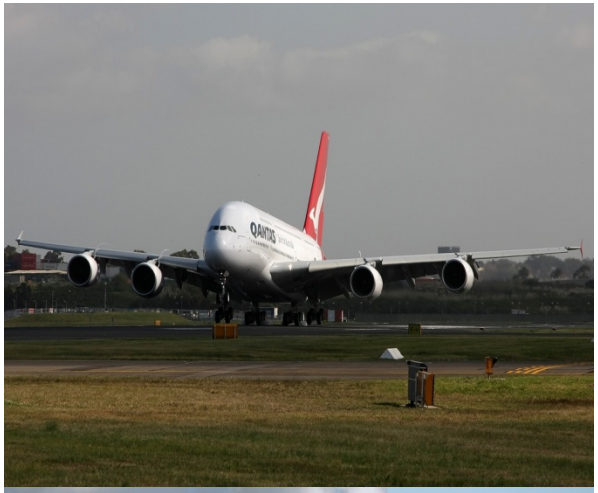
Greenhouse Gases: The Story so Far

- 19th century scientists realised that certain gases in the atmosphere can trap heat causing a "greenhouse effect" that affects the planet's temperature. At the turn of the 20th century, Svante Arrhenius calculated that emissions from human industry might someday lead to global warming, but his ideas were dismissed by many.
- In 1938, G.S. Callendar argued that the level of CO2 in the earth's atmosphere was climbing and raising global temperature, but most scientists found his arguments implausible. In the 1950s a few researchers discovered that global warming truly was possible. In the early 1960s, C.D. Keeling measured the level of carbon dioxide in the atmosphere and found that it was rising fast.
- A series of studies during the 1960's to the 1980's began to find evidence of a link between CO2 emissions and global climate change. One team of scientists drilled ice cores in Antartica going back 160,000 yrs. They found that CO2 levels varied from 180 ppm in the cold periods to 280 ppm in the warm periods. But in the air above the ice, the level of the gas had reached 350 ppm.
- The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 to investigate the risk of climate change caused by human activity.
- In 1990, they reported that the planet is warming and is likely to continue warming. Evidence on the influence of human activity was disputed.



Greenhouse Gases: The Story so Far

- In 1995, a second IPCC report found the climate was changing and that "the balance of evidence suggests a discernible human influence on global climate".
- In 1997, an international conference in Kyoto invited nations to sign a treaty that set targets to reduce greenhouse gas emissions.
- In 2001, a third IPCC report stated baldly that global warming, unprecedented since end of last ice age, is "very likely," with possible severe surprises.....and "there is new and stronger evidence that most of the warming observed over the past 50 years is attributable to human activities."
- In 2005, the Kyoto treaty came into effect, signed by major industrial nations (excluding USA & Australia). Work to retard emissions accelerated in Japan, Western Europe, US regional governments and corporations. The EU launched a carbon emissions trading scheme (EU ETS).
- In 2007, the fourth IPCC report warned that serious effects of warming had become evident. It concluded that the cost of reducing emissions would be far less than the damage they will cause.
- In 2008, Australian Govt white paper states that "11 of the past 12 years rank among the 12 warmest years since records began ....as one of the hottest and driest continents on earth, Australia's economy and environment will be one of the hardest hit" by global warming.



What is Australia's commitment to reduce greenhouse gas?

- The CPRS white paper states that:

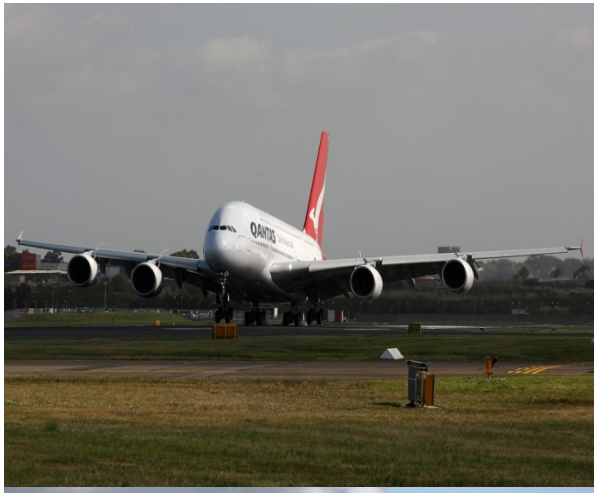
  "Australia will reduce its greenhouse gas emissions by between 5 and 15 per cent below 2000 levels by 2020. This sets Australia on path to achieve its long-term goal of a 60 per cent reduction from 2000 levels by 2050. **The 5 per cent reduction is Australia's minimum unconditional commitment.**"

- The white paper goes on to say:

  "Australia is willing to do more in the context of a comprehensive global agreement. This agreement would include commitments by all developed countries to take on comparable emission reduction targets and by all major economies (including key developing countries) to substantially restrain emissions. **In this event, Australia will reduce its emissions by up to 15 per cent below 2000 levels by 2020.**"

What does this mean?

