



# NSW Government Resource Efficiency Policy

For a resource productive public sector with less impact on the environment



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Cover photo: View of 2–10 Valentine Avenue, Parramatta, a building leased by the NSW Government with a 5-Star NABERS Whole Building Energy rating. Fili Thompson/OEH

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**The Hon. Gabrielle Upton MP**  
**Minister for the Environment**

## Foreword

**Our vision is for a resource productive public sector that provides better services to the NSW community with less impact on the environment.**

The NSW Government Resource Efficiency Policy was introduced in 2014. It has helped to cut NSW Government expenditure on energy, water and waste, reducing impacts on our economy, environment and community. For example, agencies have implemented 491 energy efficiency projects in the first five years under this policy, generating total bill savings of \$10.5 million.

Costs and impacts can be further reduced by adopting simple and cost-effective technologies and practices. By leading the way, the NSW Government is also making resource-efficient products and services more accessible and affordable to households and businesses of New South Wales.

This policy contributes to the Premier's Priorities and the State Priorities and delivers commitments under the NSW Climate Change Policy Framework and the State Infrastructure Strategy.

I commend all agencies of the NSW Government for their efforts in increasing our resource efficiency and encourage local government, state-owned corporations, public trading enterprises and public financial enterprises to also adopt this policy's approach.

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## Photos

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# Introduction

The aim of the NSW Government Resource Efficiency Policy (GREP) is to reduce the NSW Government's operating costs and lead by example in increasing the efficiency of its resource use.

The policy will continue to drive resource efficiency by NSW Government agencies in four main areas – energy, water, waste and air emissions from government operations.

This policy will ensure NSW Government agencies:

- meet the challenge of rising costs for energy, water, clean air and waste management
- use purchasing power to drive down the cost of resource-efficient technologies and services
- show leadership by incorporating resource efficiency in decision-making.

The GREP was introduced in 2014 and reviewed in 2018 to take into account implementation challenges, technology development and market trends.

This policy applies to all general government sector agencies. For agencies with fewer than 100 employees, the implementation of and reporting on this policy is voluntary.

Local government, state-owned corporations, public trading enterprises and public financial enterprises are encouraged to adopt this policy's approach.

Agencies will monitor and report on their performance against this policy. They are strongly encouraged to publish their annual statements via the centralised web tool (CASPER).

The Office of Environment and Heritage will coordinate the delivery of this policy, publish its results and carry out its next review in 2020.



# Overview

This policy's measures, targets and minimum standards will drive resource efficiency where significant opportunities for savings have been identified for energy, water, waste and clean air.

## Energy

- E1: Target to save energy across all government sites
- E2: Minimum NABERS Energy ratings for offices and data centres
- E3: Minimum standards for new electrical appliances and equipment
- E4: Minimum standards for new buildings and fit-outs
- E5: Whole-of-government solar target
- E6: Minimum fuel efficiency standards for new light vehicles
- E7: Purchase 6% GreenPower

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*The Energy Measures ensure all agencies have energy-efficient buildings, vehicles, appliances and equipment, and make use of renewable energy, including solar power at government sites.*

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## Water

- W1: Report on water use
- W2: Minimum water standards for office buildings
- W3: Minimum standards for new water-using appliances

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*The Water Measures ensure all agencies have water-efficient buildings and appliances, and continually improve their water efficiency.*

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## Waste

- P1: Report on top three waste streams

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*The Waste Measure ensures all agencies are aware of the waste they produce, and continually improve their waste efficiency.*

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## Clean air

- A1: Air emission standards for mobile non-road diesel plant and equipment
- A2: Low-VOC materials

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*The Clean Air Measures ensure all agencies use and promote mobile non-road diesel engines with low emissions and use low-VOC materials.*

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## Energy

NSW Government agencies own and operate facilities and infrastructure that use about 1800 gigawatt hours (GWh) of electricity each year or around 2.7% of NSW electricity sales. In 2016–17, the Government spent \$265 million on electricity. Energy efficiency and onsite renewable energy projects can reduce cost pressures associated with the rising costs of energy. The NSW Government will lead by example in adopting cost-effective products and services and help make them more available to businesses and the broader community.



### E1 Target to save energy across all government sites

By 2023–24, all agencies must either:

- implement energy savings projects at each of their eligible sites
- achieve aggregate energy savings of at least 10%.

