Colonial First State
Global Asset Management

Australian commercial property sector well positioned for carbon regulation

Property viewpoint

June 2011

Overview

The Australian commercial property sector is indirectly responsible for approximately 10% of Australia's carbon greenhouse gas emissions, mainly through the use of electricity. As Australia moves to put a price on carbon to promote the adoption of less carbon intensive technologies across the economy, there will be small flow on effects to landlords and tenants. With this in mind, CFSGAM Property Research has undertaken initial analysis to determine the impact of a Carbon Pricing Mechanism (CPM) and higher electricity prices on a range of office and retail properties.

- The paper finds the commercial property market is unlikely to be materially impacted by the introduction of a CPM.
- The exact impact is difficult to quantify as details of the CPM and any assistance programs have not yet been finalised.
- Initial analysis suggests that over the short to medium term, the impact on development and operating costs as well as property and portfolio valuations should be minimal.
- Retail property is likely to be less affected than office property, approximately 20% to 60% less, depending on the type of property, leasing structure and energy efficiency opportunities.
- A CPM may be a positive development for the industry, helping to future proof commercial property against further increases in electricity costs. This could be achieved by accelerating the adoption of energy efficient technologies and through complimentary measures to assist the sector in the transition to a reduced carbon economy.

Contents

Background

Carbon regulation

Regulation to reduce greenhouse gas emissions has been a controversial topic in Australia for many years. Indeed, the first international treaty to tackle the challenge was established as early as 1994[1]. Since then, the topic has generated much debate as well as proposals for a variety of regulatory models. At the time of writing, the timing and scope of any new carbon regulation in Australia remains in question, however, it is likely some form of regulation will be introduced.

Any new regulation will have an impact on Australian businesses. The purpose of this paper is to review the potential impact on the commercial property industry as well as highlighting the steps the industry has taken to ensure it is well prepared. For a number of years, the industry has been introducing systems to monitor and report on carbon emissions and resource consumption as well as introducing new technology to improve energy efficiency. These systems and technology have enabled industry participants to quantify the impact of potential carbon pricing regulations, as well as measure the relative benefit of alternate technologies.

The Federal Government has proposed a Carbon Price Mechanism (CPM) to commence 1 July 2012. This is one of the mechanisms the Federal Government is proposing to meet its emissions reduction targets[2]. While questions remain, we have based our analysis on this proposal and the information currently available. This includes details from the Garnaut Climate Change Review whose final report was presented to the Government on 31 May 2011.

The CPM creates an incentive for producers and consumers to significantly invest in less carbon intensive technology. It does this by making 'green' initiatives relatively more affordable, that is; carbon intensive resources / products will become more expensive, helping to bridge the price gap with more energy efficient products.

Professor Garnaut has proposed the CPM commence with a three-year fixed price phase followed by a carbon trading scheme with a floating price. Final details of the proposal have not been released, although Garnaut has recommended an initial carbon price of between $20 and $30 a tonne of carbon dioxide – equivalent (CO_2-e), rising annually by 4% plus inflation.

The Federal Government has announced the carbon price will be directly paid by less than 1,000 companies that are Australia's largest polluters in the economy. Direct charging of non-residential property owners or users will not occur given they are not the primary emitter of carbon. Property owners will experience the scheme by any pass through in the increased cost of electricity or carbon intensive goods and services. A 2009 proposal to directly charge non-residential property users through a cap and trade style mechanism, The Safe Climate (Energy Efficient Non-Residential Buildings Scheme) Bill 2009, failed to pass the Senate in 2010.

Further to the CPM, the Government has announced complementary measures to support the transition to a reduced carbon economy. Measures for the property sector include tax breaks for Green Buildings (recently deferred in the 2011-12 Federal Budget), funds to support investment in energy efficiency and credit schemes at the State level. These are covered in detail later.

The last major new cost to business introduced in Australia was the 10% goods and services tax (GST) on 1 July 2000. Some commentators have suggested the impact of a carbon price will not be as great as when the GST was introduced. For the commercial property sector, the introduction of the GST was overshadowed by other market forces, such as the tech boom and bust, and the Sydney Olympic Games. In general, Australia adapted to the introduction of the GST relatively quickly. Our research suggests the impact on the property sector of the CPM, like the GST, should be relatively minor, leaving the sector well positioned from an investor perspective.

[1] The United Nations Framework Convention on Climate Change entered into force on 21 March 1994.

[2] http://www.climatechange.gov.au/en/government/reduce/national-targets.aspx

International carbon pricing

The largest carbon pricing model in the world is currently the European Union Emissions Trading Scheme (EU ETS) - launched in 2005. The EU ETS uses a cap and trade mechanism and covers emission intensive facilities across the EU; including electricity generation plants and other high emitting industrial installations. The EU ETS attempts to minimise carbon emissions by issuing a fixed number of certificates allowing for a certain level of carbon emissions for each business. Certificates can then be sold or purchased depending on whether a business expects to exceed its allowable emissions or not. The incentive is, if emissions are reduced, costs can be reduced or additional revenue generated by selling excess certificates. The cost of purchasing certificates may be passed to the end user, which may encourage them to use energy more efficiently.

An alternate carbon pricing model is the carbon tax used in the Canadian province of British Columbia. This carbon tax is imposed on the sale of fossil fuels, such as oil and gas wells or coal mines, at their point of origin. The tax is generally passed down and ultimately paid by the end user unless efficiencies can be made by intermediate industries.

The main difference between the models is that with the EU ETS, there is a greater direct incentive on certificate traders to reduce emissions. In the Canadian carbon tax, there is more incentive for end users, who ultimately bear the cost, to modify their consumption. This behaviour may then indirectly influence primary emitters.