- This almost certainly means a reduction of 5% given that "a comprehensive global agreement" is unlikely.

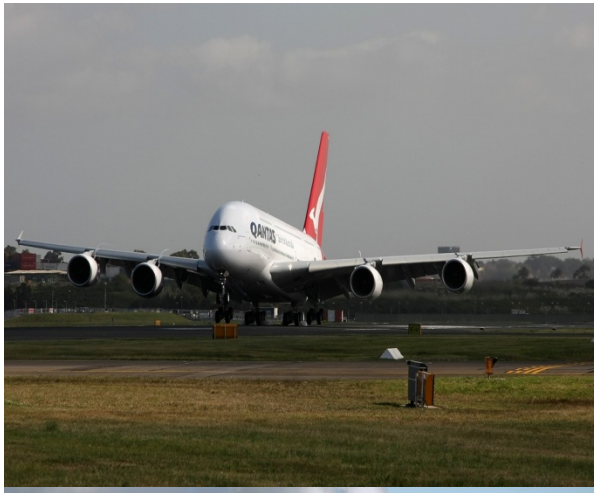


What are emissions trading and the CPRS?

- The Carbon Pollution Reduction Scheme (CPRS) is a **"cap and trade"** emissions trading mechanism.
- It involves setting a limit (**cap**) on the aggregate emissions from all types and sources of emissions covered by the scheme. The lower the cap, the greater the reduction in emissions.
- The scheme works by allocating permits to entities that emit > 25,000 CO2 equivalent (CO2-e) per annum. At the end of each year, these entities will be obliged to surrender a permit for each tonne of CO2-e that emitted. Entities that do not have sufficient permits to cover all of their CO2-e emissions will need to purchase additional permits from those with a surplus (**trade**) .
- The number of tradeable permits will be equal to the scheme cap ie if the cap were to limit emissions to 100 million tonnes of CO2-e equivalent in a year, 100 million permits would be issued for that year.

What does this mean?

- Setting a limit on the right to generate carbon will make emissions-intensive goods and services more expensive relative to those that are less emissions intensive.
- This provides a powerful incentive for consumers and businesses to purchase goods and services that emit less carbon.

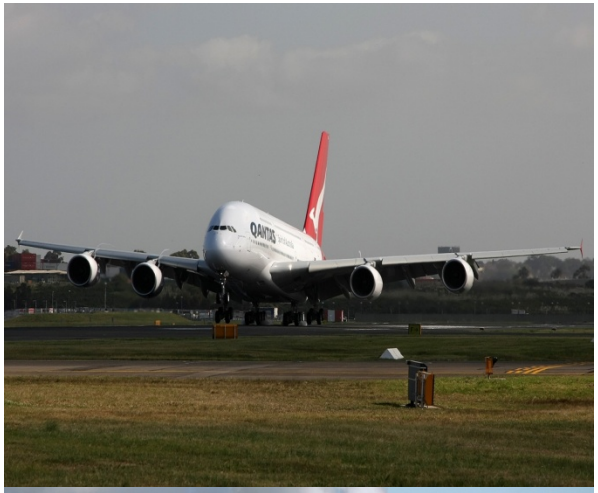


What will permits cost?

- The price for permits will depend on a number of factors, including the national emission trajectory, scheme coverage and international linking, and the costs of emission reduction opportunities.
- The Treasury modelling suggests an initial carbon price of A$23/t CO2-e (nominal terms) will be required to achieve reductions in Australian emissions of 5% below 2000 levels by 2020 target range.
- The starting price could be 40 per cent higher (A$32.50/t CO2-e) to achieve reductions of 15% below 2000 levels by 2020.
- The Scheme incorporates a number of features designed to reduce price volatility, these include:
  - Unlimited access to international abatement;
  - A cap on the price of permits of $40 per tonne in 2010, rising at 5 per cent real per annum; and
  - Unlimited banking and limited borrowing of permits.

What does this mean?

- Treasury modelling calculates that a carbon cost of A$ 25/MT is approx equivalent to a cost of living increase of 1.1% in 2010/11 for the average Australian household.



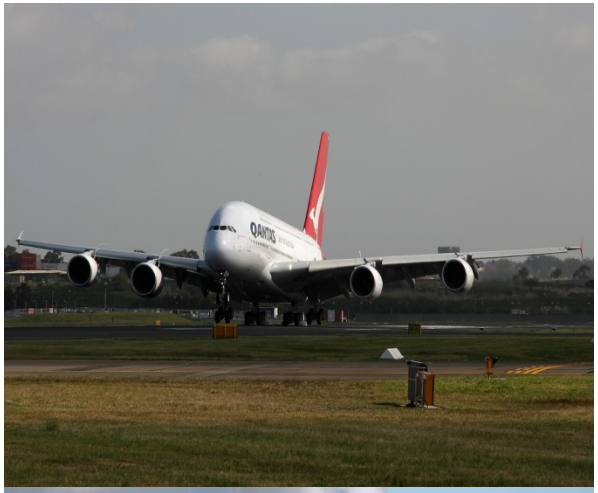
What are other countries doing?