#### Coverage

Eligible sites for energy upgrades are all sites owned or leased by agencies, except:

- very small sites that consume less than 36,000 MJ of energy per year
- all sites that fall into the bottom 10% of annual energy use of all agency sites with a consumption of more than 36,000 MJ of energy per year
- sites where agencies plan to cease occupation within five years and which do not have any feasible energy efficiency projects that would deliver a return in this timeframe
- all sites for which agencies can demonstrate that there are no energy efficiency upgrades available with an internal rate of return of at least 12%.

Alternatively, agencies may opt to achieve aggregate savings of at least 10% of energy use across their whole portfolio.

#### Implementation

Agencies must create a plan to undertake projects for all sites covered by this measure or to achieve aggregate savings of at least 10%.

This plan must be submitted to the Office of Environment and Heritage by November 2019 and include broad



information on how agencies will achieve improved energy efficiency. Clusters may choose to plan centrally and submit one cluster plan.

The baseline is 2012–13 unless an agency chooses a later year as its baseline. Calculations of progress will take into account changes in each agency's site portfolio.

The Office of Environment and Heritage will create a template that agencies may choose to use for their plans. Appendix B provides guidance on how to identify eligible sites and how to adjust the baseline.

Energy use includes the total electricity, natural gas and LPG used, measured in or converted to MJ.

Eligible sites will be deemed to comply with this measure if they are:

- sites that have already completed energy efficiency projects since 2012–13, which resulted in at least 10% reduction in billed energy use
- sites that have installed solar photovoltaics (PV) since 2012–13, which resulted in or contributed to at least 10% reduction of billed energy use and were completed before 1 January 2019
- sites that meet the standards of Measures E2 or E4.

From 1 January 2019, solar PV installations will count exclusively towards Measure E5 instead of this measure.

Agencies will be able to apply for loans for energy efficiency projects from the Government Finance Facility (GFF). The Office of Environment and Heritage will develop proposals to streamline the application process and reduce approval times together with Treasury, and support agencies accessing loans.

Based on site-specific initiatives by agencies, Property NSW is available to implement energy efficiency upgrades at government-owned sites, if GFF or other funding is available and upgrade costs incurred by Property NSW can be recovered from efficiency gains. The same applies to sites where government is a major/sole tenant and the landlord agrees to the upgrades.



## **E2 Minimum NABERS Energy ratings for offices and data centres**

Owned and leased office buildings will achieve and maintain a NABERS Energy rating of at least 5 stars by June 2020. Leased office buildings in areas outside Sydney, Wollongong and Newcastle, and data centres, will achieve and maintain at least 4.5 stars by June 2020.

## Coverage

Owned and leased office buildings and data centres

## Implementation

The following minimum NABERS Energy ratings for offices and data centres will be achieved and maintained by June 2020 or within 18 months of first occupancy.

**Table 1 Minimum NABERS Energy ratings for offices and data centres**

Type of building	Location	Type of rating	Star rating
Owned office buildings >1000 m <sup>2</sup> (net lettable area)	All of NSW	Base Building (or Whole Building <sup>^</sup> )	5 Star NABERS (without GreenPower)
		Tenancy	
Leased office space* >1000 m <sup>2</sup> (net lettable area)	Sydney, Wollongong, Newcastle	Base Building (or Whole Building <sup>^</sup> )	5 Star NABERS (without GreenPower)
		Tenancy	
	Rest of NSW	Base Building (or Whole Building <sup>^</sup> )	4.5 Star NABERS (without GreenPower)
		Tenancy	
Data centres <sup>+</sup>	All of NSW	Infrastructure and IT Equipment	4.5 Star NABERS (without GreenPower)

\* Green Lease targets must be included in all new and renewed lease transactions where NSW Government will occupy a total of at least 4000 m<sup>2</sup> of office space in a single building for a minimum three-year lease term for ongoing compliance.

<sup>^</sup> Agencies will get a Whole Building rating if there is no separation of base building and tenancy services in an existing building and where it is technically not possible for agencies to get a separate Base Building and Tenancy rating under the NABERS rules.

<sup>+</sup> Only data centres suitable for a NABERS Energy rating based on their energy consumption are covered by this measure (see NABERS Rules at [www.nabers.gov.au/publications/nabers-energy-data-centres-rules](http://www.nabers.gov.au/publications/nabers-energy-data-centres-rules)).