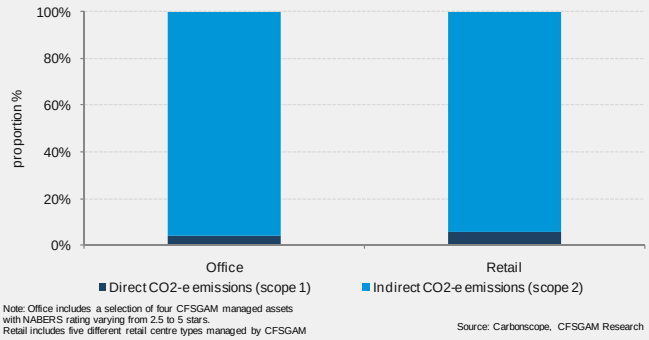
Examples of other countries to implement some form of carbon pricing include:

- India - introduced a carbon tax of 50 Rupees per metric tonne of coal produced and imported into India in 2010
- South Africa - introduced a tax on new motor vehicles for every gram of CO2 per kilometre the vehicle emits over 120grams/kilometre
- New Zealand – introduced an Emissions Trading Scheme. To date, the introduction of an ETS has had little measurable effect on New Zealand's rate of inflation. A reason for this may be a large proportion of New Zealand's emissions are generated from agriculture which has been excluded from the ETS. New Zealand also generates a large part of its electricity from less carbon intensive hydro sources.

Carbon and commercial property

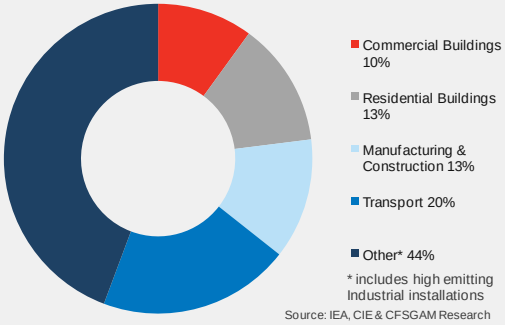
The commercial property sector is not a meaningful direct producer of carbon emissions. However, as the sector is a consumer of energy, it is an indirect source of emissions. Figure 1 shows direct (known as scope 1) account for about 5% and indirect (known as scope 2) about 95% of emissions for a selection of CFSGAM managed retail and office assets. In the case of commercial properties, scope 1 emissions can relate to combustion of gas in a building's hot water boiler or cogeneration system and the leakage of synthetic gases from refrigeration plant[3], while scope 2 emissions relates to indirect emissions from electricity usage.

Figure 1: Direct versus indirect carbon emissions in commercial properties – annual emissions as at Feb-11



In 2005, commercial buildings contributed approximately 10% (or 56 Mt CO_2-e) of Australia's carbon emissions, mainly as the end user of energy (Figure 2). Taking into account improvements in building design, the commercial building sector's emissions are expected to grow on average 2.1% p.a. in the next 45 years, as a result of population growth, increased economic activity and expected energy use trends[4].

Figure 2: Estimated Australian carbon emissions by end use 2005



Energy efficiency and sustainability has been a theme for commercial office buildings for a number of years. The most recent initiative introduced by the Federal Government is the Commercial Building Disclosure (CBD) program. From 1 November 2010, owners of commercial office buildings leasing or selling 2,000 square metres or more are required to disclose the energy efficiency rating of the building using the National Australian Built Environment Rating System (NABERS). NABERS measures an existing building's environmental performance during operation in categories such as energy, water, and waste. A star rating system is used to distinguish between performance with one star representing a high greenhouse impact and five stars representing a low impact.

From 1 November 2011, the requirements for the CBD program will step up and a full Building Energy Efficiency Certificate (BEEC) will need to be disclosed and be publicly accessible on the Building Energy Efficiency Register. A BEEC includes a NABERS rating, an assessment of tenancy lighting in the area of the building

[3] Green star – public building pilot, Green Building Council Australia, 2010

[4] *Capitalising on the building sector's potential to lessen the costs of a broad based GHG emissions cut*, Centre for International Economics, 2007.

and general energy efficiency guidance. The intention is to progressively expand the coverage to additional building types.

The scheme will place the onus on building owners to accurately report and disclose energy efficiency measures to create a transparent marketplace. This creates a strong market-based incentive for owners to improve their properties with cost-effective energy efficient upgrades that may increase their return on investment. Case studies of improvements to the Commonwealth Office Property Fund portfolio are available on page 10.

Although the intention of the CBD program was to create transparency for occupiers, a side effect of this program, together with complimentary measures such as: the phase out of incandescent light bulbs; increased stringency in energy efficiency requirements for commercial buildings; green tax breaks; and the Green Building Fund, is to encourage the more rapid adoption of energy efficient technologies and reduce carbon emissions.

Potential impact of carbon pricing on commercial property

While the details of the CPM are yet to be determined, previously proposed schemes and the experience globally suggests some of the risks for the commercial property industry could potentially include:

- Increasing capital expenditure and development costs;
- Increasing building outgoings or running costs;
- Reducing the supply of new office and retail buildings;
- Increasing rental costs for tenants or reducing rental income for landlords with associated flow on to property values and investment returns.

On the opportunity side, with a CPM introduced we could see:

- Increased demand for green buildings;
- A relative increase in the value of green buildings;
- Greater investment in energy efficiency technologies that reduce long term operating costs;
- Greener buildings may provide a better working environment for tenants with the potential for productivity increases.

This paper has focused on estimating the possible impacts on commercial property development costs, outgoings, property and portfolio valuations from potential increases in electricity costs due to the CPM. The paper does not include or address changes in energy production or consumption that might result from a CPM.

