THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

FINM3406
Real Estate Finance

Lecture 13
ESG and Real Estate

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Outline

- Overview of the final exam
- What is ESG and why it matters to real estate
- What is Sustainable Development
- Mechanisms for measuring and achieving Sustainable Development

Objectives

- Understand why sustainable development in the context of ESG matters in real estate finance
- Be able to explain the major initiatives to achieve sustainable development and minimise environmental impact of real estate

END OF SEMESTER EXAM

End of Semester Exam

- **Duration and Weighting**
  - 1 hour 40 minutes (including 10-minute planning time)
  - Grade Weighting – 40%
- **Format – Blackboard exam**
  - 10 multiple choice questions – 1 mark each (may include calculations)
  - 4 short answer questions – 5 marks each (may include calculations)
  - 1 essay question – 10 marks
- **Content**
  - 10 multiple choice questions – all weeks
  - 4 short answer questions – weeks 5 to 13
  - 1 essay question – all weeks
  - Content from guest lectures not examinable
- **Practice -** Refer to the tutorial activities

ESG AND REAL ESTATE

What is ESG?

- ESG stands for
  - Environmental
  - Social
  - Governance
- It is a framework used to evaluate a company's sustainability and ethical practices.
- No one single globally recognised standard for ESG reporting (International Standards Organisation, Global Reporting Initiative and Sustainability Accounting Standards Board have different standards)

What is ESG?

- Environmental (E):
  - Focuses on a company's impact on the natural environment.
  - Considers factors such as carbon emissions, waste management, resource usage, and climate change mitigation.
  - Aims to assess environmental risks, sustainability practices, and ecological stewardship.

What is ESG?

- Social (S):
  - Focuses on a company's impact on society and stakeholders.
  - Includes aspects like labor practices, human rights, community engagement, diversity and inclusion, employee welfare, and product safety.
  - Evaluates the company's commitment to social responsibility and positive societal impact.

What is ESG?

- Governance (G):
  - Focuses on a company's internal structure and management.
  - Examines board composition, executive compensation, shareholder rights, transparency, and ethical business practices.
  - Assesses the company's corporate governance, risk management, and accountability.

Why ESG matters to real estate finance?

- **Risk Management**:
  - ESG factors can help assess and manage risks associated with real estate investments.
  - Evaluating environmental risks, such as climate change impacts or regulatory changes, social risks like community relations, and governance risks like ethical practices can contribute to better risk mitigation strategies and long-term resilience.

Why ESG matters to real estate finance?

- **Investor Behaviour**:
  - Institutional investors, including pension funds and asset managers, are placing greater emphasis on ESG criteria when making investment decisions.
  - Real estate developers and owners who prioritize ESG practices can attract capital from investors seeking sustainable and socially responsible investments.

Why ESG matters to real estate finance?

- **Property Values**:
  - ESG performance can influence the valuation of real estate assets. Energy-efficient buildings, sustainable design, and green certifications often command higher property values and rental premiums.
  - ESG factors may also impact marketability and occupancy rates as tenants increasingly prioritize sustainable and healthy buildings.

Why ESG matters to real estate finance?

- **Regulatory Environment**:
  - Governments are increasingly incorporating ESG considerations into real estate regulations.
  - This can include energy efficiency standards, building codes, disclosure requirements, and incentives for sustainable development. Compliance with these regulations can impact the financial viability and success of real estate projects.

Why ESG matters to real estate finance?

- **Social Impact and Reputation**:
  - Real estate projects can have significant social and community impacts. ESG practices can promote affordable housing, community development, accessibility, and other social objectives.
  - Engaging with local stakeholders and addressing community concerns can enhance the reputation of real estate developers and support long-term success.

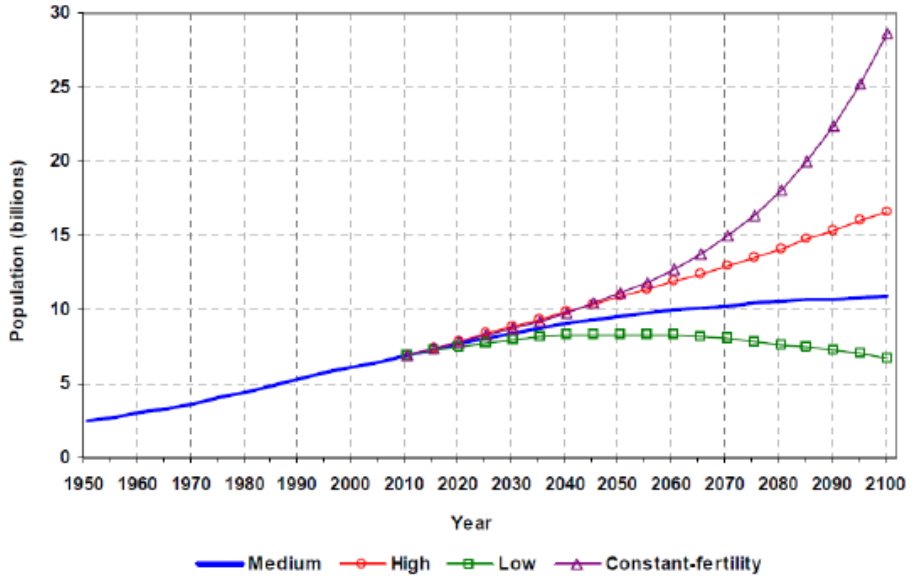
Why ESG matters to real estate finance?

- **Long-Term Sustainability**:
  - ESG considerations align with the concept of long-term sustainability in real estate finance.
  - Sustainable building practices, energy efficiency, responsible resource management, and social responsibility contribute to reducing operational costs, improving tenant satisfaction, and mitigating future risks, ultimately enhancing the financial performance and longevity of real estate investments.

SUSTAINABLE DEVELOPMENT

Sustainable Development

World Population 1950 -2100



Source: UN Population Division /DESA

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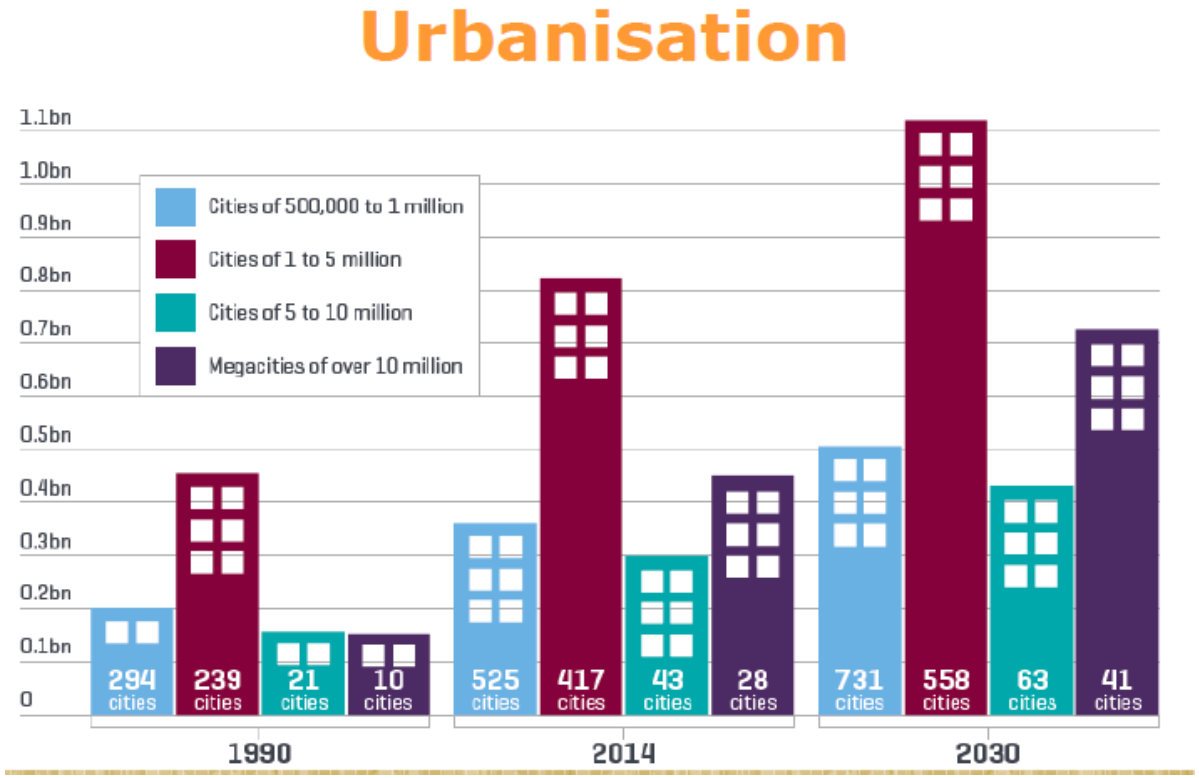
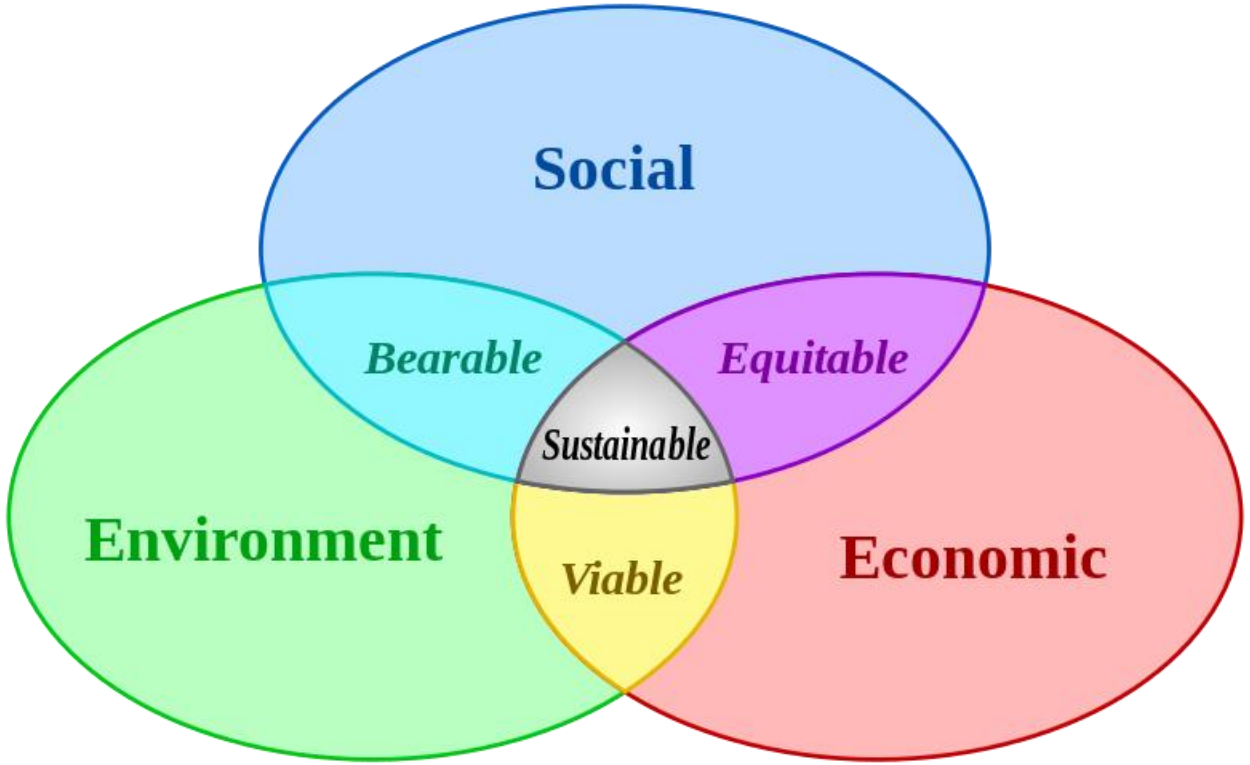