Property NSW will assist agencies to implement this measure by:

- reviewing and updating the Green Lease toolkit to include provisions to help meet a NABERS Energy Tenancy rating of at least 5 stars
- requiring upgrades to tenancy lighting to 5 W/m<sup>2</sup> or better for any leased space that is shown by a Tenancy Lighting Assessment to be over 10 W/m<sup>2</sup>

- managing the assessment of NABERS Energy Base Building and Whole Building ratings for office buildings that are owned by the NSW Government
- negotiating commercial efficiency upgrade arrangements or Environmental Upgrade Agreements.

If a data centre run by an agency cannot be migrated to a Department of Finance, Services and Innovation centralised data centre, and if its energy rating cannot be improved to meet 4.5 stars, the agency should optimise the data centre's energy efficiency in its setup and operation.

Agencies with large portfolios of other building types are encouraged to develop their own energy performance benchmarking system to help improve energy management practices.

The Office of Environment and Heritage and Property NSW will:

- publish a list of government-owned and leased buildings and data centres by agency and NABERS Energy rating each year
- provide a streamlined whole-of-government tenancy rating pathway which includes co-assessments and other cost reductions.

### Energy efficiency considerations for hotel bookings

The Office of Environment and Heritage will engage with NSW Procurement, NABERS and the hotel sector to consider introducing energy efficiency criteria in NSW Government hotel bookings.



## E3 Minimum standards for new electrical appliances and equipment

All new electrical equipment purchased by government must be at least 0.5 stars above the market average star rating or comply with high efficiency standards specified by this measure.

### Coverage

All agencies

### Implementation

Appliances and equipment purchased in the following categories with star ratings under the Greenhouse and Energy Minimum Standards (GEMS) will be at least the following:

- refrigerators – 2.5 stars
- clothes dryers (up to 10 kg) – 3 stars
- washing machines – 3.5 stars
- dishwashers – 4 stars
- pool pumps – 7.5 stars
- fridge/freezers – 3.5 stars
- freezers – 3 stars
- air-to-air heat pumps and air-conditioners – 4 stars if less than 4 kW and 3 stars if greater than 4 kW (applies to both heating and cooling for reverse cycle air-conditioners)
- televisions – 5 stars (Tier 2 rating).

Commercial and industrial-sized clothes dryers (above 10 kg capacity) should aim for high efficiency but will be excluded from this benchmark if there are insufficient models available above the market average.

Equipment purchased in the following categories will have an ENERGY STAR® label recognising its high efficiency:

- computers (i.e. desktops, notebooks and tablets, workstations, small-scale servers and thin clients)
- printers
- photocopiers
- DVD players.

Equipment purchased in the following categories will meet the definition of 'high efficiency' under GEMS:

- refrigerated commercial display cabinets – AS1731.14
- distribution transformers – AS2374.1.2
- electric motors – AS1359.5<sup>1</sup>
- external power supplies – AS4665.2.

Equipment purchased in the following categories will meet the following performance benchmarks:

- air-cooled liquid chilling packages – IPLV of 5.1
- water-cooled liquid chilling packages – IPLV of 9.6
- closed-control air-conditioners – AEER of 3.3.

The Office of Environment and Heritage and Property NSW will publish an annually updated guidance note, outlining minimum energy efficiency appliance standards for agencies.

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<sup>1</sup> To be replaced by new standard, likely to be effective by mid-2019.



## E4 Minimum standards for new buildings and fit-outs

All new facilities, including office buildings, fit-outs and other building types with project costs over \$10 million, will achieve and maintain minimum NABERS Energy and Green Star ratings, or be designed to these standards, as specified by this measure.

### Coverage

All construction projects for new and refurbished buildings

### Implementation

The following minimum standards apply to all newly constructed facilities above 1000 m<sup>2</sup> and with project costs over \$10 million. Official ratings must be achieved and maintained by all new office buildings, office fit-outs and data centres for NABERS Energy and Green Star.

**Table 2 Minimum NABERS Energy and Green Star standards for new buildings**

Type of building	Location	Type of rating	NABERS rating <sup>#</sup>	Green Star rating <sup>*</sup>
New facilities >1000 m <sup>2</sup> (net lettable area) and >\$10 million	Sydney, Wollongong, Newcastle	Base Building	5 Star <sup>+</sup> (without GreenPower)	5 Star Design & As-built
		Tenancy		5 Star Interiors
				4 Star <sup>^</sup> Performance
	Rest of NSW	Base Building	4.5 Star <sup>+</sup> (without GreenPower)	4 Star Design & As-built
Tenancy		4 Star Interiors		

<sup>#</sup> Facilities eligible for NABERS Energy ratings relevant for government sites, i.e. offices, data centres and apartments.