Emissions trading in the rest of the world

- *Europe* – The EU ETS was introduced in 2005 with 27 members.
- *North America* - 23 US states and four Canadian provinces currently participate in regional trading schemes.
  - President-elect Obama has confirmed that he will introduce a cap-and-trade scheme.
  - The Canadian Government is working to introduce a national scheme
- *Japan* - A voluntary scheme has been trialled and a full-scale domestic scheme is under discussion.
- *New Zealand* – currently reviewing its scheme design

Action by developing countries

- *South Africa and Mexico* - Are considering economy-wide emission targets.
- *China* - Has introduced a binding target of reducing the energy intensity of its economy by 20 per cent on 2005 levels by 2010.
- *Brazil* - Intends to reduce rate of deforestation by 72 per cent by 2017. Has introduced subsidies and incentives for the use of renewable technologies.
- *India* – Has a national target to increase national target to increase the area under forest and tree cover from 23 per cent to 33 per cent



When will the Scheme take effect?

White Paper announcements
- 2020 National Target Range
- Indicative National Emissions Trajectory 2010-11 to 2012-13

(Dec 2008)

Copenhagen Conference
- Inform scheme cap and national emissions targets

(Dec 2009)

Scheme Commencement

(Jul 2010)

Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar
2008	2009				2010				2011				2012

National Greenhouse & Energy Reporting System (2008-09)
- Inform scheme cap and national emissions targets.

(Oct 2009)

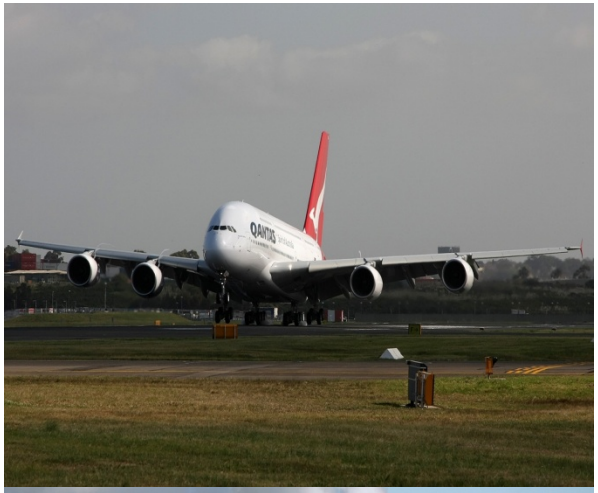
Scheme announcements
- Scheme caps for 2010-11 to 2014-15
- Indicative National Emissions Trajectory 2013-14 to 2014-15

(Early 2010)

Extension announcements
- Scheme caps extended to 2015-16
- Indicative National Emissions Trajectory extended to 2015-16

Impact on your Business

- There is likely to be a "trickle effect" suggesting that the majority of businesses will not be materially impacted until the scheme has been in operation for 6-12 months ie first half 2011.

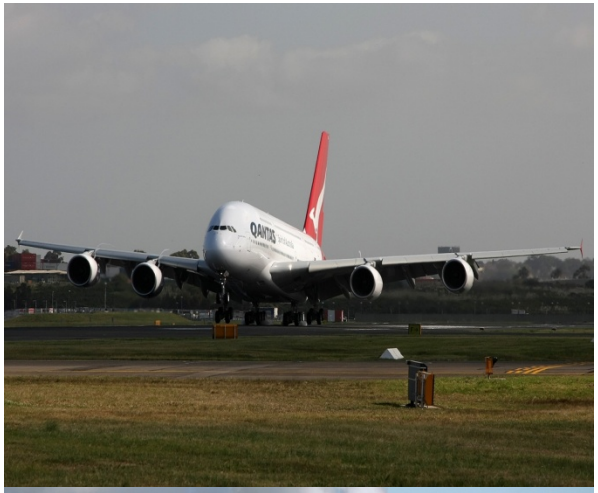


Who is Directly Impacted by the Scheme?

Scheme Coverage	Description
Greenhouse gases targeted by the scheme	▪ Carbon dioxide (CO2), ▪ Methane (CH4) ▪ Nitrous oxide (N2O) ▪ Sulphur hexafluoride (SF6) ▪ Hydrofluorocarbons (HFCs) ▪ Perfluorocarbons (PFCs).
Emissions sources included in the scheme	▪ Stationary energy (ie electricity) ▪ Transport ▪ Industrial processes including waste disposal ▪ Fugitive emissions from oil and gas production. ▪ A final decision on coverage of agriculture emissions will be made in 2013, with the earliest inclusion date of 2015.
Businesses required to reduce emissions	▪ All entities that emit > 25,000 CO2 (around 1,000 entities) will be given emission caps. ▪ Total coverage to be around 75 per cent of Australia's emissions.

Impact on your Business

- All businesses big or small will experience an increase in costs (electricity, gas, transport, office supplier, waste disposal etc).
- Around 1,000 entities will have regulatory obligations, the remainder of Australia's 7.6 million businesses will not face new regulatory obligations.