Sustainable Development

- What is Sustainable Development?
  - 1987 Brundtland Report
    - *'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'*

Sustainable Development



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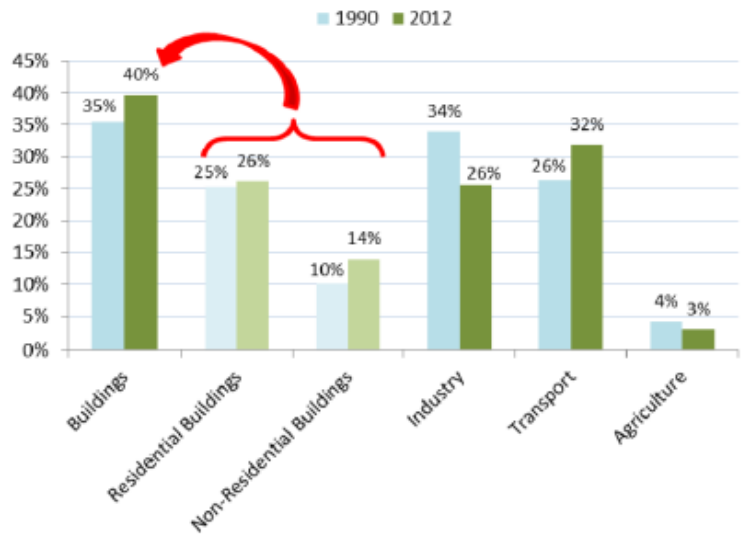
Climate Change & Sustainability

- *Buildings worldwide account for a surprisingly high 40% of global energy consumption*

World Business Council 2009



Share of buildings in final energy consumption in EU-28 (Source: Eurostat)

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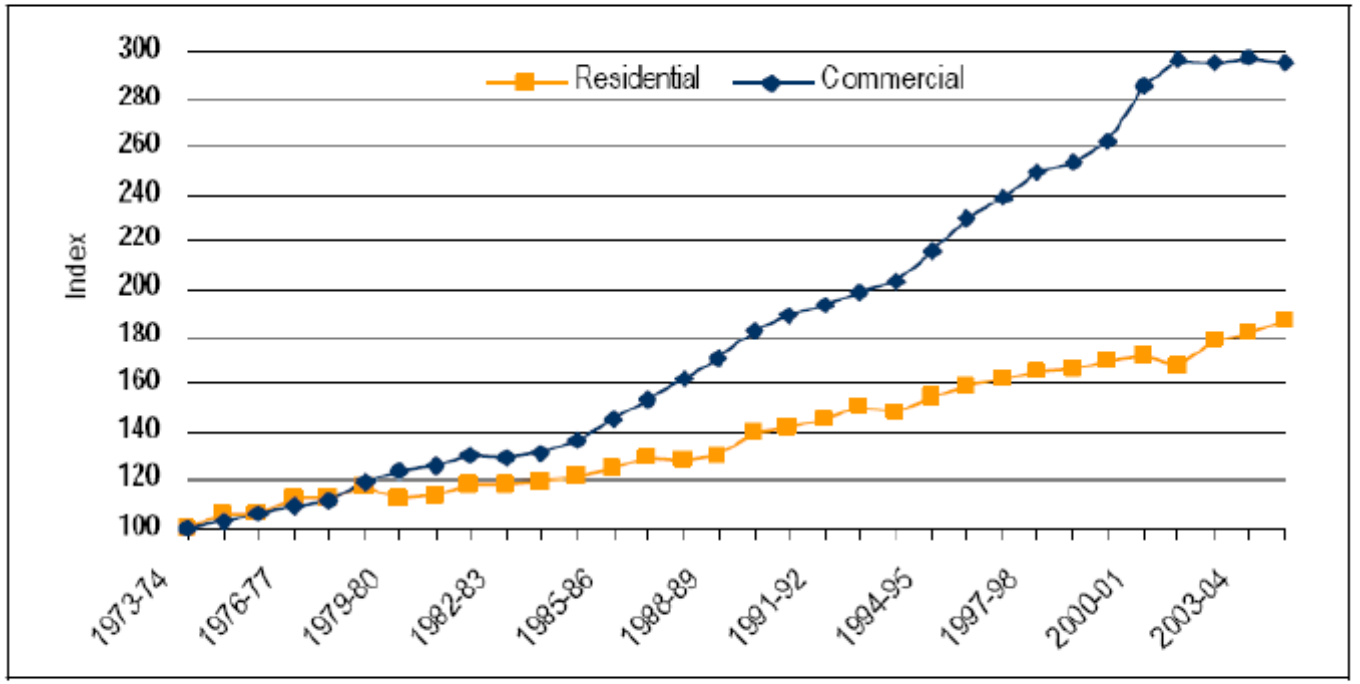
Energy Use



[a] The chart of energy end use reflect total energy consumption across fuel sources. Fuel sources include fossil fuels and renewables. ABARE (2006a) estimates that of primary fuels consumed in Australia, around 45 per cent are used to generate electricity; roughly 24 per cent are used for transport; and 19 per cent for the manufacturing sector.