<sup>\*</sup> Facilities that are not offices or data centres (>1000 m<sup>2</sup>), and small office tenancy fit-outs (between 1000 m<sup>2</sup> and 5000 m<sup>2</sup>) must be designed to this Green Star standard. Certification is not mandatory but encouraged.

<sup>+</sup> Landlords (developers) and tenants are required to sign a NABERS Energy and Water commitment agreement for these targets. Once the first official rating is achieved, ratings must be obtained annually prior to the expiry of current rating certificates.

<sup>^</sup> Landlords are required to obtain this Green Star rating within two years after full occupancy is achieved in the leased space and maintain the rating throughout the lease tenure, where NSW Government leases 15,000 m<sup>2</sup> or more in a single building.

Agencies will align their projects with minimum standards for new and refurbished buildings in the National Construction Code<sup>2</sup>.

A NSW Government Green Lease schedule and targets must be included in all lease transactions, implemented and monitored where the NSW Government will occupy at least 4000 m<sup>2</sup> in a single building for a minimum three-year lease term.

Agencies will incorporate the new minimum standards into contract specifications for new building projects.

Detailed requirements for new building projects can be found in a guidance note available at Property NSW. Property NSW will assist agencies to develop specifications for fit-out lighting.

The Office of Environment and Heritage, in consultation with Property NSW, will maintain a record of NABERS ratings of office buildings and tenancy fit-outs constructed by the NSW Government.

### **Electric vehicles infrastructure**

Agencies should consider fitting all new and refurbished government sites with car parking facilities with electrical conduit and placement for future provision of electric vehicle charging infrastructure.

For projects implementing electric vehicle charging infrastructure, agencies should consider including onsite renewable energy installations in the construction to offset additional electricity likely to be consumed. Agencies can also consider purchasing additional GreenPower energy if onsite renewable energy generation is not feasible. Electric vehicle charging circuits should have their own independent switchboard with a utility grade pattern approved interval data meter, to allow charging electricity costs to end-users and to exclude the respective electricity consumption when assessing for NABERS Energy ratings.



## **E5 Whole-of-government solar target**

Agencies will plan and execute the installation of solar PV on suitable sites to implement the NSW Government's solar target of 25,000 MWh per year by 2021 and 55,000 MWh per year by 2024. This target corresponds to a solar PV capacity of about 18 MW (2021) and 40 MW (2024).

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<sup>2</sup> The National Construction Code 2019 includes a NABERS Energy verification method and will take effect on 1 May 2020. A preview is available at <https://ncc.abcb.gov.au>.



## Coverage

All agencies

## Implementation

Agencies must create a plan on how they will contribute to the whole-of-government target and how they will implement solar energy opportunities on their sites and submit it to the Office of Environment and Heritage by November 2019.

The Office of Environment and Heritage has set up pre-qualified panels of solar PV providers to help agencies enter into solar Power Purchase Agreements (PPAs) or to directly invest in solar installations. Having access to these panels will give agencies flexibility to choose the most appropriate way to incorporate solar at their sites, and to mitigate financial and other risks. Agencies can also apply for a loan from the Government Finance Facility or make their own arrangements.

Sites on both small site and large site contracts should be considered. Agencies may use the following checklist as a starting point to prioritise sites to be assessed for the installation of solar PV panels:

- sites to be owned or leased for at least the next five years
- sites with daylight operations for at least 40 weeks per year
- sites with at least 50 m<sup>2</sup> of unshaded, preferably northerly aspect roof
- sites with average electricity consumption greater than 10,000 kWh per year.

The Office of Environment and Heritage will also provide general guidance and a solar financing tool to help agencies determine which sites to prioritise.

Agencies can further refer to a guidance note on rooftop solar PV systems available at Property NSW for recommended minimum warranties, financial and other considerations.

Local government can also access the pre-qualified panels of solar PV providers established by the Office of Environment and Heritage; however, solar installations at council-owned sites will not count towards the NSW Government's solar target.