Electricity market impacts

Australia has historically had relatively volatile spot and contract electricity prices traded in the National Electricity Market (NEM). However, broadly speaking, Australia has seen a decline in real prices for electricity over the last 50 years. The exception for this real decline in prices occurred in the early to mid eighties during a period of high inflation and large capital expenditure in the electricity sector. The transition to a low carbon economy will once again require considerable capital expenditure as production moves from old coal fired generation assets to new gas fired and renewal generation assets.

The imposition of a price on carbon on the NEM via a CPM is only one of the pricing pressures on electricity markets. Electricity prices will also be significantly impacted by compliance with the existing Mandatory Renewable Energy Target (20% of electricity produced from renewable generation assets by 2020), compliance with other complimentary (State and Federal) carbon reduction policies, further network spending to cater for market growth and the introduction of new assets into the NEM and increased construction costs of new build generation projects to replace old high carbon assets.

This transition alone (aside from the price on carbon) could lead to a dramatic increase in the cost of electricity. For example electricity generated from wind farms would cost between approximately $100 and $125 per megawatt hour (MWh), compared to existing coal generation assets at approximately $30 to $40 per MWh. Renewables such as wind are also intermittent due to the nature of the resource and need to be backed by other more reliable generation fuels (such as gas) if they are to displace baseload coal generation assets. This again increases the overall cost of the provision of electricity to the market.

The electricity market will also continue to be affected by the same supply and demand factors as has been the case historically. Forecasts include increasing demand as a result of population growth and economic activity, and increasing supply costs as a result of higher prices for commodity inputs as well as capital construction costs. Add to this view the potential for climate change to cause more extreme weather events (both hot and cold) that drive periods of high electricity demand, and overall electricity prices could be expected to increase in real terms even in the absence of a carbon price.

It is possible to envisage a scenario where the component of higher electricity prices in the future attributable to the ‘carbon price’ component is only marginal compared to other market forces acting on the NEM.

AGL also recently highlighted “the impact of a carbon price is likely to be relatively immaterial relative to other price drivers over the next five years.” Previous Treasury modelling for the Carbon Pollution Reduction Scheme (CPRS) estimated wholesale electricity prices would increase 48% between 2010 and 2015 under the 5% and 15% emission reduction target scenarios. This modelling took into account other electricity price drivers not just the direct carbon price.

Electricity cost scenarios

This paper focuses on the direct increase in electricity costs due to a CPM. The analysis of electricity price increases assumes the initial fixed carbon price per tonne is charged for every MWh used within a building. This could be viewed as ‘worst case’ as it assumes 100% pass through of the carbon price and no change in the energy production mix.

Three scenarios were adopted in this initial analysis - $10 per tonne or MWh, $25 MWh and $40 MWh. A $10 per tonne price of CO_2-e has been suggested as a starting price by the Business Council of Australia. $25 represents the midpoint in Garnaut's proposed $20 to $30 per tonne range. $40 per tonne has also been suggested as a European level equivalent price.

Additionally, while the CPM is designed to change energy consumption, the modelling assumes no modification of electricity usage or adoption of more efficient technologies. The property sector, like other sectors, is likely to continue to adopt energy efficient technologies to reduce consumption.

Development activity

Material costs

Building materials such as steel, cement, glass, lime, brick and ceramics are likely to have both direct and indirect carbon liabilities as a result of the CPM. Direct emissions being generated from production processes and indirect through energy purchased.

The initial impact is expected to be relatively small if industry assistance as proposed under the Carbon Pollution Reduction Scheme (CPRS) is legislated. Under that proposal, emissions-intensive trade-exposed (EITE) activities, such as steel and cement production, were likely to receive compensation initially at around 94.5%, reducing over time. The 2011 update to the Garnaut review on "Carbon pricing and reducing Australia's emissions", noted that with industry assistance, the end value of steel would initially only increase by approximately 0.66%.

Tables 1 and 2 show possible cost impacts on a hypothetical Sydney prime office development from a CPM of $25 per tonne under a range of compensation scenarios; the 94.5% Garnaut recommended compensation level; 90%, that it has been suggested the 94.5% level would reduce to over time and a lower 75% level.

Table 1: Potential impact on concrete and steel costs from a CPM

	Concrete	Steel
Price / tonne	$110	$750
CO_2 emissions per tonne of material	0.6 tonne	2 tonne
Fixed CPM $25/t: 94.5% assistance	**$111**	**$753**
% increase	**0.8%**	**0.4%**
Fixed CPM $25/t: 90% assistance	**$112**	$755
% increase	1.4%	0.7%
Fixed CPM $25/t: 75% assistance	**$114**	$763
% increase	3.4%	1.7%
Fixed CPM $25/t: 0% assistance	**$125**	$800
% increase	14%	7%

Source: Steelonthenet.com, Physics Factbook, cement.org, Axom.com, CFSGAM Research

Under the three scenarios, CPM cost increases associated with concrete and steel would increase development costs by between 0.1% and 0.5%.

Table 2: Potential impact on development costs

Sydney office building	Current	Carbon Price $25/t with 94.5% government assistance	Carbon Price $25/t with 90% government assistance	Carbon Price $25/t with 75% government assistance
Total construction costs	$100,000,000	$111,667	$203,030	$507,576
% total construction cost increase		0.1%	0.2%	0.5%
Steel @ 10% of total	$10,000,000	$36,667	$66,667	$166,667
% steel cost increase		0.4%	0.7%	1.7%
Concrete @ 10% of total	$10,000,000	$75,000	$136,364	$340,909
% concrete cost increase		0.8%	1.4%	3.4%

Source: CFSGAM Research

With commodity prices continuing to rise and the economy again near 'full employment', raw material prices and wages are likely to have a bigger impact on construction prices than a carbon price. For example, the average annual increase in Australian non-residential construction costs between December 2003 and December 2008 (pre the GFC) was 7.2%, well above the average Consumer Price Index (CPI) rate for the same period of 2.1% and significantly more than the three scenarios outlined above. In the highly unlikely event of zero compensation, development costs associated with increased steel and concrete costs might add 2% to the example's total costs.

