



Australian Government  
Department of Climate Change  
and Energy Efficiency



# Energy efficiency and commercial buildings

## Wednesday May 11, 2011

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# Commercial Buildings and Energy Efficiency

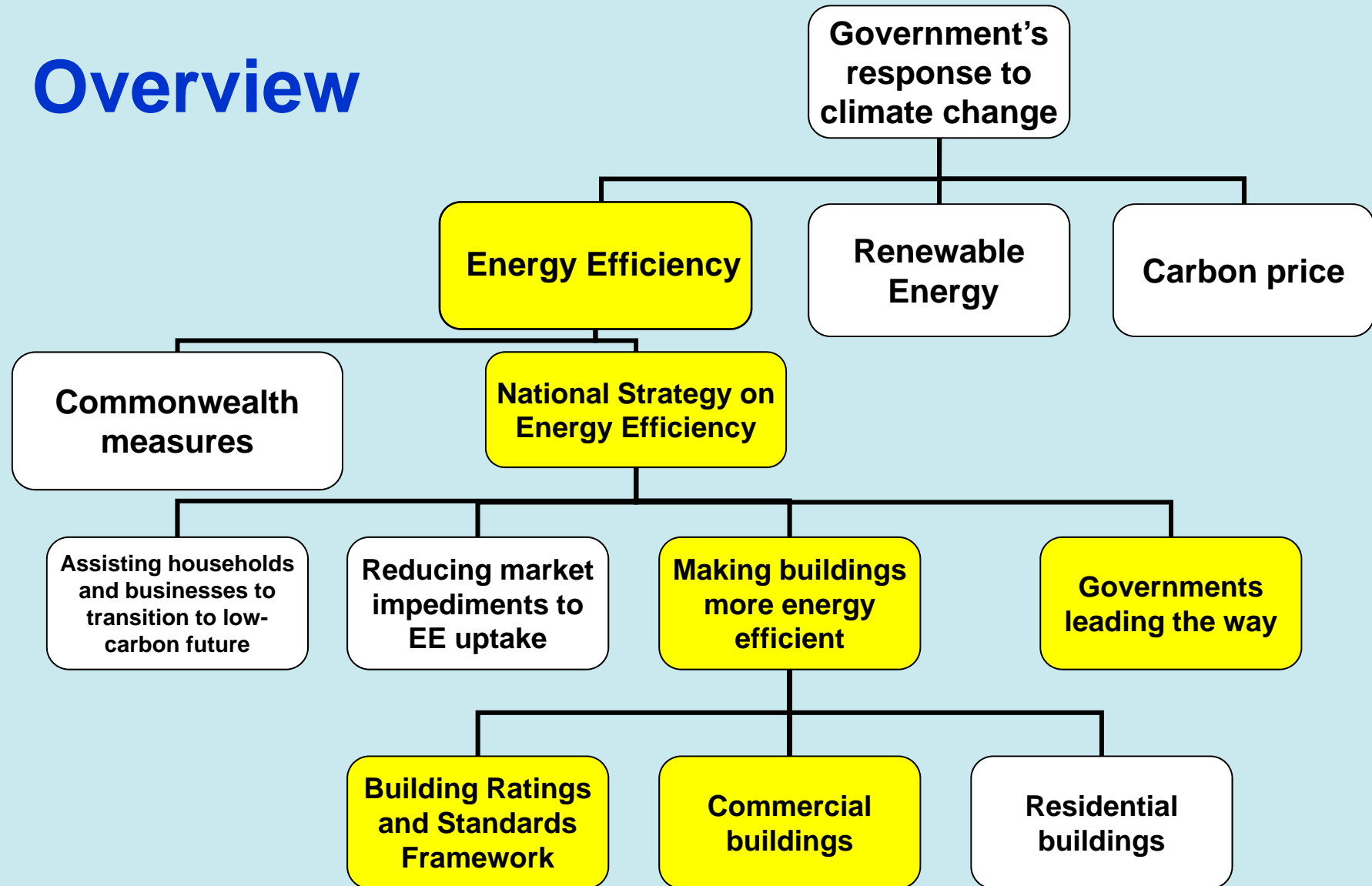
- Overview
- Why buildings are so important
- Abatement potential
- Barriers
- Characteristics
- CBD
- Green Leases
- NABERS Data Centre Tool