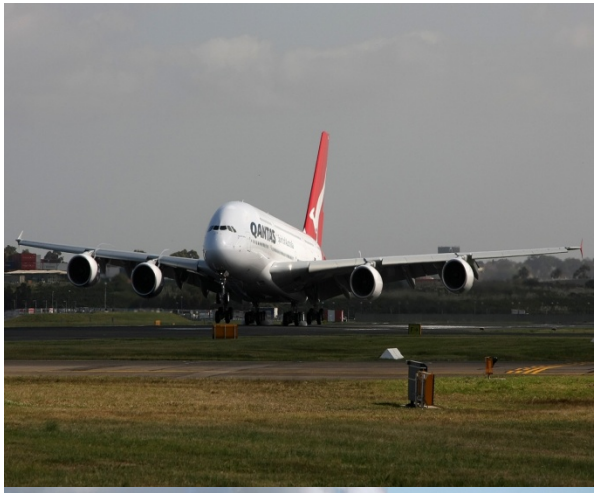
Emissions Intensive / Trade Exposed (EITE)

- THE CPRS includes an EITE assistance program to provide transitional assistance to industries affected by Australia's adoption of carbon constraint ahead of other countries.
- Assistance, in the form of free permits, will be provided to new and existing firms engaged in EITE activities. Assistance will be targeted to the most emissions intensive trade-exposed activities and is scaled to include moderately intensive industries. Examples of activities likely to be eligible for assistance are summarised below.

Maximum Assistance	Moderate Assistance
▪ Aluminium smelting ▪ Cement clinker production ▪ Lime production ▪ Silicon production ▪ Integrated iron and steel manufacturing.	▪ Alumina refining ▪ Petroleum refining ▪ LNG production

Impact on your Business

- Transitional measures will reduce the impact of the Scheme on some input costs.
- Impact is dependent upon your industry
- Some customers may require a carbon statement => a carbon audit may provide your business with a competitive advantage in some industries.



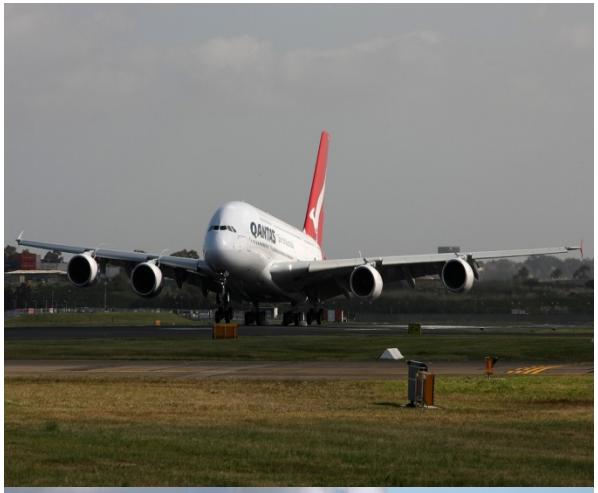
EITE Assistance for Electricity Industry

- The Government will provide assistance for the emissions costs associated with electricity use by an EITE activity and very large electricity users . It has set the electricity allocation factor on a national basis at one permit per megawatt-hour.
- Entities eligible for assistance will receive one permit per MWH. This is designed to insulate EITE activities and large users against rising electricity costs.

Region	Avg. 2010-15 (t CO_2-e / MWH)	Avg. 2015-20 (t CO_2-e / MWH)	Avg. 2010-20 (t CO_2-e / MWH)
NSW	0.73	0.94	0.84
QLD	0.62	0.91	0.77
SA	0.76	0.61	0.68
TAS	0.34	0.58	0.35
VIC	0.81	0.94	0.87
WA	0.62	0.66	0.64

Impact on your Business

- The majority of SME's will not be eligible for any direct assistance from this program, but it should reduce input costs if your supplier is EITE.



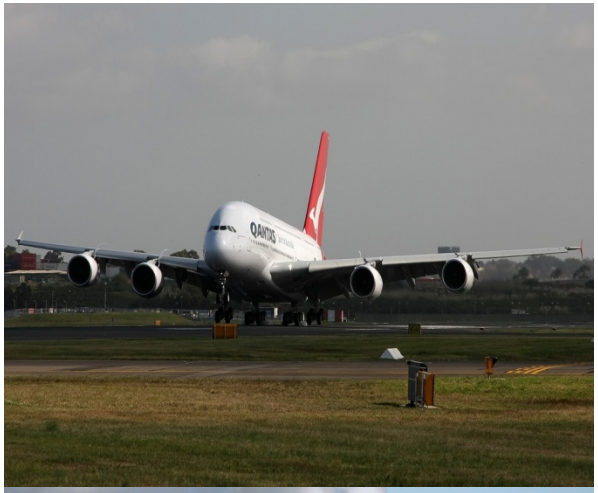
Climate Change Assistance Fund (CCAF)