New building supply

Increases in construction costs raise the level of economic rent required for a development, that is, the income required to justify the cost of development. With industry assistance levels as proposed, the increase in economic rent as a result of a CPM is likely to be minimal with little impact on new building supply expected. The predominant factors affecting supply will continue to be vacancy levels, changes in tenant demand, site acquisition costs and the effect of commodity price and employment cost increases on construction costs.

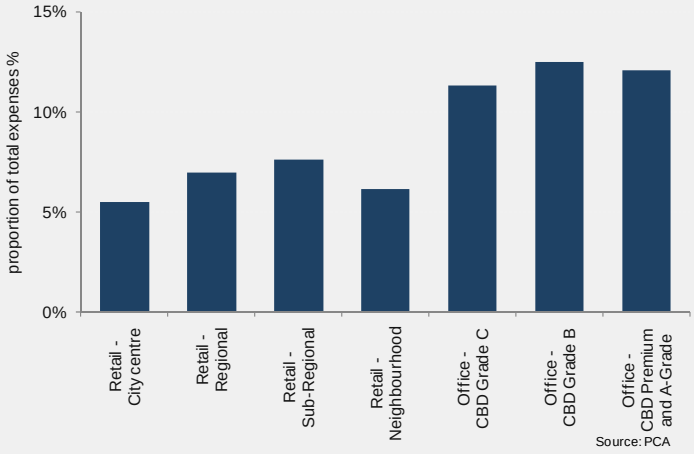
Property running costs and income

Cost increases – outgoings

Outgoings are the operating costs associated with running a building and include electricity charges. The most obvious indirect impact on commercial property will be an increase in energy costs as electricity generators pass on a proportion of the carbon price to end users. Owners should review existing electricity contracts to determine whether the carbon price can be passed immediately down the chain when it is introduced.

Figure 3 shows electricity expenses can comprise nearly 15% of the total operating expenses in commercial property. As electricity costs from office buildings make up a larger share of total operating expenses than in retail buildings, an increase in energy costs is expected to have a greater impact on office buildings.

Figure 3: Average electricity expenses in NSW commercial buildings as a percentage of total operating expenses



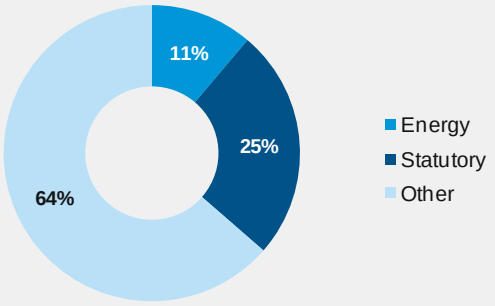
Source: PCA

Outgoings - office

A sample of Sydney CBD office buildings with differing NABERS Energy ratings were chosen for an analysis of outgoings at an asset level.

Figure 4 shows for these particular assets, energy expenses make up a relatively small proportion of overall expenses, around 11%. Statutory outgoings (e.g. council and water rates) make up a larger share of expenses, around 25%. Other costs such as insurance, administration, cleaning, security, repairs and maintenance make up the remainder.

Figure 4: Energy expenses as a proportion of total expenses, sample of Sydney CBD office buildings. As at December 2010 for 2010-11 FY

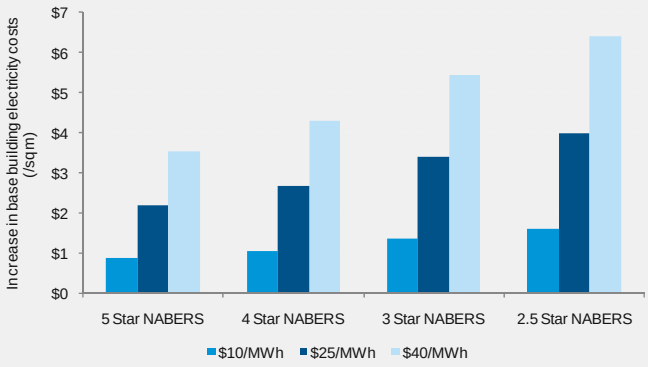


Source: CFSGAM Research

Figure 5 shows the potential initial increase in electricity costs based on the three scenarios of $10, $25 and $40 per MWh.

The analysis indicates the gross cost of electricity would increase initially between $0.88 and $6.40 per square metre. For a prime Sydney office building, gross face rents as at March 2011 averaged $852 per square metre[5]. This suggests gross rents would only need to increase 0.4% to cover an average $3.6 per square metre increase in electricity costs from a CPM. A relatively minor increase given yearly changes in average prime Sydney office rents have fluctuated between 26% increases and 27% decreases over the last decade.

Figure 5: Expected increase in electricity costs for office buildings from CPM.



Source: Carbonscope, CFSGAM Research

In these examples, the higher the NABERS Energy rating (more energy efficient buildings) the lower the estimated increase in outgoings. High energy efficient buildings have lower carbon emission intensity per square metre and so a carbon price will have less of an impact on outgoings.