Solar PV installed on government sites from July 2015 will be counted towards the target. The Office of Environment and Heritage will assess plans submitted and monitor progress achieved by agencies.



## E6 Minimum fuel efficiency standards for new light vehicles

Improve minimum fuel efficiency standards for new light vehicles so that the average NSW Government purchase is at least the market average fuel efficiency by vehicle category by June 2020. In addition, from 2020–21, 10% of new general purpose passenger fleet cars purchased or leased by agencies are to be electric or hybrid vehicles, consistent with the NSW Electric and Hybrid Vehicle Plan.

### Coverage

All light vehicles owned or leased by agencies

### Implementation

The Office of Environment and Heritage will recommend scheme limits for each light vehicle category.

In consultation with the Office of Environment and Heritage, and Transport for NSW, NSW Procurement will amend the NSW Government's Motor Vehicles Prequalification Scheme (SCM0653) each year to improve fuel efficiency by reducing the maximum allowable grams of greenhouse gas per kilometre (gCO<sub>2</sub>/km) for each light vehicle category.

NSW Procurement will further:

- publish minimum standards for each vehicle category to enable other organisations to adopt NSW Government standards
- continue to encourage purchases of fuel-efficient and electric vehicles by including them in the Approved Vehicle List
- collect data on vehicle sales and leases to government agencies from suppliers and lessors and publish this data annually.

## E7 Purchase 6% GreenPower

Purchase a minimum of 6% GreenPower.

### Coverage

All general government sector agencies except NSW Local Health Districts

### Implementation

The 776 and 777 government electricity contracts include 6% GreenPower as a default.



Where agencies purchase electricity outside Contracts 776 and 777, specifications to purchase a minimum of 6% GreenPower are to be applied.

The Department of Finance, Services and Innovation will provide data to the Office of Environment and Heritage and agencies on total GreenPower purchased by agencies.

Agencies not using government contracts for electricity will report on the percentage of GreenPower purchased.

The purchase of GreenPower does not count towards the whole-of-government solar target of Measure E5.



## Water

The NSW Government uses over 26 billion litres of water each year. In 2015–16, the Government spent \$137 million on water. By installing efficient water infrastructure and appliances, the NSW Government can become more resilient to future water shortages, while leading by example in the procurement of water-efficient products. Reporting on water use, setting targets to reduce water and applying minimum standards for buildings and appliances will ensure the NSW Government is playing its part in securing the state's water resources.



### W1 Report on water use

All agencies will report on water use. They are strongly encouraged to set targets to reduce water use.

#### Coverage

All agencies

#### Implementation

Agencies will report on water use where data is available from agency-held accounts.

They will provide the Office of Environment and Heritage with water meter numbers from NSW Government-owned sites in Sydney, the Hunter and the Central Coast.

Agencies are strongly encouraged to set water use stabilisation or reduction targets.

The Office of Environment and Heritage will create a template that agencies may choose to use for their plans to reduce their water use. They are encouraged to provide such plans to the Office of Environment and Heritage.

The Office of Environment and Heritage and Property NSW will:

- work with water companies and regional councils to gather consistent information available on water use
- support agencies installing smart water meters and data loggers for leak detection
- help develop and deliver coordinated leak detection programs on their sites, partnering with Sydney Water and Hunter Water
- help define water consumption baselines for each cluster.



## W2 Minimum water standards for office buildings

All office buildings with a net lettable area of over 1000 m<sup>2</sup> will generally achieve a NABERS Water rating of 4 stars.

### Coverage

All owned and leased office buildings

### Implementation

Agencies will incorporate a minimum water performance of 4 Star NABERS into contract specifications for the construction and refurbishment of office buildings with a net lettable area of over 1000 m<sup>2</sup>.

Property NSW will require all new and renewed leases of at least three years duration, where the NSW Government occupies at least 4000 m<sup>2</sup> net lettable area in a single building, to include a Green Lease schedule that requires an annual NABERS Water rating, achieving at least 4 stars.

For the purposes of this measure, refurbishment projects only include projects where the majority of water-consuming building plant (e.g. cooling towers) and bathroom fixtures (e.g. toilets) will be replaced. Refurbishment projects are exempt from this measure if agencies demonstrate that achieving a 4 Star NABERS Water rating would have an internal rate of return of less than 12%.