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# Overview



# Why are Buildings Important?

- Huge part of Economy
  - \$70+ bn on construction, \$25+ bn on renovations and maintenance
  - More than 700,000 employed
- 20-25% of National GHG emissions
  - Projected Increase of 75-150% to 2020
  - Significant low or zero cost abatement options
- People live and work here!
  - Complementarity



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# Barriers to Energy Efficiency in Buildings

- Externalities/Pricing
- Split Incentives (Tenant/Landlord)
- Information
- Culture/Practice
- Public vs Private Time Frames
- Utility Incentives



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# Commercial buildings sector Characteristics

|                                   | Commercial                               |
|-----------------------------------|--|
| Structures                        | Diverse                                  |
| Building and Management Expertise | Moderate - High                          |
| Numbers                           | Thousands                                |
| Typical Business Model            | Commercial Lease                         |
| Rating Systems                    | NABERS, GreenStar<br>(multiple versions) |



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# Near-Term Strategy

- In the near term, focus on finalising key measures under the NSEE with a view to completing the “Inform, Invest, Maintain” framework, especially:
  - Use the Framework to develop a predictable and regular system of increases in new building efficiency standards that reflect a greater/increasing percentage of energy use in buildings.
  - Complete implementation of Commercial Building Disclosure
  - Pursue more active development of Green Leases in the private sector to complement their operation in the public sector.

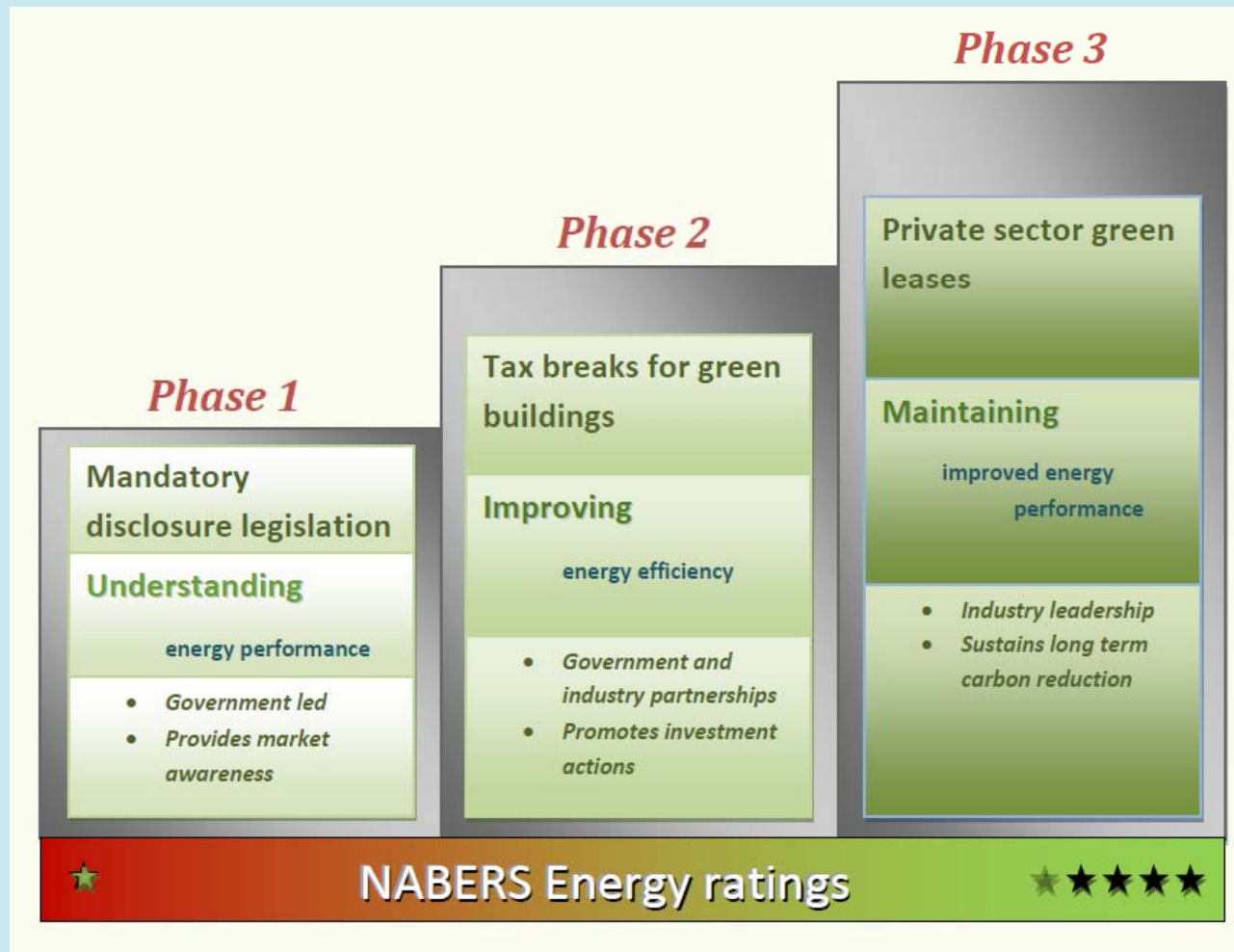


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# Commercial Buildings Partnerships