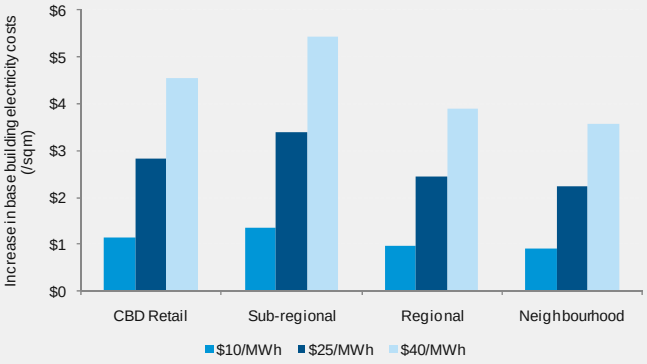
However, the total impact for landlords of increases in outgoings due to the CPM depends not only on the energy efficiency of the building but more importantly, lease structures. Landlords of buildings where a higher proportion of tenants have gross leases (where the majority of outgoings are non-recoverable) will be more adversely affected by carbon pricing than those with net leases (where the majority of outgoings are recoverable and the carbon pricing is passed onto the tenant). See also the section “Rental impact for landlords and tenants”.

Outgoings - retail

Outgoings for a sample of retail centre types including: CBD retail; regional; sub-regional and neighbourhood centres were analysed to examine possible impacts of the CPM.

Figure 6 shows the potential initial increase in electricity costs based on the three carbon pricing scenarios of $10, $25 and $40 per MWh. The analysis shows the gross cost of electricity per square metre would increase between $0.89 and $5.40 per square metre. This is equivalent to an average increase in electricity costs of 21%. However, as electricity costs only account for about 5% to 10% of total outgoings for a shopping centre, the overall impact will be limited.

Figure 6: Expected increase in electricity costs for retail buildings from CPM



Source: Carbonscope, CFSGAM Research

[5] Jones Lang LaSalle

In this case, the neighbourhood centre is estimated to experience lower increases in outgoings from carbon pricing than the other centres. This is due to its low carbon emission intensity per square metre. At the other end of the scale the sub-regional centre in this example will experience the largest increase in outgoings as it has the highest carbon emission intensity per square metre.

Similar to the office sector the impact on the landlord will depend on the type of leasing structure in place, with gross leases estimated to be more adversely affected.

The impact on property valuations and property returns will, in the short term, be dependent on individual leasing contracts and the possibility of passing through increased outgoings.

Rental impact for landlords and tenants

Who pays for the increases will depend on individual lease structures. The proportion of outgoings paid by landlords and tenants varies considerably across Australian commercial property.

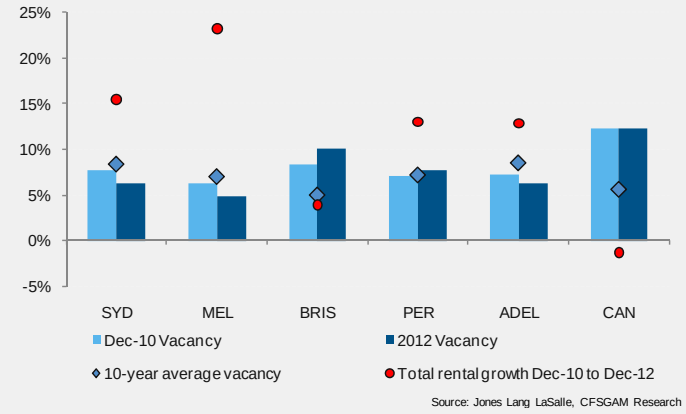
The variation is a result of differing lease conventions between property types and markets as well as changes in negotiating power as vacancy rates and economic conditions change. One estimate puts net leases at around 50% to 60% of office and retail property, that is, 50 to 60% of operating costs are recovered from the tenant. This figure would alter depending on property type, location and when leases were negotiated.

Rental income - office

As new leases are negotiated, supply and demand factors for individual markets are likely to play a bigger role in shifting gross market rents than increases in outgoings. If vacancy rates are relatively high, tenants have more negotiating power and it is more likely landlords will absorb the additional cost. Where vacancy rates are low and demand high, any increase in outgoings are more likely to be passed on to the tenant.

If the increased costs are passed on to the tenant it is unlikely to have a significant impact on the total operating expenses and ultimately profit of the tenant's business. This is because occupancy expenses tend to only account for approximately 10% of total expenses for office tenants such as finance and insurance sector businesses[6]. With vacancy rates expected to move lower in most CBD markets by 2012 there should be solid rental growth. Figure 7 shows CFSGAM Research's forecasts for vacancy and rental growth over the next two years.

Figure 7: CFSGAM Research forecast CBD office vacancy rates and rental growth



Source: Jones Lang LaSalle, CFSGAM Research

CBD markets forecast to perform well, such as Sydney, Melbourne, Adelaide and Perth are likely to see tenants taking on more of the burden of any increase to energy costs. Markets where vacancy is relatively high, such as Brisbane and Canberra, may see a greater proportion of landlords absorbing the higher costs.

Additionally, potentially stronger demand for more energy efficient buildings could result in higher rental growth for these buildings. The opposite could occur for less energy efficient buildings and may offset higher operating costs to some extent.

Rental income - retail

Turnover rent, or a variable component of a retailer's rent based on the level of turnover, is a common feature of many retail leases. Depending on the impact to household income, there is a short-term risk consumer spending could suffer from the introduction of a carbon price.

The introduction of the GST in 2000 may provide an indication of the potential impact. In 2000, retail turnover spiked prior to the introduction and dropped afterwards with turnover normalising after several months.

Any impact to retailer turnover from a CPM will be lessened by government assistance measures. The final Garnaut Climate Change Review report to Government[7] suggested 55% to 65% of CPM revenue be used to assist households. This would be through tax reform for low to middle income households, benefit payments and energy efficiency. Specific property assistance programs are also outlined later.

Tenant demand

Carbon pricing may also create increased demand for energy efficient office buildings by environmentally conscious tenants. This can already be seen in the Australian Capital Territory, where Federal Government agencies are required to occupy commercial buildings with a 4.5 star or above NABERS rating. This has shifted demand from low to high energy efficient buildings. This increased demand should translate into higher rent and hence valuations for energy efficient buildings.