The Office of Environment and Heritage and Property NSW will publish a list of government-owned and leased buildings by agency and NABERS Water rating annually.



## W3 Minimum standards for new water-using appliances

All new water-using appliances purchased by agencies must be at least 0.5 stars above the average Water Efficiency Labelling and Standards (WELS) star rating by product type, except toilets and urinals, which must be purchased at the average WELS star rating.

### Coverage

All agencies

### Implementation

Appliances and equipment purchased in the following categories with star ratings under the WELS scheme will be at least:

- showerheads – 3.5 stars
- toilets and urinals – 4 stars
- washing machines – 4.5 stars
- dishwashers – 5 stars
- taps and flow controllers – 5 stars.

The Office of Environment and Heritage and Property NSW will publish an annually updated guidance note, outlining minimum water efficiency appliance standards for agencies.





## Waste

The NSW Government is sending several hundred thousand tonnes of waste to landfill each year. Diverting waste from landfill delivers savings of \$141 per tonne in the Sydney Metropolitan Area.<sup>3</sup> Annual reporting of waste to landfill will help save the Government money through encouraging strategies to reduce waste volumes and costs, encouraging improved recycling practices across all waste streams.

### P1 Report on top three waste streams

All agencies will report on their top three waste streams by both total weight and total cost. They are strongly encouraged to take measures to reduce waste.



#### Coverage

All agencies

#### Implementation

Agencies will use integrated waste management under Contract 9698 and source information on their top three waste streams by both total weight and total cost from their waste contractors.

If reliable data is not available, agencies will demonstrate their actions to make data available.

Where feasible, the baseline is 2013–14 to acknowledge inclusion of reporting on new waste streams.

HealthShare NSW, with advice from the Office of Environment and Heritage and Property NSW, will draft and negotiate standard clauses for data provision and responsibilities for waste contractors. Property NSW will do the same for cleaning contractors.

Agencies will include waste data provisions in lease arrangements for tenancies.

Property NSW will consider including requirements for NABERS Waste ratings in Green Lease schedules, where cost-effective.

Agencies are strongly encouraged to set waste reduction targets.

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<sup>3</sup> The Waste and Environment Levy for the Sydney Metropolitan Area and Extended Regulated Area is \$141.20 per tonne for 2018–19 and does not include gate charges. The levy for the Regional Regulated Area is \$81.30 per tonne for 2018–19.

The Office of Environment and Heritage will encourage best practice across government by publishing examples of excellence in waste management annually online, and by creating a template that agencies may choose to use for waste reduction plans. They are encouraged to provide such plans to the Office of Environment and Heritage.

Agencies are encouraged to continually improve their waste efficiency through:

- removing desk bins and sorting waste into streams
- creating an agency-specific waste reduction plan to target key waste streams that can be reduced or redirected from landfill
- improving separation of recyclable materials out of the general waste stream (e.g. organics, clean natural excavated material)
- introducing paper reduction targets and electronic file management systems
- recycling waste products where there is access to a national voluntary stewardship scheme
- waste management audits where cost-effective
- ensuring problem wastes, such as paints, oils, batteries, gas bottles and smoke detectors are collected and managed separately to avoid contaminating other waste streams
- participating in product stewardship schemes, where appropriate, such as the National Television and Computer Recycling Scheme
- using guidance tools including the Waste Management Guidance available at Property NSW, the [Better Building Partnerships' Stripout Waste Guidelines](#) and the [Environment Protection Authority's \(EPA\) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities](#).

Agencies are encouraged to help drive growth and innovation in the market for recycled and sustainably sourced material by purchasing:

- construction materials with recycled content to comply with relevant EPA exemptions and reference design specifications for re-use (such as the specifications from the Institute of Public Works Engineering Australasia for pavements, earthworks and drainage)
- copy, stationery and print publication paper with post-consumer recycled content as defined under AS14021 or certified as lifecycle carbon reduced under the National Carbon Offset Standard
- non-recycled paper from sustainable sources accredited under the Programme for the Endorsement of Forest Certification (PEFC), Forest Stewardship Council (FSC) or equivalent.



## Clean air

The annual health cost of air pollution in the Sydney Greater Metropolitan Region has been estimated at \$6.4 billion.<sup>4</sup> Diesel and volatile organic compound (VOC) emissions contribute significantly to air pollution in New South Wales and there are major health and economic gains to be made from their reduction. This policy uses targeted procurement standards to assist in reducing emissions and improving air quality.