- The CCAF is designed to provide targeted assistance to:
  - Businesses that are not eligible for other forms of assistance
  - Small to medium sized enterprises and community sector organisations
  - Specific industries, workers, regions and communities that will experience a concentrated impact flowing from the implementation of the CPRS
- The fund is divided into four streams as follows:

Stream 1: Information	Stream 2: Investment	Stream 3: Structural adjustment	Stream 4: Coal adjustment
Funds set aside to inform community sector organisations, small and medium sized enterprises, and larger industrial businesses about: ▪ The operation of the Scheme. ▪Ways to minimise any financial impacts. ▪Funding = A$ 130m over 5 years	▪ Three programs to provide incentives to invest in low emission technologies, processes and products: 1.SME capital allowance 2.Community Organisations capital allowance 3.Innovation in climate change ▪ Funding = A$ 1.4 bn over 5 years	▪ The Government will closely monitor the impact of the Scheme on workers, communities and regions. ▪ Assistance to be provided where a clear, identifiable and significant impact arises, or is highly likely to arise, as a direct result of the Scheme. ▪ Funding = A$ 200m from 2010/11	▪ Designed to assist coal mines with high fugitive emissions. ▪ It has 2 components: 1. Abatement 2. Transitional assistance ▪ Funding = A$ 750m over 5 years

Impact on your Business

- Stream 2 provides opportunities specifically targeted at SME's



CCAF Stream 2 - Investment

Small business capital allowance

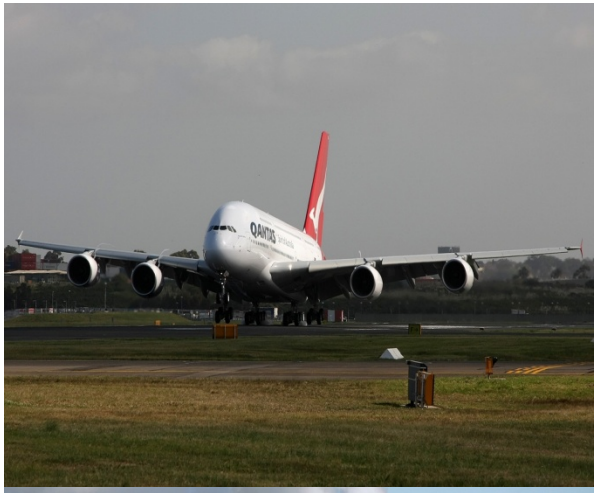
- This sub-program will provide small business with assistance to invest in energy efficiency equipment such as energy efficient hot water systems; improved insulation; efficient lighting; motors and drives; combined heat and power equipment; heating, ventilation and air conditioning; and refrigeration equipment.
- Eligible applicants will be partially reimbursed for the capital and installation costs of energy efficient equipment.

Community organisation capital allowance

- Like the Small Business Capital Allowance, this program will provide community organisations with assistance to invest in energy efficiency equipment that meets established criteria.

Innovation in climate change

- This program will fund projects that contribute to the cost of innovative low emission technologies, production methods, supply-chain improvements or products and energy savings projects with long pay back periods.
- Priority will be given to businesses that are not eligible for other forms of assistance under the scheme.

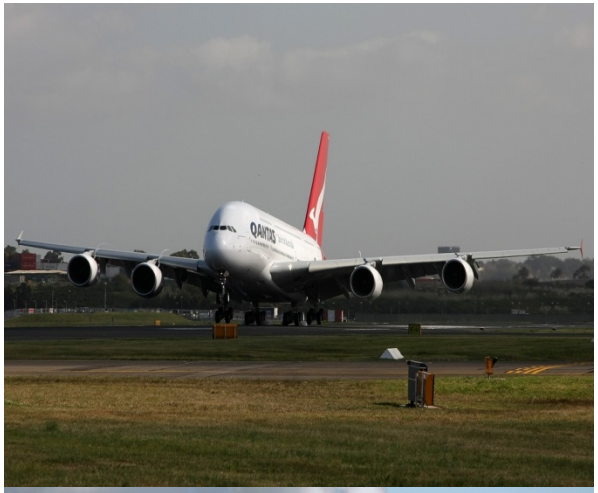


Fuel Tax Adjustments

- Motorists will be protected from the impacts of the Scheme on fuel prices for the first three years of the scheme through 'cent-for-cent' fuel tax reductions.
- Targeted assistance will also be provided to eligible businesses for one or three years to give them time to adjust to the scheme.
- The Government will:
  - Cut fuel tax 'cent-for-cent' when the Scheme commences on 1 July 2010
  - Make further fuel tax cuts every six months, if required, for three years
  - Introduce a 'CPRS fuel credit' payment.
- CPRS Fuel Credit Payment:
  - Agriculture, fishing, and heavy on-road transport do not pay effective fuel tax.
  - They will be compensated through the CPRS fuel credit payment.
  - It will be available to agriculture and fishing businesses for three years and heavy on-road transport businesses for one year. The amount of the CPRS fuel credit will be equal to the fuel tax cut.