[6] Based on annual reports for CBA, Macquarie, AMP and Suncorp

[7] Australia in the Global Response to Climate Change Summary, 31 May 2011

The higher demand for energy efficient buildings could also decrease the chance of vacancy, increase the term of leases and reduce lease-up periods – enhancing valuations. The opposite would be the case for non-energy efficient buildings, where landlords may find it more difficult to find and retain tenants.

Another indirect impact is the potential for increased demand for commercial buildings located near transport hubs. This may be a result of a CPM increasing the relative cost of emissions intensive transport such as cars. Office and retail buildings close to public transport infrastructure will be more attractive to employees and customers and may command a rental premium.

Property values

A property's value is determined by its future income stream. Any increase in a landlord's share of outgoings will decrease a property's value (in the short term). Based on initial analysis this impact appears to be minimal. However, individual property valuations are generally not uniform or simple and if owners are able to recover the increase in outgoings then passing rent (current rent paid by tenants) may be higher than market rent and the value impact will be reduced.

Table 3, analyses the hypothetical impact of a CPM on the valuation of 4 and 5 star NABERS rated office buildings. The model looks at hypothetical buildings with the same market rent, and makes a simple analysis based on change in the level of outgoings. The analysis shows the value of a 4 star NABERS rated building may decrease by approximately 0.4% with a $2.70 per square metre increase in electricity costs (based on the average increase under the three fixed price scenarios analysed in this paper). For a 5 star NABERS rated office building the impact is marginally less at 0.3% (based on a $2.20 per square metre increase in electricity costs).

The bigger impact, however, comes from energy efficiency gains that come with an additional star. Excluding carbon pricing, energy efficiency gains from an additional star may potentially reduce costs and add 0.5% to a building's value. Including carbon pricing, a 5 star NABERS rated building may be worth 0.6% more than a 4 star building based on energy cost savings alone. This is based on a hypothetical saving of $3.32 per square metre from the additional star and will vary depending on the technology used and energy cost. Capital expenditure required to obtain the additional star is not included.

Table 3: Hypothetical Sydney office building value impact from increased outgoings due to carbon pricing

	4 Star		5 Star	
	No Carbon Pricing	Carbon Pricing	No Carbon Pricing	Carbon Pricing
Gross Market Rent	$25,464,600	$25,464,600	$25,464,600	$25,464,600
Outgoings per sqm	$161	$163	$157	$160
	$4,821,000	$4,901,391	$4,721,400	$4,787,668
Vacancy	5.00%	5.00%	5.00%	5.00%
	$1,273,230	$1,273,230	$1,273,230	$1,273,230
Net Market Rent	$19,370,370	$19,289,979	$19,469,970	$19,403,702
Capitalisation rate	6.88%	6.88%	6.88%	6.88%
Property value	$281,546,076	$280,377,608	$282,993,750	$282,030,550
Value difference - carbon pricing		**-0.4%**		**-0.3%**
Value difference - energy rating			**0.5%**	**0.6%**

Source: Jones Lang Lasalle, CFSGAM Research

Notes

1. Gross market rent assumed to stay constant in the different scenarios. $848.82/sqm adopted, based on JLL data from December 2010

2. Outgoings for 4 Star No carbon pricing adopted based on JLL December 2010 data
3. Outgoings for 5 Star No carbon pricing adopted based on JLL report - "Assessing the value of sustainability". Paper highlighted specific example of outgoings savings of $3.32/sqm by lifting the energy rating by 1 star

4. Increase in outgoings with electricity pricing based on the $25/MWh scenario.
5. JLL capitalisation rate as at December 2010 for prime Sydney CBD office buildings adopted for all scenarios.

6. Building is assumed to be a prime building with an NLA of 30,000sqm

Other potential office property value impacts could include:

- Increased market rent for more energy efficient buildings, leading to increased market value;
- Reducing market rents for lower energy efficient buildings, leading to lower market value;
- A shift in the risk premium leading to a slightly higher capitalisation rate in response to the threat of escalating energy prices resulting in a lower market value. This could be the case whether a carbon price is introduced or not; and
- Improved letting up periods and relatively lower vacancy levels for more energy efficient buildings, leading to increased property values.

Retail asset values could be influenced by similar factors. Additionally, the possibility of reduced turnover rent could flow through to retail property values until consumer spending patterns adjust. However, if consumer spending adjusts and recovers quickly this value impact could be short lived.

Portfolio value

Any change in property value and rent will flow through to investment portfolios and investor returns. Table 4 details the analysis of a hypothetical portfolio of retail and office properties. Three scenarios have been adopted for additional electricity expenses, assuming 50% of the increased electricity costs cannot be recovered from the tenant. The analysis indicated that earnings could fall between 0.3% and 1.4%.