Data source: ABARE (2006a)

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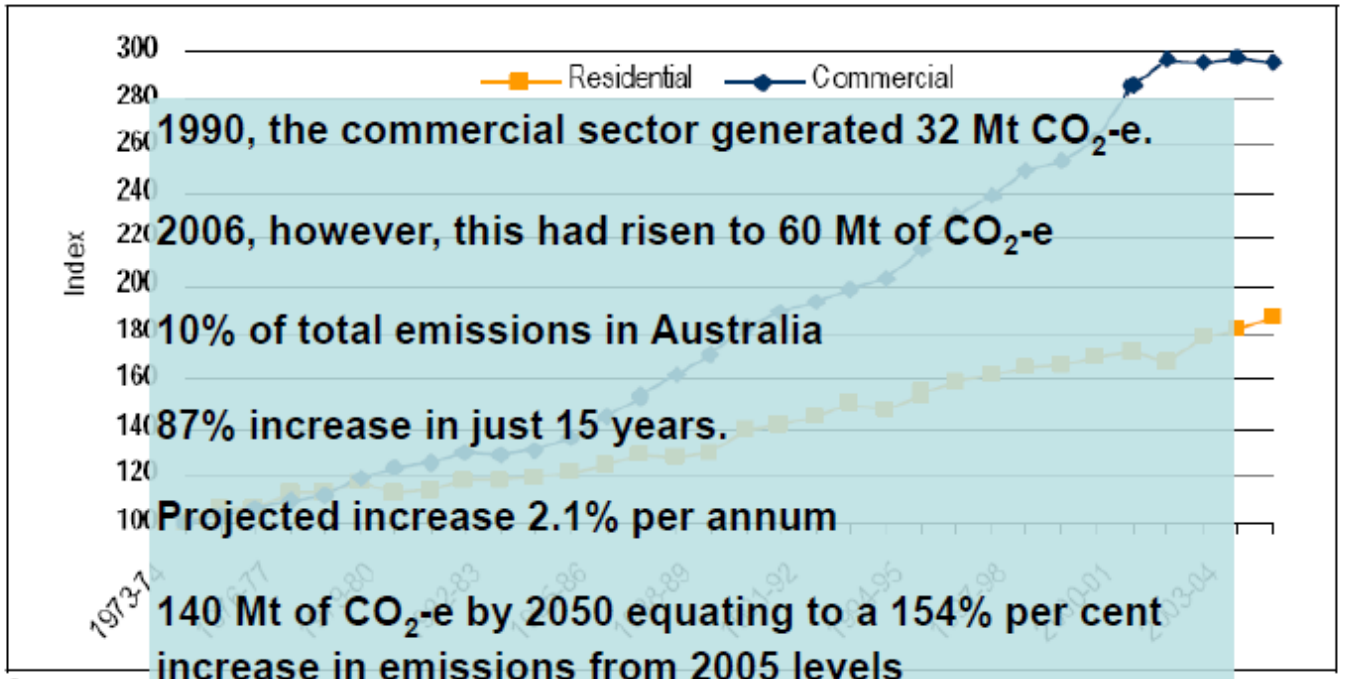
Energy Use



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Data source: ABARE (2006a)

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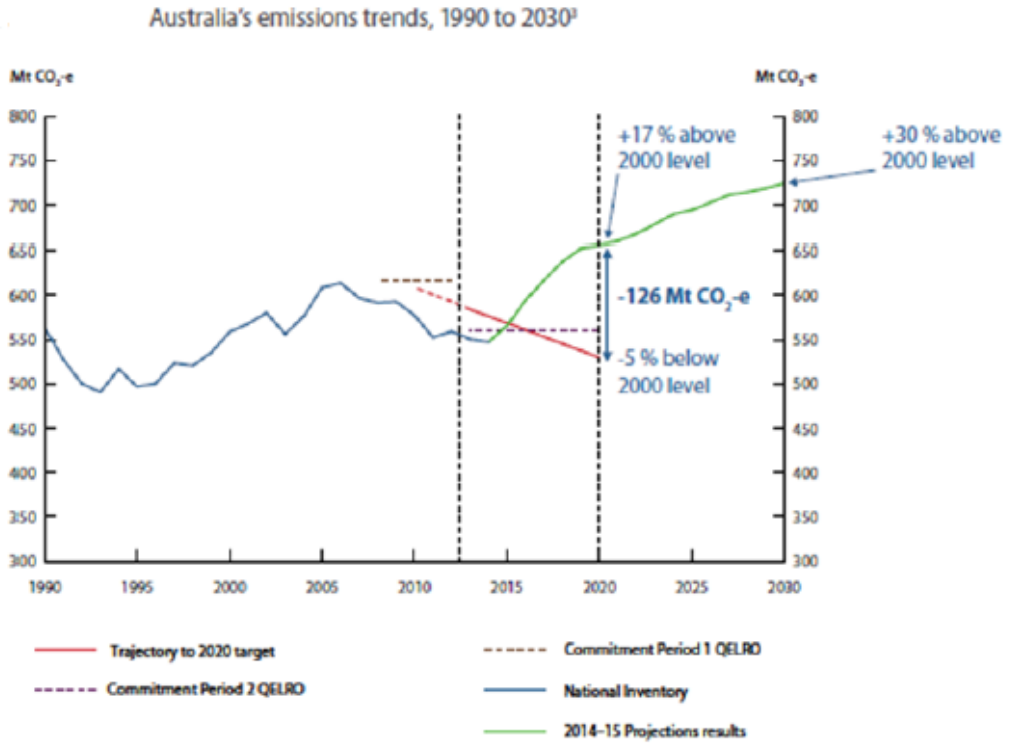
Australia Emissions Projections



Source: Australian Government 2015

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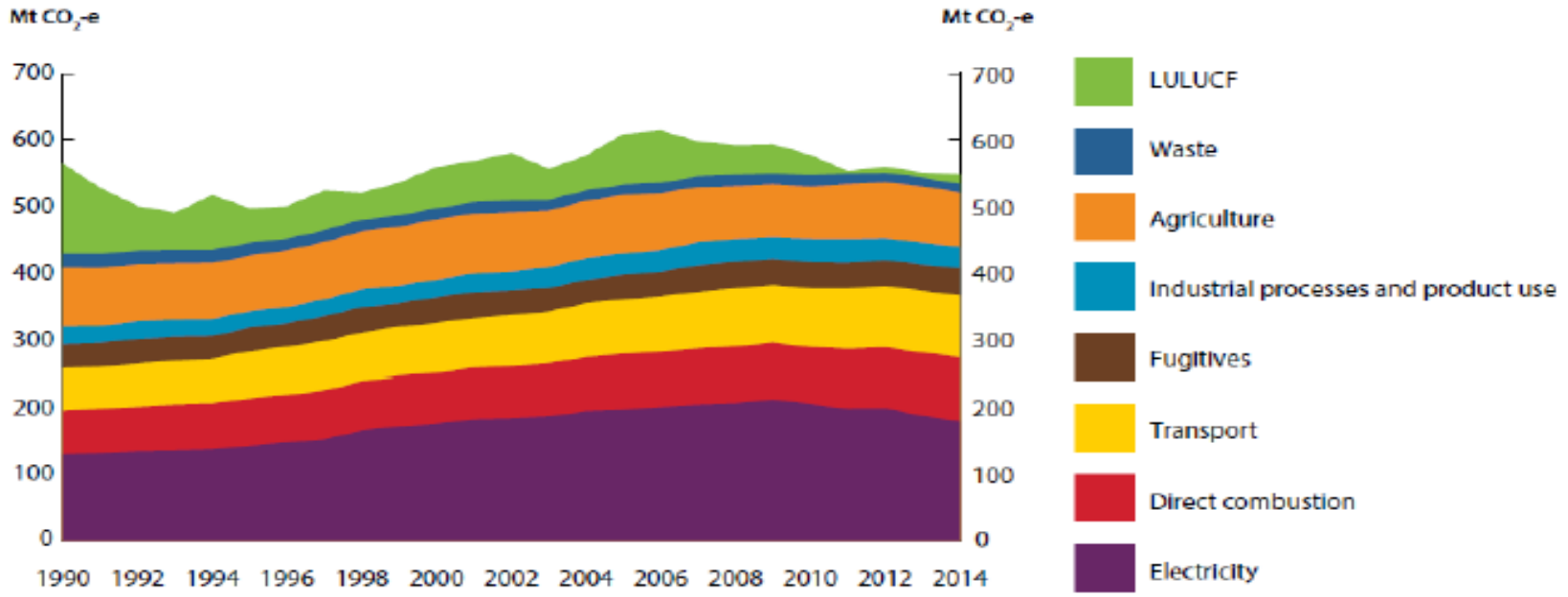
Australia Emissions



Source: DoE 2015a.