Impact on your Business

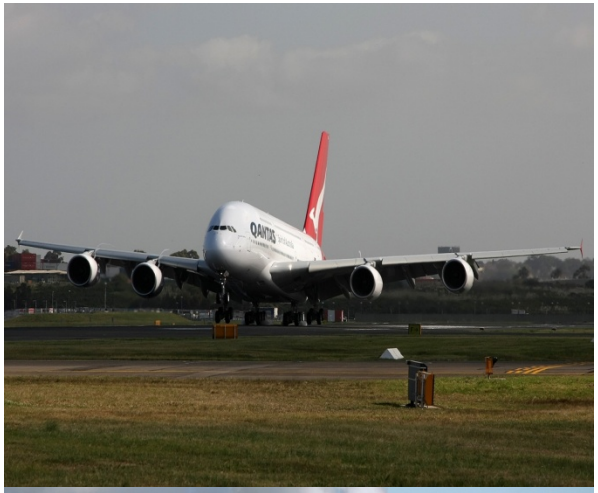
- The fuel tax adjustment will have an direct impact on transport costs and an indirect impact on the cost of goods.
- Those involved in agriculture and fishing (3 years) and heavy on-road transport businesses (1 year) will be compensated through a separate scheme.



Developing a strategy to manage carbon risk

- There are three principal reasons to manage carbon emissions:
  - Reduce costs.
  - Develop marketing opportunities.
  - Become a good corporate citizen.
- The priority that you place on these reasons will dictate the most appropriate approach for your company, but a typical approach includes the following steps:

Steps	Measure Carbon Footprint	Reduce Carbon Footprint	Create "Green Brand"
Focus Areas	Vehicle Travel	Eliminate Unnecessary Travel	Plant Trees
	Air Travel	Introduce Energy Efficiency Measures	"Green Electricity"
	Electricity / Gas Usage	Recycle and Reuse Office Waste	"Green Travel"
	Office Waste	Review Production Process	"Green Lease"
	Raw materials / Product inputs	Review Production inputs	
Outputs	Carbon Footprint Itemising Annual Tonnes of Carbon Consumed	Carbon Footprint Minimised	Sustainable Plan to Manage Carbon Footprint



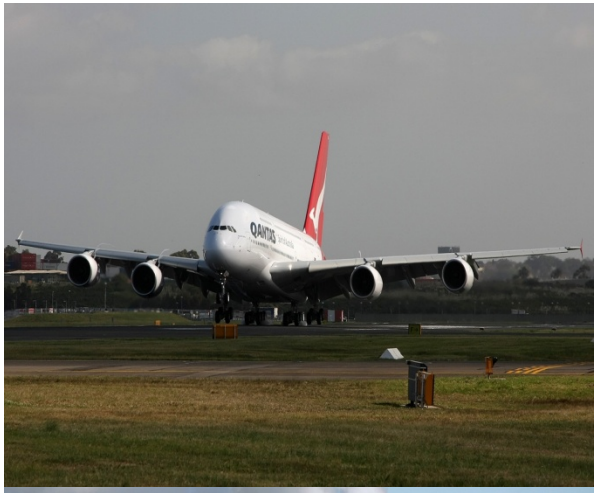
Measuring your Carbon Footprint

Define your carbon footprint

- *Business processes*
  - Every business activity has a carbon footprint – this includes travel to and from work, travel to see customers, paper used in the printer, as well as the more obvious manufacturing activities.
- *Products and their transportation*
  - As a manufacturer or retailer all products that you buy will have a carbon footprint. The cost (if any) of that footprint is dependent upon:
    1. Does the source country have a carbon trading scheme?
    2. If sourced in Australia, does the manufacture qualify for assistance?
    3. How is the product transported?

Measure your exposure

- Profiling your exposure involves:
  - Itemising all of the areas of your business that are exposed to carbon emissions (eg electricity usage, air travel, road travel etc).
  - Sub-dividing those areas into emission sources (eg electricity may be sub-divided by State or Territory).
  - Measuring your utilisation of each emission source (eg MWH's of electricity utilised last year etc).



Measuring your carbon footprint

Carbon Footprint Calculator

Details	
Name	AN Other
Job Title	Managing Director
Company Name	ABC Pty Ltd
Address	
Phone No.	08-9876 - 5432
Fax no	08-9876 - 5431
email Address	another@abc.com.au

Result
Overall Tonnes CO2
277.02

Road Travel Emissions									
Type	Car	Truck							Total
Km/yr	100,000	100,000							200,000
Tonnes CO2	25.50	28.70							54.20