Table 4: Hypothetical impact on profit for a property portfolio due to carbon pricing

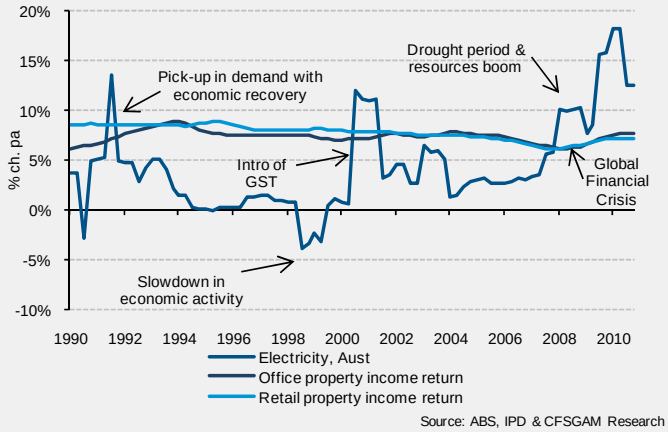
	No Carbon Pricing	Carbon pricing $10/MWh	Carbon pricing $25/MWh	Carbon pricing $40/MWh
Total revenue and other income ('000s)	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Total expenses ('000s)	$ 57,437	$ 57,437	$ 57,437	$ 57,437
Additional expenses from CPM ('000s)	$ -	$ 148	$ 369	$ 590
Profit for full year ('000s)	$ 42,563	$ 42,416	$ 42,194	$ 41,973
Basic earnings per ordinary unit (cents)*	2.13	2.12	2.11	2.10
Difference		-0.3%	-0.9%	-1.4%

Source: CFSGAM Research

* Assumptions: 2,000 million units, portfolio of retail and office assets with NLA of 240,000sqm and 50% of increased costs can be passed through to the tenant

The relatively low impact on earnings is further supported by Figure 8. This figure demonstrates how increases in retail electricity prices have historically had limited impact on the income return for retail and commercial property in Australia.

Figure 8: Commercial property income return compared to changes in electricity prices



Source: ABS, IPD & CFSGAM Research

Complementary measures

The introduction of a CPM will impose costs on the commercial property sector but there have been a number of Government initiatives designed to help the sector transition to a lower carbon economy. Examples at the Federal Government level include:

- In November 2010 the federal Government announced the implementation of Tax Breaks for Green Buildings, at a total cost of $150 million over four years and estimated at around $1 billion over the life of the scheme. Through this measure, businesses that retrofit certain buildings to significantly improve energy efficiency will be able to apply for a one off bonus tax deduction. However, in the 2011-12 Commonwealth Budget, the Federal Government deferred the start date to ensure there is enough time to consider all stakeholder proposals regarding the measure.
- The Green Building Fund was announced in October 2008 with the objective of reducing the property sector's carbon footprint by reducing the energy consumed in the operation of commercial office buildings. The program was later expanded to include hotels and shopping centres. Grants of between $50,000 and $500,000 were available, for up to half of the cost of retro-fitting and/or retro-commissioning a commercial office building to reduce energy consumption and emissions. A total of $90 million has been committed over the operation of the scheme.
- Low Carbon Australia (formerly Australian Carbon Trust) was established by the Australian Government as an independent company with over $100 million initial funding to provide finance and advice to Australian businesses take-up and use of energy-efficient technologies and practices for cost-effective carbon reductions.
- The Energy Efficiency Opportunities Act took effect in July 2006 with the aim to improve the identification and evaluation of energy efficiency opportunities by large energy using businesses and, as a result, to encourage implementation of cost effective energy efficiency opportunities.
- The National Greenhouse and Energy Reporting Act 2007 introduced a national framework for the reporting and dissemination of information about greenhouse gas emissions, greenhouse gas projects, and energy use and production of corporations.

Examples at the State Government level include:

- The NSW Greenhouse Gas Reduction Scheme, which started in 2003, provided incentives for energy efficiency through its Demand Side Abatement component. This part of Greenhouse Gas Abatement Scheme was successful in delivering low-cost energy efficiency activity. Now referred to as the Energy Savings Scheme, building owners and tenants are able to generate abatement certificates by reducing emissions through energy use from business as usual. These tradable

certificates create a financial incentive to reduce energy use.
- The more recently announced Environmental Upgrade Agreements is new legislation in NSW designed to stimulate energy efficiency upgrades in the commercial and multi-unit residential building sectors. There is similar legislation in Victoria with the same objective.

Local government has also been active in providing business with programs that aim to facilitate the investment in energy efficiency activities. One such example is the City of Melbourne's 1200 Buildings project, which has been designed to facilitate the retrofitting of 1200 commercial buildings within the municipality.

Opportunities and case studies

It is anticipated that with the introduction of a carbon price, payback periods will be reduced for energy efficiency projects, increasing the likelihood of their implementation. Not only will this lessen the impact of a CPM but it will also help move the property sector to a low carbon environment.

Research by McKinsey suggests by 2030 a total of 60 mega tonnes of carbon reduction opportunities can be found in the building sector at low or negative carbon costs. 50 mega tonnes will be available by 2020 and many can be implemented today. Opportunities such as improving commercial air handling, air conditioning, hot water systems and insulation installation were identified to have attractive paybacks[8].

To date, the commercial property sector has been a leader in the adoption of energy efficiency technologies which places it in an excellent position to mitigate the potential impact of a CPM. CFSGAM measures and monitors its property assets' energy use and greenhouse emissions and is continuously researching opportunities to improve efficiency. For example, since 2006 the Commonwealth Property Office Fund reduced greenhouse intensity by 29.7% and reduced energy intensity by 28.9%[9]. Examples of energy efficiency and carbon abatement opportunities identified and implemented include:

Case Study 1: Reduce lighting

Property: 60 Castlereagh St, Sydney
Project Cost: $14,622
Payback period: 2.7 years
CO_2-e pollution offset: 87.8 tonnes per annum
$ savings: $5,416 per annum

This office asset offered energy and cost saving opportunities by de-lamping of fire stairs and installation of PIR sensors and timers in the car park and loading dock.

Case Study 2: NABERS rating upgrade

Property: 385 Bourke St, Melbourne
Project Cost: $3,200,000
Payback period: 6.8 years
CO_2-e pollution offset: 5,082 tonnes per annum
$ savings: $467,000 per annum
NABERS rating before: 0 stars
NABERS rating after: 3.5 stars

To improve the energy efficiency of this building and create significant cost and CO_2-e savings the following upgrades were undertaken.