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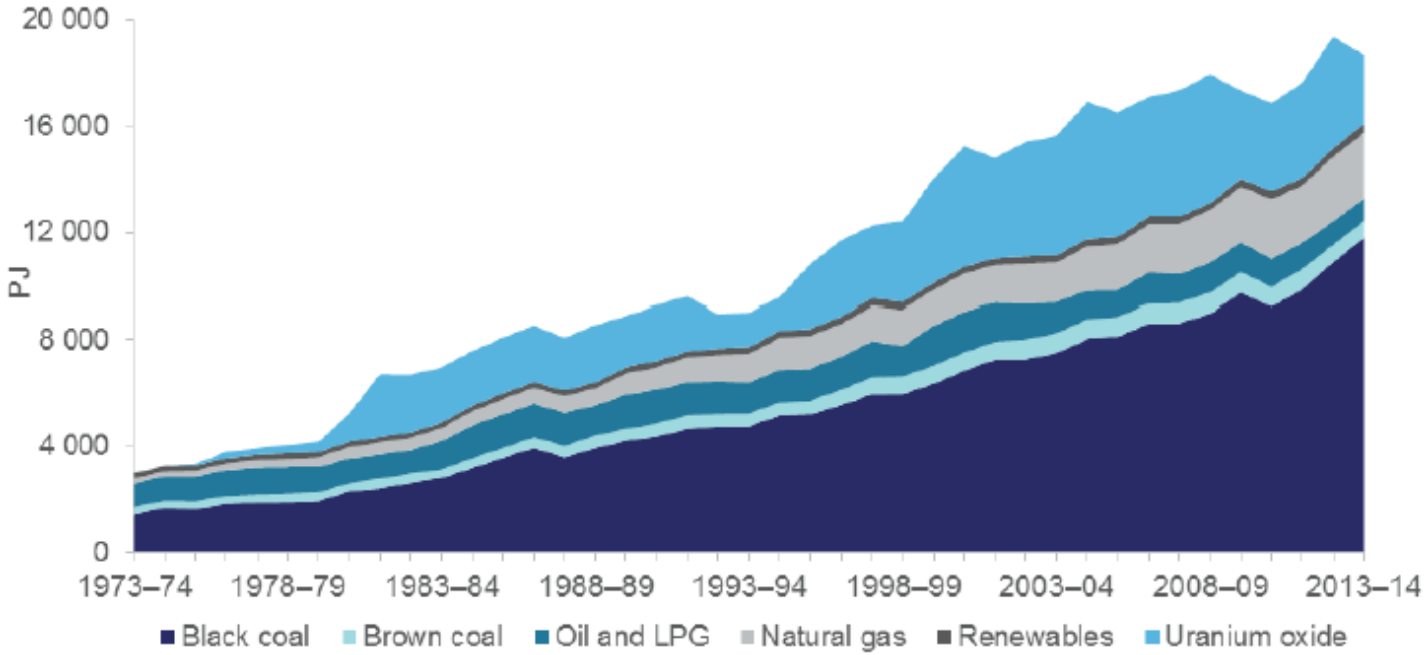
Australia Energy Production



Source: Department of Industry and Science (2015) *Australian Energy Statistics*,

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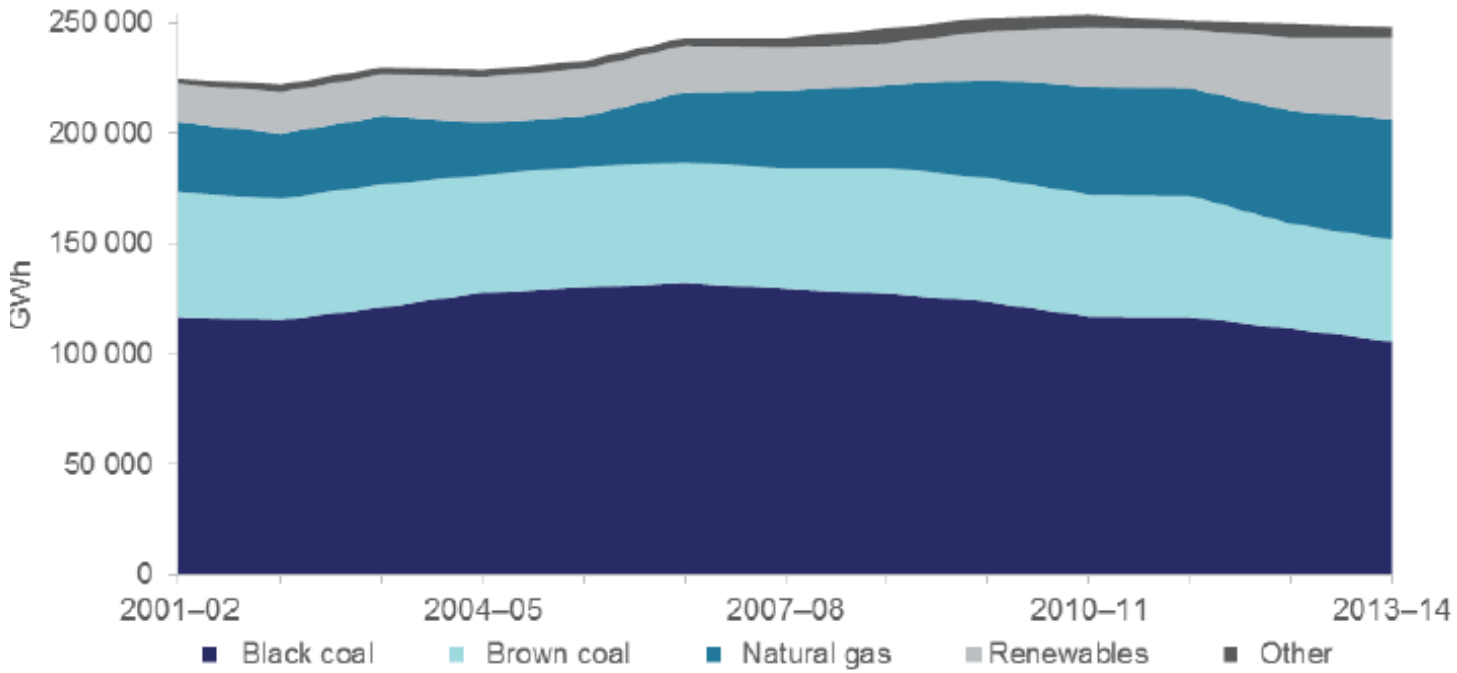
Australia Electricity Generation



Source: Department of Industry and Science (2015) *Australian Energy Statistics*,

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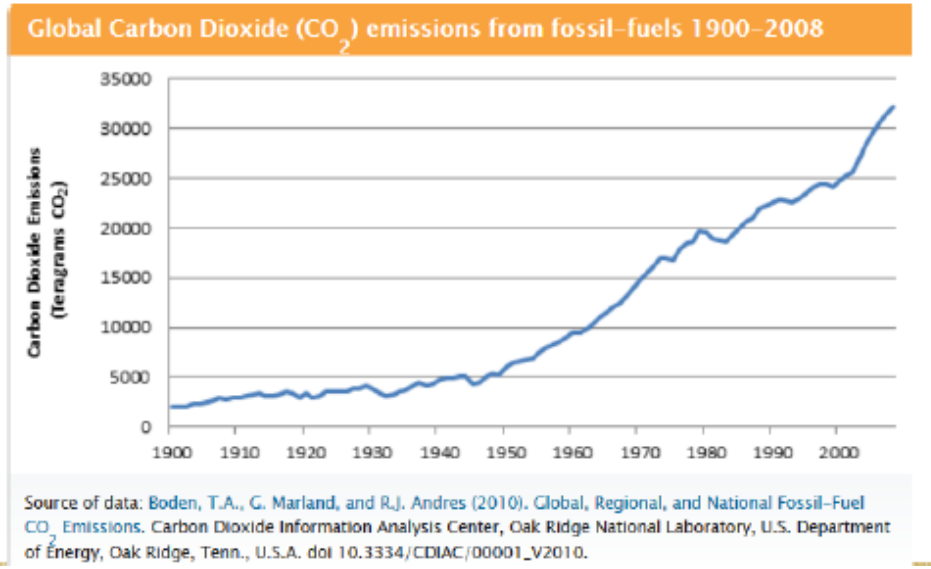
Global Context

- CO_2 concentrations have reached unprecedented levels and are still increasing.



Sustainable Development

Sustainability: pricing of energy

- Sustainability definitions require that at a minimum future generations should be left no worse off than the current generation
- Sustainability in managing claims for future resources and substituting quality improvement for quantity infers a shift in the demand-supply relationship and change pricing structures
- Sustainability in theory implies a quality shift, reduction in the use of resources and pricing effects.
- The question is whether sustainability is rewarded in pricing structure?

Sustainable Development

2020 Renewable Energy Targets

- China 15% (currently 10%)
- Australia 20%
- France 23%
- Germany 45% by 2035
- India 20%
- Korea 11%
- Spain 20%
- UK 15%
- USA California 33%, New York 30%

Sustainable Development

NFEE

- **National Framework for Energy Efficiency**
- unlocking the significant but un-tapped economic potential associated with the increased uptake of energy efficient technologies and processes across the Australian economy.
- Aims to achieve a major enhancement of Australia's energy efficiency performance, reducing energy demand and lowering greenhouse gas emissions (NFEE 2008).

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Australian Government Target

- 60% emission reduction by 2050
- 20% of energy from renewable sources by 2020
- 50% of energy from renewable sources by 2050

Sustainable Development

- **Jevons' Paradox** - improvements in efficiency of resource use can lead to increased consumption of that resource
- **Efficiency gains:** Technological advancements and efficiency improvements make the use of resources more efficient.
- **Rebound effect:** Instead of reducing resource consumption, increased efficiency often leads to increased overall usage of the resource.
- **Example: Energy Efficiency**
  - Improved energy-efficient technologies can lead to lower energy costs per unit.
  - Lower costs encourage increased consumption and the adoption of energy-consuming activities previously considered expensive.
  - Overall energy consumption may rise despite efficiency gains.
- Jevons' Paradox challenges the assumption that improving efficiency alone can solve resource depletion and environmental problems.