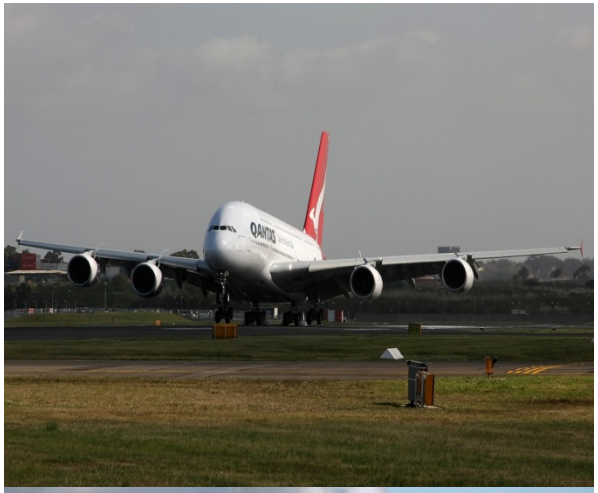
Air Travel Emissions									
N/A									Total
Km/yr	100,000								100,000
Tonnes CO2	35.00								35.00

Electricity Emissions									
Location	WA	ACT	NSW	NT	Queensland	SA	Tasmania	Victoria	Total
MWHr/yr	100	100	100	100	100	100	100	100	800
Tonnes CO2	0.10	0.11	0.11	0.0	0.10	0.10	0.01	0.13	0.74

Natural Gas Emissions									
Location	WA	ACT	NSW	NT	Queensland	SA	Tasmania	Victoria	Marks to date
MJ'yr	100	100	100	100	100	100	100	100	500
Tonnes CO2	5.89	6.61	6.61	5.71	5.73	7.07	5.73	5.73	30.6

LPG Emissions									
N/A									Total
MJ'yr	100								100
Tonnes CO2	6.53								6.53

Office Waste									
N/A									Total
No of employees	100								100
Tonnes CO2	150.00								150.00



Reducing your carbon footprint

Eliminate Unnecessary Travel

- Strategies to reduce travel may include:
  - Conducting more business across the internet.
  - Video conferences instead of client visits.
  - Review business processes (eg frequency of overseas sales trips)

Introduce Energy Efficiency Measures

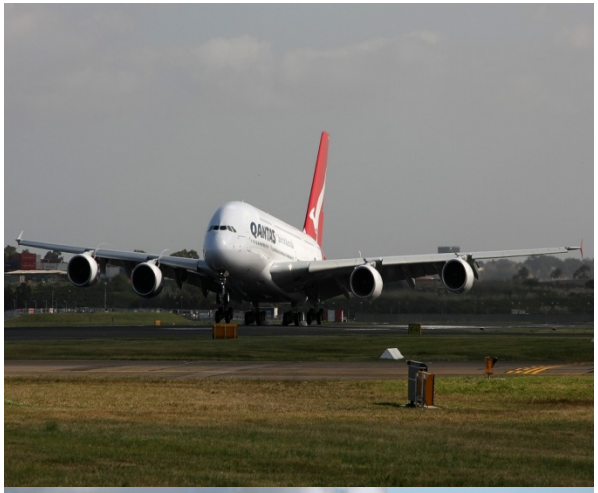
- Standard energy efficiency measures (timer switches on lights, managing air conditioning units etc) produce significant cost reductions.

Recycle and Reuse Office Waste

- Most of the things we consume in running our office produce carbon. We can reduce our footprint by:
  - Utilising recycled paper and ink cartridges (for a small amount more)
  - Reducing excessive amounts of brochures, avoiding the temptation to print every document and storing records electronically.
  - Actively reducing our office waste generally increases office efficiency.

Review Production Process, Suppliers & Inputs

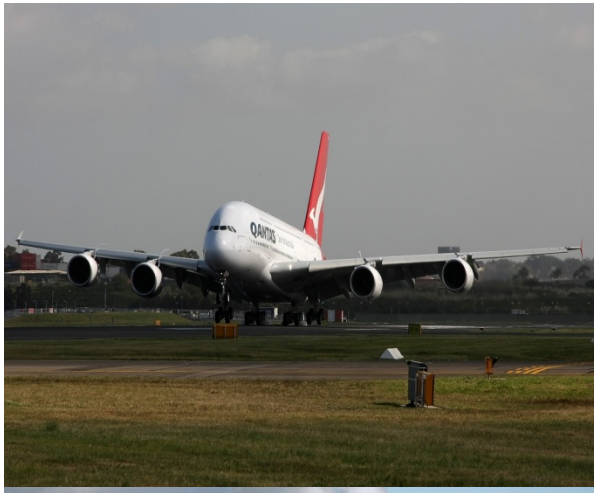
- Review production processes
- Review suppliers
- Review infrastructure (eg location of warehouses).



Why create a "green brand"?