### A1 Air emission standards for mobile non-road diesel plant and equipment

Agencies will comply with European Union (EU) or United States Environmental Protection Agency (US EPA) standards when purchasing or leasing non-road diesel plant and equipment. They will consider air emissions from contractor-supplied non-road diesel plant and equipment in tender processes for new buildings and infrastructure.

#### Coverage

All agencies purchasing, leasing or contracting non-road diesel plant and equipment

#### Implementation

This measure applies to:

- mobile non-road diesel plant and equipment with engines greater than 19 kW
- new and used mobile non-road diesel plant and equipment purchased or leased by agencies
- procurement of contractor-supplied mobile non-road diesel plant and equipment in new buildings and infrastructure.

The minimum performance standard for mobile non-road diesel plant and equipment purchased or leased by agencies must be:

- US EPA Tier 4 or EU Stage IIIA/IIIB/IV compliant (depending on engine size, see Appendix C)

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<sup>4</sup> *Air Pollution Economics: Health Costs of Air Pollution in the Greater Sydney Metropolitan Region*, report prepared for the NSW Department of Environment and Conservation by G Morgan, B Jalaludin & V Sheppard, November 2005 – adjusted to 2015 costs using Reserve Bank of Australia Inflation Calculator.

- US EPA Tier 4 or EU Stage V compliant from 2021 or 2022 (depending on engine size, see Appendix C).

For contractor-supplied plant and equipment in new buildings and infrastructure<sup>5</sup>:

- procurement contracts requiring the use of mobile non-road diesel plant and equipment will require reporting of engine conformity with relevant US EPA, EU or equivalent emission standards and the fitting of any exhaust after-treatment devices
- the tender selection process will incorporate a weighting for air emission standards in conjunction with other environmental considerations to ensure it is factored into the selection process, and apply a consistent weighting to preference the lowest emission engines
- agencies that have difficulty weighting air emission performance of equipment in their tender processes can choose to instead request that contractors specify how they will reduce air emissions and provide data on the air emissions from their equipment.

The Department of Finance, Services and Innovation will update standard contract specifications for subcontractors, lease agreements and products purchased through ProcurePoint by 1 July 2019.

Where goods are high value and purchased or leased through a route other than ProcurePoint, agencies will apply the same minimum standards.



## A2 Low-VOC materials

All surface coatings and other VOC emitting products will comply with the Property NSW Guidance Note on Low-VOC Emission Materials.

### Coverage

All agencies

### Implementation

Agencies must use the Property NSW Guidance Note with specifications for low-VOC emissions materials including paints, adhesives, sealants, carpets and carpet underlays.

The Guidance Note's emission standards comply with the Australian Paint Approval Scheme (APAS) and target base case compliance with Australia's Green Star rating scheme.

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<sup>5</sup> This includes upgrades to existing buildings and infrastructure worth more than \$10 million.

Agencies will update standard contract specifications for subcontractors for work that requires use of VOC emissions materials.

Agencies can refer to the Guidance Note available at Property NSW for further details on the recognised product certification schemes.



## Monitoring and reporting

It is crucial that agencies report on their performance against the GREP. Without reporting, progress cannot be assessed, and measures cannot be enhanced and appropriately tailored in future reviews of the policy. Reporting is also important to ensure the public accountability of agencies and the visibility of NSW Government leadership on resource efficiency. A centralised web tool is designed to support agencies with their reporting task.



### R1 Agencies will publicly report on their progress on the GREP annually

General government sector agencies will report performance against this policy by publishing financial year data annually.

This may be through the Office of Environment and Heritage's reporting tool, the Centralised Analysis System for Performance of Energy and Resources (CASPER). Alternatively, agencies can notify the Office of Environment and Heritage where they have provided data through other channels, such as agency websites or annual reports.

Agencies must ensure they publish the following information each year:

- totals for electricity, natural gas and LPG consumption and expenditure, including a comparison with the previous three years
- number of energy efficiency projects completed during the reporting year, their estimated annual energy and bill savings and an update on how the agency is tracking on reaching the energy saving target (E1)
- location of sites upgraded and an estimate of how much was invested in energy efficiency upgrades at these sites (E1)
- a list of planned and implemented renewable energy projects, including location, size, estimated investment and estimated annual energy and bill savings, and any other renewable energy opportunities identified (E5)
- total potable water consumption and expenditure, including a comparison with the previous three years, once data is available (W1)
- top three waste streams by both total weight and total cost of disposal over the past three years (P1)
- a statement of compliance with the procurement standards set out in this policy (i.e. E2, E3, E4, E5, E6, E7, W2, W3, A1 and A2). Any instances of non-compliance and plans to comply should be noted and explained.