MEASURES TO ACHIEVE SUSTAINABLE DEVELOPMENT

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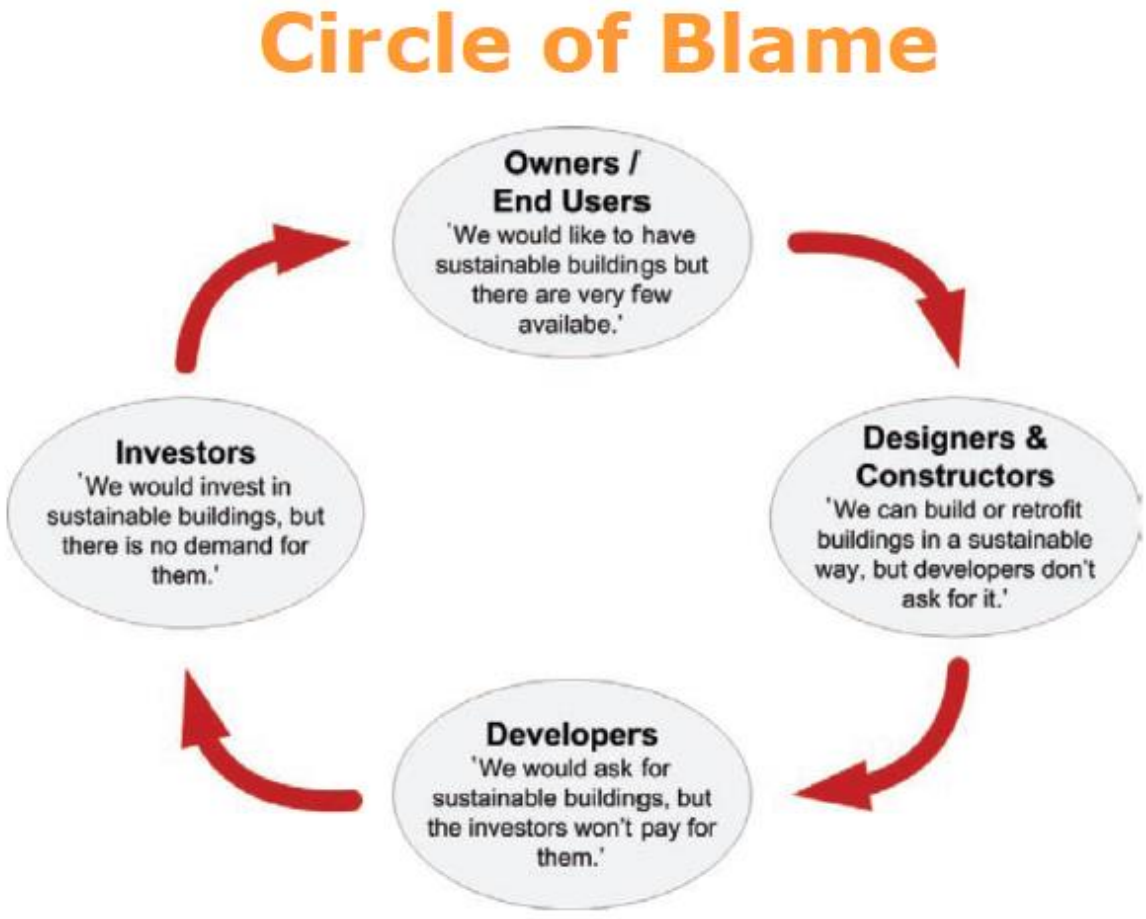
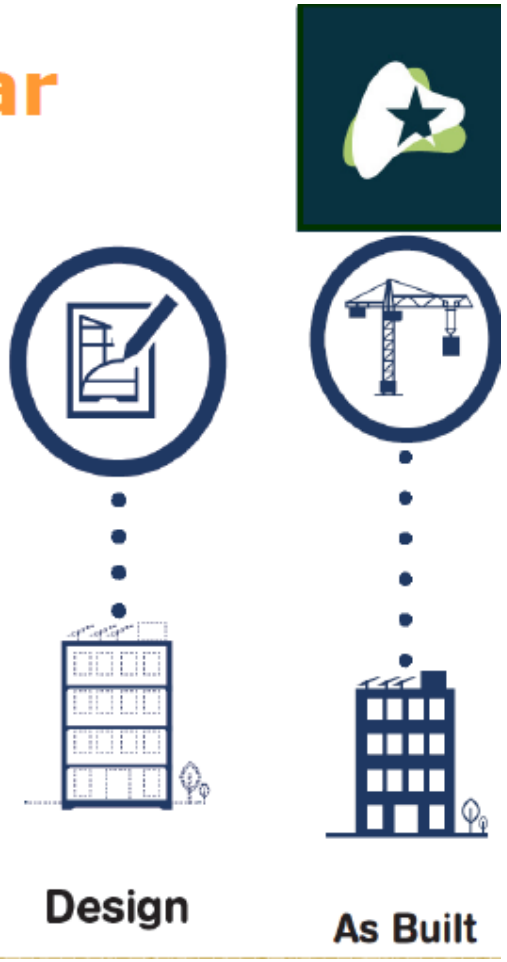


Sustainable Development

Green Star

- Green Building Council
  - 6 Star system
  - Design & As built

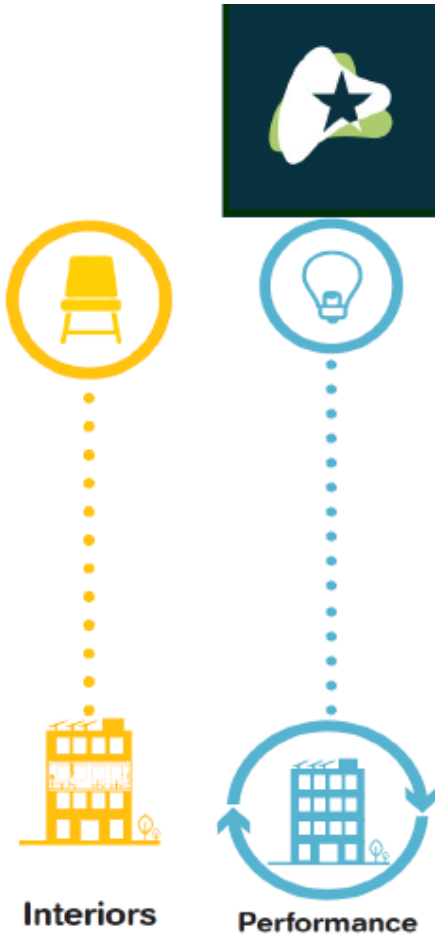


Sustainable Development

Sustainable Development

Green Star

- Green Building Council
  - 6 Star system
  - Building Design & As built
  - Interiors
  - Communities
  - Performance



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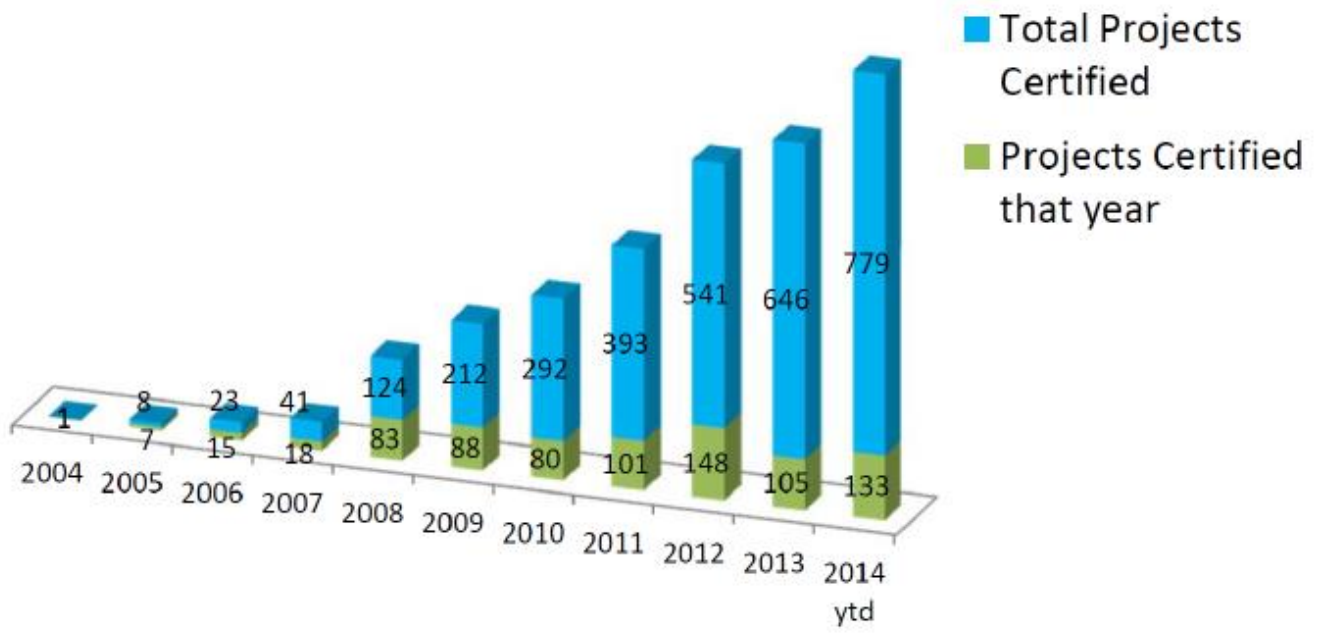
Green Star