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**COMMERCIAL  
BUILDING DISCLOSURE**

A National Energy Efficiency Program

Commercial Buildings Disclosure  
Department of Climate Change and Energy Efficiency



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# Timeframes



**1 July 2010**

Legislation commenced



**1 Nov 2010**

Disclosure obligations commenced with transition period – only NABERS Energy ratings to be disclosed



**31 Oct 2011**

Transition period finished



**1 Nov 2011**

**Full BEECs to be disclosed**



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**COMMERCIAL  
BUILDING DISCLOSURE**

A National Energy Efficiency Program

# Program overview

- Commencing with offices over 2,000m<sup>2</sup> (NLA)
- Disclosure required at point of sale, lease and sublease
- Owners and lessors are required to:
  - register a Building Energy Efficiency Certificate (BEEC); and
  - include the NABERS Energy star rating in any sale, lease or sublease advertisements



# What has changed?

- Minister's Determination amended:
  - mixed use buildings with less than 75 per cent office space (NLA) and buildings which have undergone major refurbishments are considered as exceptions
  - owners of these buildings do not have to disclose energy efficiency ratings
  - came into effect on 29 November 2010 as interim measure
  - being reviewed by expert group



# Automatic exceptions

- Mixed use buildings with less than 75 per cent office space (NLA)
- New and refurbished buildings (certificate of occupancy less than 2 years old)
- Strata-titled offices
- Transfer of titles through the sale of shares or units of interest
- Short term leases for a period of less than 12 months
- Option to renew and extension of existing lease



# Tenancy lighting assessments

- Conducted by CBD accredited assessors
- Assessment rules currently being finalised
- Scheduled to be available for assessors at end of May 2011
- Provides indicative information on tenancy lighting energy efficiency + lighting controls



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# CBD assessors

- CBD Accredited Assessors will be able to:
  - undertake NABERS Energy ratings,
  - Tenancy Lighting Assessments, and
  - lodge applications for BEECs.
- To become a CBD Assessor, a person has to be a NABERS Assessor who has completed CBD training
- Expect to have CBD assessors available by end of July – subject to passing training



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# Enforcement

- Education, Compliance and Enforcement Policy
- Court can order payment of a civil penalty of up to \$110,000 for first day of non-disclosure
- Department can issue infringement notices
- Non-disclosure register – listing of people who commit two or more offences in 12 months
- Department will monitor advertisements and transactions



# Green Leases floating in a Sea of Change

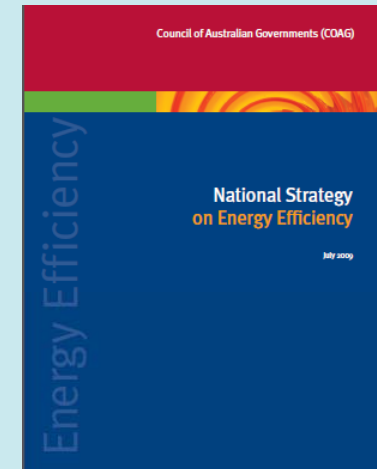


# What we have been doing?

## ■ Development of the National Green lease Policy

Drivers:

- National Strategy on Energy Efficiency
- National Framework on Energy Efficiency