- Lighting control and lighting efficiency
- Removal of air curtains over major entrances, replaced by automated doors
- Upgrade of fan motor plant to enable variable speed control of fans
- Tuning of control systems. Examples included: economy cycle optimisation; floor system algorithm tuning; after hours floor by floor zoning; chiller and boiler sequencing controls; and heating hot water and chilled water loop control tuning.
- Change control on any Building Management Services changes

As a result of the upgrades carbon emissions between 2005 and 2010 have been reduced by 48.5%.

Other benefits of the project include reduced energy costs and a reduction in chiller and boiler run times which will increase life expectancy of equipment.

Case Study 3: Stairwell motion detectors

Property: 11 Waymouth St, Adelaide
Project Cost: $21,380 plus GST
Payback period: 3.24 years
CO_2-e pollution offset: 29.19 tonnes per annum
$ savings: $6,594 per annum

5-star NABERS Energy rated buildings also offer opportunities to reduce energy consumed. Traditionally it was thought all stairwells used by building occupants must be illuminated all the time for safety reasons. It was determined the use of "microwave detectors" or "ultra sonic" sensors would be adequate to comply with relevant codes.

Analysis was conducted after motion detectors were installed in two stairwells within the building. The data showed average savings of approximately 72% in energy and costs.

[8] An Australian Cost Curve for Greenhouse Reduction, McKinsey and Company, 2008
[9] Intensity is defined as Scope 1 and 2 emissions per square metre of net lettable area.

Conclusion

Australia is moving towards carbon regulation. As the commercial property industry is indirectly responsible for approximately 10% of Australia's carbon greenhouse gas emissions, the industry will be impacted by any new regulation. The purpose of this paper was to analyse the potential impact as well as highlight the steps the industry has taken to prepare for carbon regulation.

While details of any new regulation are yet to be finalised, based on the information currently available, CFSGAM Property Research finds the Government's proposed CPM is unlikely to materially affect the commercial property sector.

Initial analysis suggests that over the short to medium term, the impact on development and operating costs as well as property and portfolio valuations should be minimal.

A CPM may indeed be a positive development for the industry. By accelerating the adoption of energy efficient technologies and complimentary measures to assist the sector in the transition to a reduced carbon economy; it would help to future proof commercial property against further increases in electricity costs.

Summary table of potential impacts of a CPM for commercial property

	Tangible (easier to quantify)	Intangible (difficult to quantify)
Short term	– Energy Efficiency Investment Opportunities are brought forward – while marginal, energy cost increases may facilitate greater investment in energy efficiency projects as the payback improves. – Increased capital expenditure and development costs – increased cost of steel, concrete and other building materials will increase total development costs and increase economic rents. – Increased building outgoings – the impact on property value and returns depends on lease structures and whether the increased costs can be passed on to the tenant or not. – Property values – initial analysis shows impact from increased outgoings due solely to carbon price would be less than 1%. – Property returns / profit – will be impacted depending on whether an owner can pass through the increased outgoings or not.	– Increased tenant demand for energy efficient buildings from corporations with high emissions. – Rental income unlikely to adjust solely because of the increase in outgoings. Other market factors play more of a role when negotiating new leases. Lease structure of existing tenants is important initially. Markets with larger proportion of gross leases will be more impacted. – Investors may favour stocks with greater international exposure. Stocks with a higher proportion of offshore assets would not suffer as great an impact on earnings from the carbon price. – Investors may favour stocks with a higher proportion of highly rated buildings. – Tenant earnings. Retail and office tenants may experience fluctuations in revenue, similar to that experienced during and after the introduction of the GST.

Medium term	– Increased building outgoings – new leases and renewals are negotiated, taking into account all market factors.	– Higher rental growth for energy efficient buildings due to increased demand. Opposite for less energy efficient buildings.
		– Property values and returns / profit – more likely to be influenced by other market fundamentals, such as supply and demand, than carbon pricing and increased outgoings.
		– Property values could also be influenced by:
		  – The energy efficiency rating of building, through difference in rents, cap rates and letting up periods.
		  – A shift in risk premium in response to threat of escalating energy prices.
		– Tenant productivity – Greener buildings may provide a better working environment for tenants with the potential for productivity increases.
		– Increased demand near transport hubs as carbon pricing is likely to increase the costs of emission intensive transport. Properties minimising tenants' travel requirements are likely to be preferred.
		– Risk of losing tenants or space requirement shrinking from industries more exposed to carbon pricing.
		– Possibly reduced office demand. If the CPM results in slower economic and fewer requirements for jobs. Initial evidence with the introduction of an ETS in New Zealand has shown little impact on the economy, inflation or the commercial property market.

Long term	– Widespread adoption of energy efficient technologies. – Move back to long term market fundamentals – history showed for commercial property markets the introduction of the GST was overshadowed by other factors such as the tech boom and bust and Sydney Olympics. The market adjusted relatively quickly to the GST and has continued to the influenced by 'normal' demand and supply fundamentals. A similar scenario is likely to eventuate with the introduction of a carbon price.	

For further information

John Sears	Head of PAI Research	+61 2 9303 3598	jsears@colonialfirststate.com.au
Ritesh Prasad	Senior Infrastructure Analyst	+61 2 9303 7195	rprasad@colonialfirststate.com.au
Kelly Barlin	Senior Property Analyst	+61 2 9303 2625	kelly.barlin@colonialfirststate.com.au
Dejan Radanovic	Investment Analyst	+61 2 9303 6429	dradanovic@colonialfirststate.com.au
Michael Teran	Graduate Analyst	+61 2 9303 3013	mteran@colonialfirststate.com.au
Mary Culjak	Research Assistant	+61 2 9303 3518	mculjak@colonialfirststate.com.au