Total Certified projects per year



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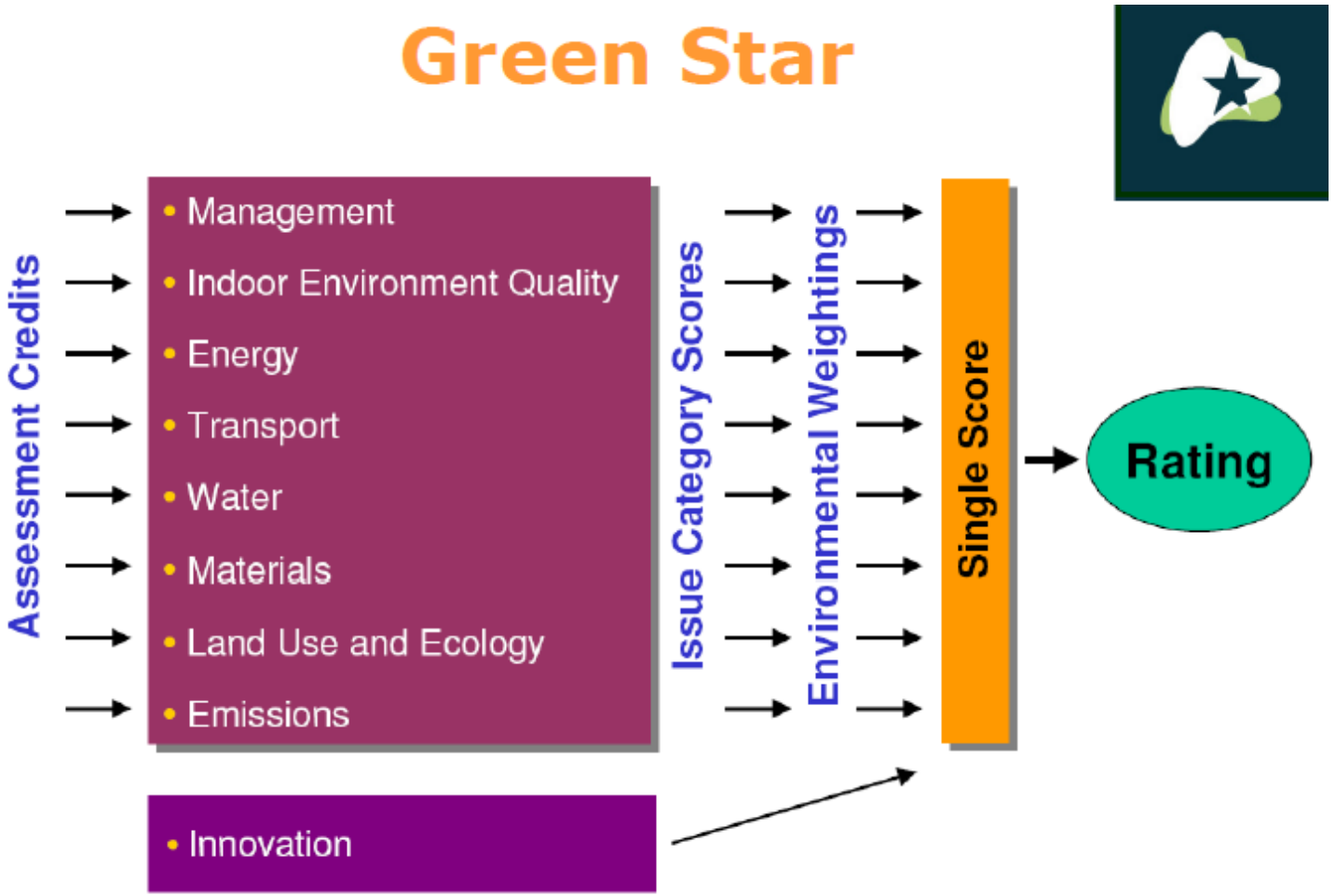
Sustainable Development



Sustainable Development

Green Star Interiors

Indoor Environment Quality

- **IEQ-1** Ventilation Rates
- **IEQ-2** Carbon Dioxide Monitoring and Control
- **IEQ-3** Daylight
- **IEQ-4** Daylight Glare Control
- **IEQ-5** High Frequency Ballasts
- **IEQ-6** Electric Lighting Levels
- **IEQ-7** External Views
- **IEQ-8** Individual Comfort Control
- **IEQ-9** Asbestos
- **IEQ-10** Internal Noise Levels
- **IEQ-11** Volatile Organic Compounds
- **IEQ-12** Formaldehyde Minimisation
- **IEQ-13** Air Supply Ductwork
- **IEQ-14** Tenant Exhaust
- **IEQ-15** Indoor Plants

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IEQ -1

- **Mechanically Air-conditioned and Mechanically Assisted Naturally Ventilated Spaces**
  Up to three points are awarded where for 95% of the NLA, outside air is provided at rates greater than the requirements of AS1668.2-1991, as follows:
  One point for 50% improvement;
  Two points for 100% improvement; and
  Three points for 150% improvement.

- AS1668.2 -1991 = 10%

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Green Star Interiors

Materials

- **Mat-1** Workstations
- **Mat-2** Flooring
- **Mat-3** Walls and Partitions
- **Mat-4** Chairs
- **Mat-5** Tables
- **Mat-6** Storage
- **Mat-7** Joinery
- **Mat-8** Ceilings
- **Mat-9** Waste Management for Tenancy Operation
- **Mat-10** PVC Minimisation
- **Mat-11** Timber

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Green Star Interiors

Energy

- **Ene-1** Energy Efficiency
- **Ene-2** Energy Improvements
- **Ene-3** Electrical Sub-metering
- **Ene-4** Office Lighting Zoning

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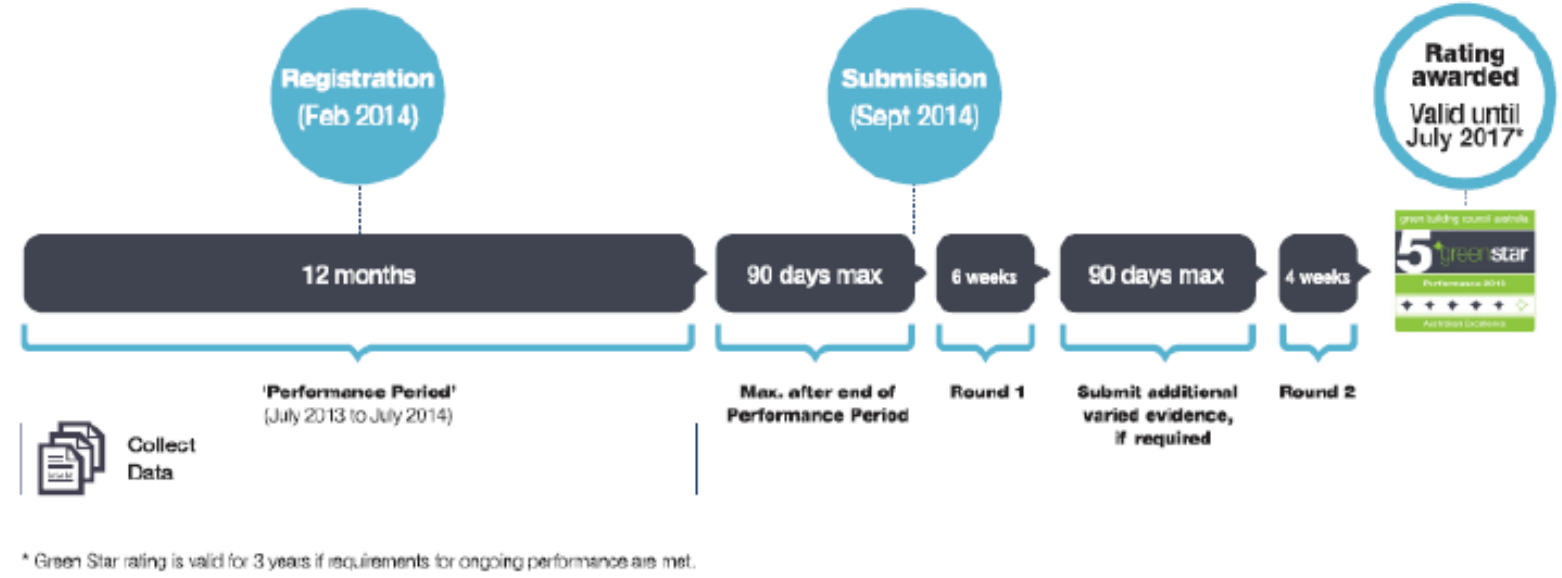
Green Star Interiors

Energy

- **Ene-1** Energy Efficiency
- To meet the conditional requirement:
  The project's predicted greenhouse gas emissions must not exceed 110 kgCO2/m2/annum as determined using energy modelling in accordance with:
  The Australian Building Greenhouse Rating (ABGR) Validation Protocol for Computer Simulations.
  OR
  The final and current version of the Green Star Energy Calculator Guide.