**National Framework**  
for Energy Efficiency



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| Measure   | Key elements   | Indicative pathway  | Implementation responsibility  |
|---|--|---|--|
| <p><b>4.1.1</b> Governments to significantly improve the environmental performance of the buildings they own or occupy.</p> | <p>a. Develop initiatives which demonstrate leadership to significantly increase the performance of the buildings governments own or occupy.</p> | <p>Australian, state and territory Governments jointly develop jurisdictionally appropriate policy approaches, noting many jurisdictions already have programs/targets.</p> <p>Progress report to be provided to National Strategy on Energy Efficiency (NSEE) senior officials in 2011 to enable sharing of lessons learned.</p> | <p>All jurisdictions</p>   |
|   | <p>b. Promote the use of energy performance contracting to upgrade government buildings.</p>   | <p>All governments to continue to promote and make use of energy performance contracting as appropriate.</p> <p>Progress report to be provided to NSEE senior officials in 2011 to enable sharing of lessons learned.</p>   | <p>All jurisdictions</p>   |
|   | <p>c. Develop and implement a National Green Lease Policy for Government buildings.</p>  | <p>Ministerial Council on Energy (MCE) and the Australian Procurement and Construction Ministerial Council (APCMC) jointly developing a detailed green lease policy framework in 2009–10 for considerations by governments, with implementation of the agreed policy by individual governments in 2010–2011.</p>                  | <p>Ministerial Council on Energy and Australian Procurement and Construction Ministerial Council</p> |



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# National Green Lease Policy

- Ministerial Council on Energy



- Australian Procurement and Construction Council



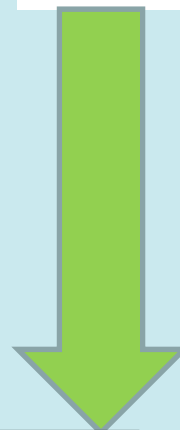
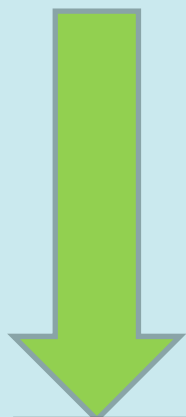
# The players



**National Framework**  
for Energy Efficiency



Government Property Group



National Green Lease Steering  
Committee



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# NGLS OBJECTIVE

- To use government leasing to drive a reduction in the environmental impact of buildings through improved operational performance.



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# AIMS

For both the government tenant and the building owner, the National Green Leasing Policy promotes

- an understanding of and a commitment to environmental improvement in the leasing of buildings. In conjunction with the Green Lease Schedule templates,
- formalises the obligations of building owners and government tenants.
- establishes an effective and consistent framework across jurisdictions while maintaining sufficient flexibility to accommodate different requirements in different jurisdictions.



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# NGLP :Principles

- 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.



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# The Commonwealth prospective ....

Will require a revised Energy Efficiency in Govt Operations (EEGO) Policy change

Major Policy Changes considerations:

- Possibly changing from 8 templates down to at least 2 templates
- Optional clauses for Green Star
- Green power allowance up to 1 star towards NABERS (existing buildings)
- Building Management Committee



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# Where to from here?

- Awaiting NGLP approval from APCC
- Endorsed NGL policy ready for consideration by Governments to adopt
- About to commence:
  - Green Lease Survey
  - EEGO policy external review
- Formulation of options for revised GLS
- IDC

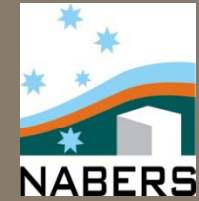


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# NABERS Energy for Data Centres



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# Introduction

- **Goals for the project**
- **Project scope & progress to date**
- **How NABERS Energy for Data Centres may be used**
- **Integration of NABERS Energy for Data Centres with policy for Government**



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# Goals for NABERS Energy for Data Centres

- Provide a method for rating the majority of data centres in Australia
- Allow comparison with other rated data centres or a benchmark of individual performance over time
- To encompass IT workload efficiency as well as facilities (broader than PUE)