- Reasons for creating a "green brand" may include:
  - Develop marketing opportunities where customers are known to pay a premium for green brands
    - Certain retail customers eg parents with young families, generation "Y".
    - Large commercial customers that are buyers of CPRS permits.
    - Any commercial customers who are marketing themselves as "green".
  - Being a good corporate citizen
    - To enhance your position in the community
    - To attract employees
    - To satisfy your personal goals

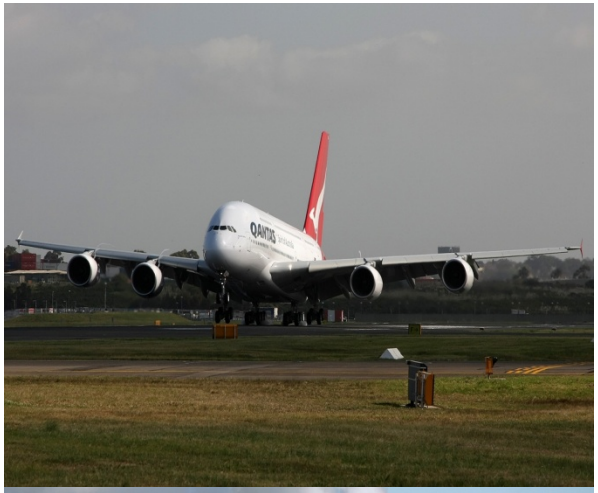
- Beware of "greenwashing"
  - ACCC is taking strong action against any companies found guilty of "greenwashing" ie falsely claiming to be carbon neutral.
  - Make sure you are audited by an accredited firm prior to launching a green marketing campaign.



How do you create a "green brand"?

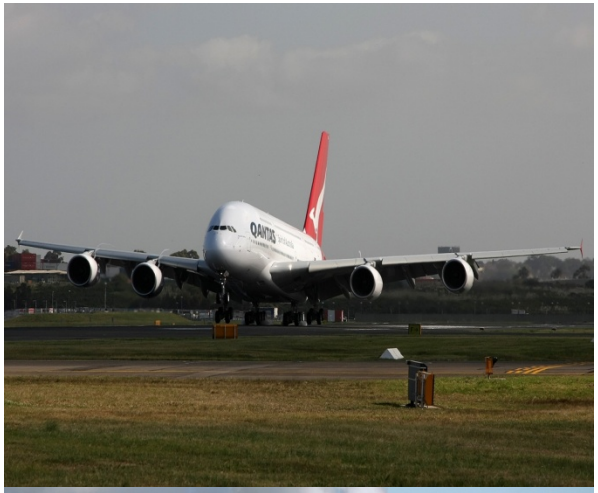
- Strategies for creating a "green brand" may include:

Strategy	Comments
Plant Trees	▪ Several charities and companies offer a tree planting service.
Green Electricity	▪ Most electricity providers offer 'green' electricity ie electricity that has been produced using renewable resources like wind and solar. ▪ Green electricity is a little more expensive but will cut your carbon footprint.
Green Travel	▪ Green travel initiatives may include: providing facilities for employees to cycle to work; locating new facilities near public transport etc.
Green Lease	▪ Many property developers / landlords offer green leases that include : – Energy management guarantee for tenants (caps on bills and greenhouse gas emissions) – Monitoring and reporting of tenancy energy use and greenhouse gas emissions – Monitoring and reporting of base building energy use and greenhouse gas emissions – Regular maintenance and recalibration of base building services – Australian Building Greenhouse Rating conducted annually and rating disclosed – Accredited green electricity supply contracts available to tenants
Carbon Audit	▪ ACCC is taking action against companies that erroneously claim to be green. ▪ Any green strategy must be evidenced by a carbon audit from a reputable firm.
Employee Facilities	▪ Provide smart rider cards for employees, instead of car parking facilities ▪ Provide showering facilities for those who wish to cycle to work ▪ Think about the location of your premises eg availability of public transport.



Case Study 1: Small promotional business

Rationale behind the "green brand"	▪ Initially it was seen as the "right thing to do" ▪ During the process of becoming green they became aware of commercial benefits in greater efficiency and cost savings.
Carbon Footprint	▪ Travelling to work and client visits – 57 150km (producing 14.4 tonnes of carbon) ▪ Air travel – 28 000 km (9.52 tonnes) ▪ Office electricity energy use – 5610 kwh (6.51 tonnes) ▪ Office waste (0.92 tonnes) ▪ **Total carbon from these activities 31.35 tonnes**
Carbon Reduction Strategies	▪ Reduce travel – Conduct more business over the web – Fewer trips to Asian suppliers (every second year instead of annually) – Re-negotiate warehousing terms to reduce stock checks ▪ Reduce office electricity – Computers, printers, monitors and lights are switched off every night. – Air conditioning only goes on after 10 am and is switched off ½ an hour before leaving the office. ▪ Reduce office electricity – Use recycled paper and ink cartridges (for a small amount more) – Say no to excessive amounts of brochures from suppliers – Store records electronically and print fewer documents.
Creating a Green Brand	▪ Chose a local Australian based organisation who offer a tree planting service to offset carbon emissions.
Outcomes	▪ Offsetting 31 Tonnes of CO2 cost approx $400 or than 0.5% of operating costs. Green Energy costs a little more and recycled paper costs marginally more. ▪ They saved money by travelling less, using the web more, implementing more efficient businesses practices, and using less electricity. ▪ They claim that becoming a Carbon Neutral business added $1000's to the bottom line.



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