Sustainable Development

Green Star Performance



* Green Star rating is valid for 3 years if requirements for ongoing performance are met.

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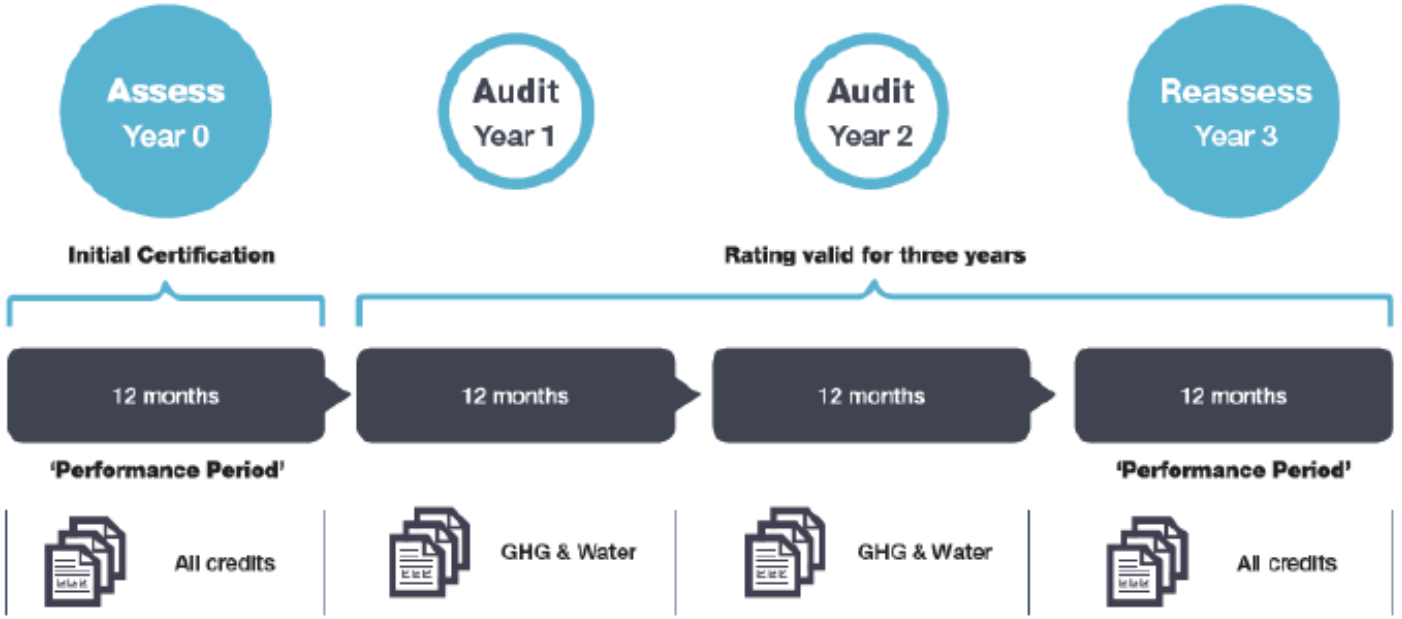
Sustainable Development

Green Star Performance



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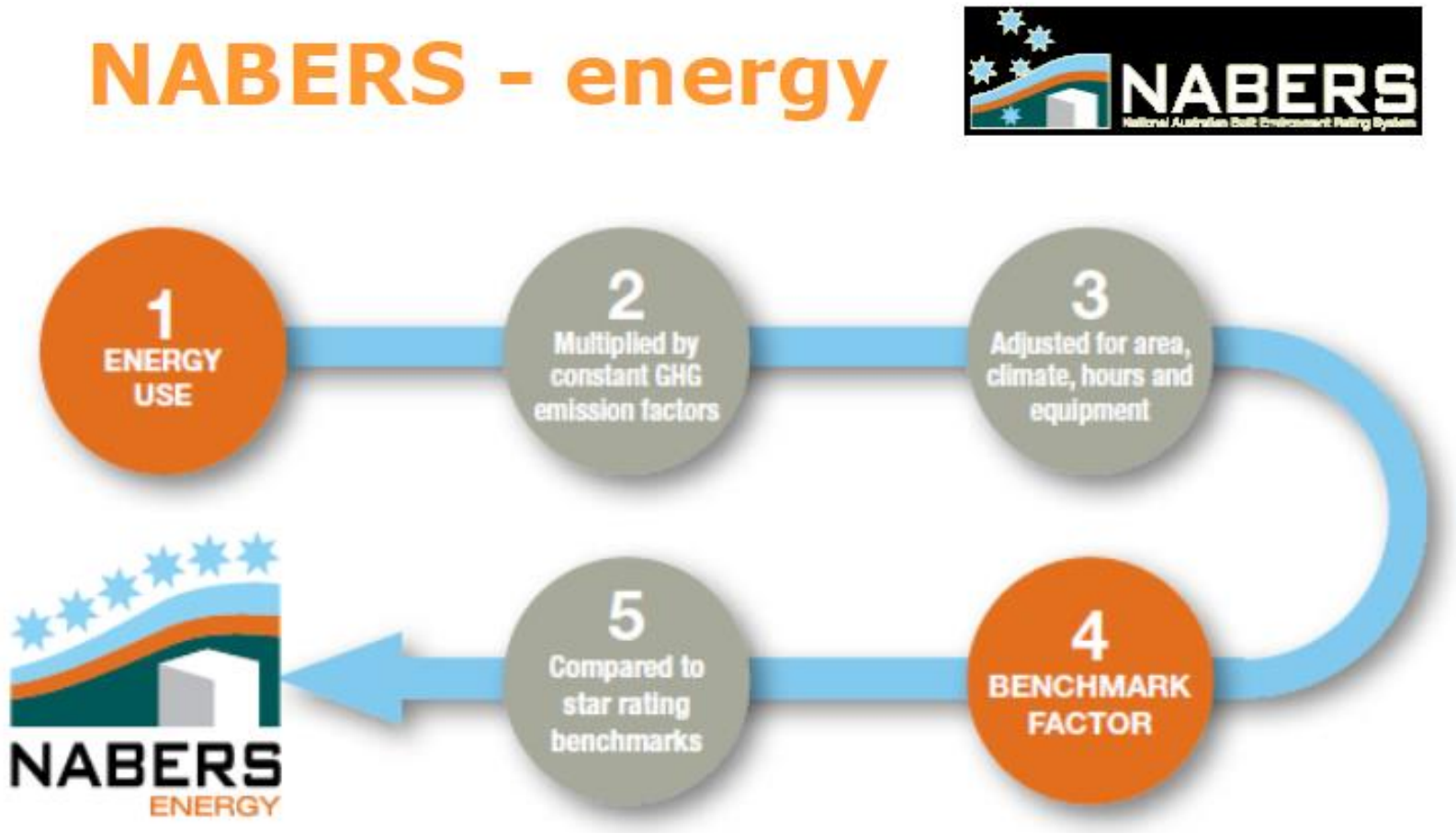
NABERS

National Australian Built Environment Rating System

- 6 Star system
- Rating
  - Performance based
  - Environmental impact of occupation.
  - Measures
    - Energy
    - Water

$KgCO_2$-e

Sustainable Development



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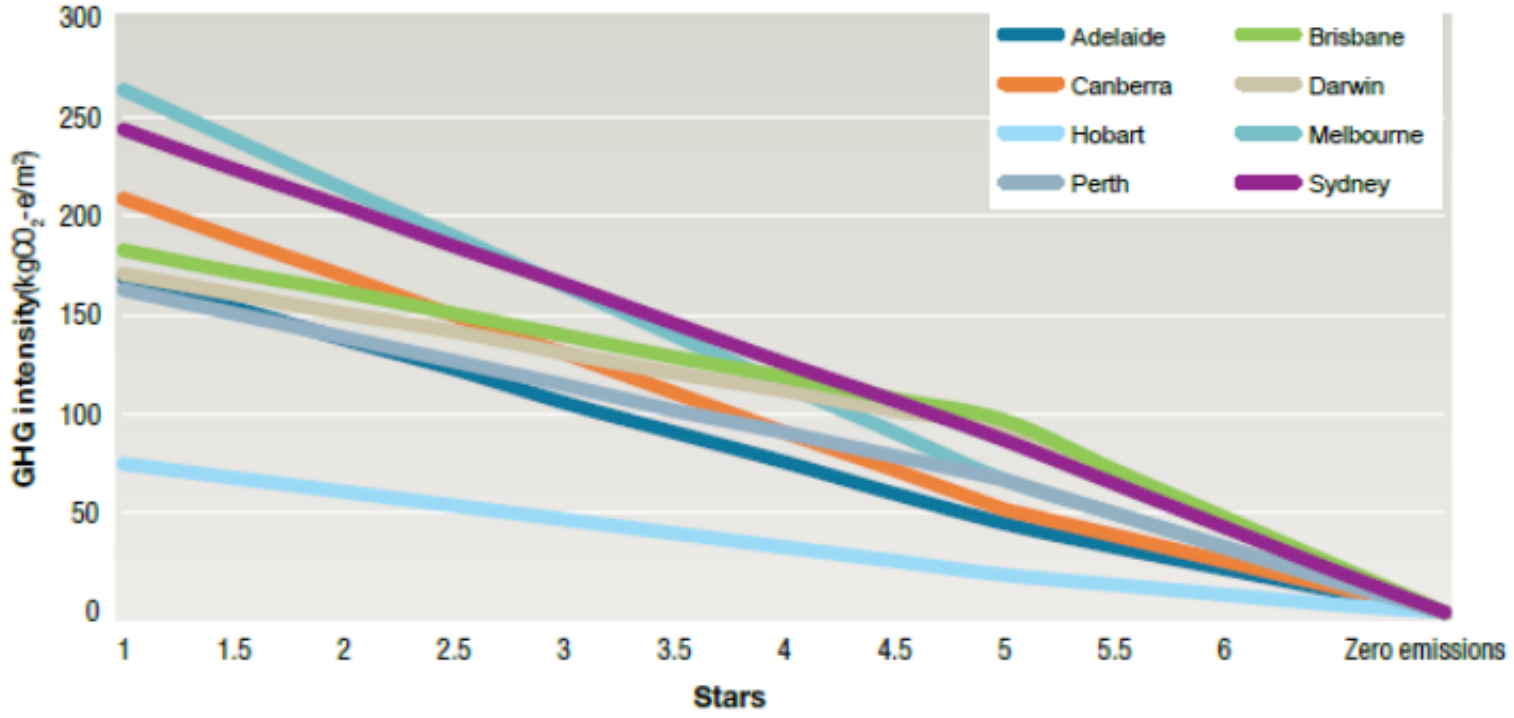
NABERS - energy