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# Power Usage Effectiveness

$$\text{PUE} = \frac{\text{Total facility power}}{\text{IT equipment power}}$$



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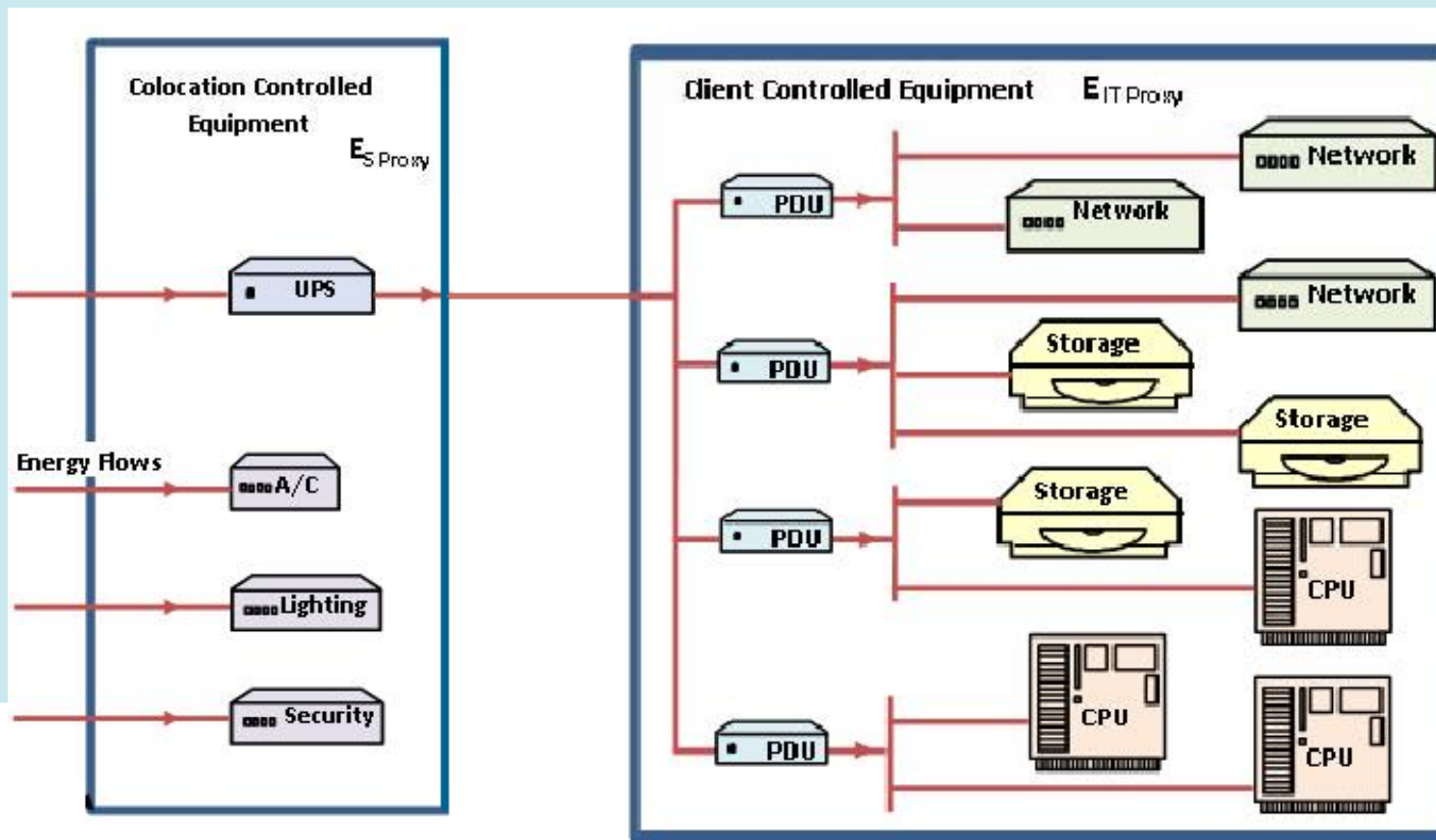
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# Power Usage Effectiveness

- **Power usage effectiveness (PUE)** is a measure of how efficiently a computer [data center](#) uses its power; specifically, how much of the power is actually used by the computing equipment (in contrast to cooling and other overhead).
- PUE is the ratio of total amount of power used by a computer [data center](#) facility to the [power](#) delivered to computing equipment. PUE was developed by a consortium called [The Green Grid](#). PUE is the inverse of [Data Center Infrastructure Efficiency](#) (DCiE).
- 
- An ideal PUE is 1.0. Anything that isn't considered a computing device in a data center (i.e. Lighting, Cooling, etc.) falls into the category of facility power usage.
- So, total facilities includes all air conditioning, and UPS power etc and all of the IT equipment power.



# Project Scope



# Development of NABERS Energy for Data Centres

Joint initiative between NSW DECCW & Federal Govt (DCCEE)

Technical  
Advisory  
Group

Provide  
technical  
input and  
strategic  
advice and  
direction

Market research & analysis

Data gathering and analysis

Development of Methodology and Benchmarks

Rules for collecting data

← We are here

Assessor training

Data centre ratings



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# Next steps

- Finalise Rules for collecting data and Methodology docs (estimated at June '11)
- Launch rating tool in 2011/12
- Train NABERS Assessors to conduct assessments of data centres



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# Nabers Energy for Data Centres

Joint NSW DECCW and Australian Government DCCEE



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Thank you



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