Sustainable Development

NABERS

TENANCY	Office space within a building covering tenant light and power only. This may include tenancy air-conditioning if this has been installed to service particular tenant loads, but does not include central services normally provided by the landlord
BASE BUILDING	Central services and common areas of a building
WHOLE BUILDING	A combination of the above which should include all energy entering the building used for providing services to the occupants in the space

Sustainable Development

NABERS

DATA	*TENANCY RATING*	*BASE BUILDING RATING*	*WHOLE BUILDING RATING*
Floor Area	Rated area of office space	Rated area of office space	Rated area of office space
Hours per week	Hours of occupancy	Hours of agreed service	Hours of occupancy
Computers	Number of computers in regular use	Not Applicable	Number of computers in regular use
Energy	Energy consumed by building occupants	Energy consumed by central services	Energy consumed by building occupants and central services
Location	Postcode	Postcode	Postcode

Sustainable Development

Commercial Building Disclosure Scheme

- The aim of the scheme is to ensure that credible and meaningful energy efficiency information is given to prospective purchasers and lessees of large commercial office space.

Sustainable Development

Commercial Building Disclosure Scheme

- The scheme requires owners and lessors of commercial office space with a net lettable area of 1,000 m² or more, to disclose the energy efficiency rating to prospective purchasers and tenants when the space is to be sold, leased or subleased..

Sustainable Development

Commercial Building Disclosure Scheme

- Start date ~ November 2010
- From 2011 - Disclose a Building Energy Efficiency Certificate (BEEC)
  - a NABERS Energy base building rating
  - a tenancy lighting assessment
  - energy efficiency guidance

Sustainable Development

Commercial Building Disclosure Scheme

- Disclose a Building Energy Efficiency Certificate (BEEC)
  - Valid 12 months
  - Must be current when disclosed
  - Registered online registry
  - a NABERS rating disclosed in any advertising

Sustainable Development

Council House 2

- **6 Star (Design)**
- $11.3 million sustainability features
  - purge windows, light harvesting devices, precast ceilings, timber shutters, precast exhaust ducts, solar hot water collectors, photovoltaic cells, chilled water cooling system, shading screens, co-generation plant, air conditioning and beams and slabs.
- $884/m² or 22.1 per cent of cost).

Sustainable Development

Council House 2

- **6 Star (Design)**
- The City of Melbourne estimates that the long-term savings from its new council offices in the CH2 building will pay for the green premium within 10 years. The premium is estimated to be about 22% of the construction cost of the building. However, this highlights the benefits for single tenants and owner-occupiers as opposed to the more typical scenario of multi-tenanted commercial buildings.

Sustainable Development

Council House 2

- **Payback period**
- It is estimated that in 10 years time the sustainability features will have paid for themselves.
- healthier staff – less time lost to colds, flu and other illnesses;
- increased workplace effectiveness;
- less costs for public domain and infrastructure; and
- the value of building as a guiding light in sustainable building.

Sustainable Development

Council House 2

- 6 Star design rating under Green Star, the following table shows the points possible and points awarded:

Category	Points Available	Points Awarded
Management	12	10
Indoor Environment Quality	26	20
Energy	24	16
Transport	11	9
Water	12	12
Materials	14	9
Land Use & Ecology	8	2
Emissions	13	9
Innovation (*not included in total*)	(*5*)	(*5*)
Total Points	**120**	**87**

Sustainable Development

- **UQ – Global Change Institute - 6 Star design rating under Green Building Council's Green Star system**
- $32 million building
- More than 15 major awards won for the building
- Ranked 34th in world's 50 most impressive environmentally friendly university building
- A living building - Global Change Institute - University of Queensland (uq.edu.au)
- Many design features that contributed to 6 Star Green Building Council rating no longer functioning

Sustainable Development

- www.gbca.org.au
  - Green Star rating tools
  - https://www.youtube.com/watch?v=vjPjSnX8JMY
- www.nabers.com.au
  - https://www.youtube.com/watch?v=eYb1jmPNJZY
  - https://www.youtube.com/watch?v=tX1SjZD-fnI
- www.cbd.gov.au
  - https://www.youtube.com/watch?v=HKD0QYLrEbU
  - https://www.youtube.com/watch?v=HKD0QYLrEbU&t=39s
-

Green Leases

- **What is a Green Lease?**

- A ‘green lease’ is a lease between the landlord and tenant which aims to ensure that the ongoing use and operation of the building minimises environmental impacts.

- A ‘green lease’ distinguishes itself from conventional leases in that it incorporates ecologically sustainable development (ESD) principles. These provide a framework under which both landlord and tenant can achieve and maintain energy efficiency and other sustainability goals throughout the lease term

Green Leases

- **Why have a Green Lease?**

- Since 2010 there has been a National Green Leasing Policy requirement for all new Commonwealth, State and Territory leases where the office space is more than 2000m^2 and the lease term is more than two years.

- The NGLP sought to generate energy and greenhouse gas savings by increasing the operational performance of buildings within the commercial office

Green Leases

- **Aim of the National Green Leasing Policy**

- Reduce the impact of buildings on the natural environment;
- Respond to adaptation challenges associated with climate change;
- Improve the cost effectiveness and efficiency in the use of office buildings;
- Enhance the health, well-being and productivity for occupants;
- Demonstrate Government leadership procurement and management of government office accommodation.

Green Leases

- There is no uniform model green lease that will be appropriate for every commercial premises. Like an ordinary lease, there is no one-size-fits-all model. However components of a green lease can be mixed and matched to suit the objectives and requirements of the parties.

- A green lease can include information about:

- **WHAT** are the environmental measures to be taken under the lease?
- **HOW** will the parties cooperate to achieve these measures?
- **WHO** will monitor compliance with those measures?
- **WHAT** happens if the targets are not met?

Green Leases

Five key elements of Green Leases:

- Target environmental performance standards
- Metering and data reporting requirements
- Environmental management plan
- Building management committee
- Remedial action / dispute resolution regime.

Green Leases

- **Target environmental performance standards**
- NABERS energy rating targets – base building rating and tenant's NABERS energy rating targets
  - Base building rating within 15 months of commencement
  - Annual base building rating renewals
  - Tenant to obtain "Tenant's NABERS" rating
- Water consumption – 4 star NABERS Water rating
- Indoor Environmental Quality – Green Star rating (not part of NGLP)
- **Metering and data reporting requirements**
- Metering
  - Building owner to provide base building energy metering and sub-metering

Green Leases

- **Environmental Management Plan**
- The EMP sets out the strategies, actions, activities, and timeframes to undertake agreed improvements and the responsibilities of the Building Management Committee. It facilitates upfront planning and provides clearly articulated responsibilities for all parties.
- **Building Management Committee**
- The Building Management Committee (BMC) acts as the vehicle for representatives of the government tenant and building owner to meet and discuss strategies, actions and provide recommendations and solutions to achieve and maintain their obligations.

Green Leases

- **Remedial Action/ Dispute Resolution**
- The focus of this Policy is the generation of environmental benefits, not the pursuit of punitive action. This Policy supports a collaborative and non-punitive approach to „prevention and rectification‟ in the case where obligations are not met.
- A Green Lease sets out a clear process for dealing with disputes, rating adjustments and remedial actions that may arise during the lease term.
- Green Lease must incorporate a jurisdiction specific Green Lease Schedule appended to the lease. This will facilitate the specification and delivery of obligations of building owner and government tenant

Questions?