The reporting deadline will be the last working day in November each year.

The Office of Environment and Heritage will publish collated agency data online. This publication may function as agencies' public reporting channel.

The Office of Environment and Heritage will publish high-level agency reporting information on its website within 10 weeks from when it is collected. It should advise agencies where there are potential issues with information reported.

Performance against this policy will be considered each year on a cluster basis by the Chief Financial Officer Forum and, if appropriate, by the Secretaries Board.

Where general government sector agencies use government contracts, the Department of Finance, Services and Innovation will work with suppliers to provide all data directly to agencies and the Office of Environment and Heritage on an annual basis. This includes data from the following contracts:

- electricity consumption for small sites under Contract 776 and large sites under Contract 777
- natural gas consumption under Contract 4000 and LPG consumption for non-automotive uses under Contract 349
- integrated waste management under Contract 9698.

Agencies must provide the Office of Environment and Heritage with data where they do not use standard contracts.

Agencies are encouraged to provide their plans for Measures E1, E5, W1 (voluntary) and P1 (voluntary) as one single GREP implementation plan to the Office of Environment and Heritage.

## Appendix A: Glossary of terms

### Agencies

NSW general government sector agencies include all government units and non-profit institutions controlled and mainly financed by government. This excludes state-owned corporations. For agencies with fewer than 100 employees, the implementation of and reporting on this policy is voluntary.

### Base building

... refers to the part of a multi-tenant building that directly serves and affects all tenants. The base building normally includes the building's primary structure; the building envelope (roof and facade) in whole or part; public circulation and fire egress (lobbies, corridors, elevators and public stairs); underground parking; and primary mechanical and supply systems (electricity, heating and air-conditioning, telephone, water supply, drainage, gas, etc.) up to the point of contact with individual occupant spaces.

### Cluster

Agencies are grouped into clusters based on their department.

### Energy star ratings

... are available for a range of domestic appliances, including fridges, dishwashers and washing machines. The star rating of an appliance is determined from the energy consumption and size of the product, measured under Australian Standards, which also define minimum energy performance criteria. Appliances must meet these criteria before they can be granted an energy rating label.

### Environmental Upgrade Agreement (EUA)

An EUA is a finance model for businesses to make environmental improvements to existing commercial, industrial, strata scheme and large multi-unit residential buildings in New South Wales. A finance provider lends funds to a building owner for water, energy and other environmental upgrades and this low-risk loan is repaid through a local council charge on the land. Tenants of commercial buildings can be asked to contribute to the costs; however, these additional costs must be offset by their reduced energy and water bills.

### Green Leases

... are leases between landlord and tenant which aim to ensure that the ongoing use and operation of a building minimises environmental impacts. A Green Lease is different from conventional leases in that it incorporates ecologically sustainable development principles. These provide a framework under which both landlord and tenant can achieve and maintain energy efficiency and other sustainability goals throughout the term of the lease.

### GreenPower

... is a government accreditation program that enables energy providers to purchase renewable energy on the customers' behalf. When customers choose to buy a GreenPower product, they pay an additional charge which is invested in the renewable energy sector.

## **NABERS**

The National Australian Built Environment Rating System (NABERS) is a rating system that measures the environmental performance of Australian buildings, tenancies and homes. NABERS measures the energy efficiency, water usage, waste management and indoor environmental quality of a building or tenancy and its impact on the environment.

## **Power Purchase Agreement (PPA)**

A solar PPA is a financial agreement where a developer arranges for the design, permitting, financing and installation of a solar energy system on a customer's property at little or no upfront cost. The developer sells the power generated to the host customer at a fixed rate that is typically lower than the local utility's retail rate.

## **ProcurePoint**

... is an electronic system that provides procurement information and tools to help NSW Government agencies and current or potential suppliers. It is managed by NSW Procurement, a division of the Department of Finance, Services and Innovation.

## **Site**

A site is defined as an address or aggregation of addresses at which a NSW Government agency pays for energy (electricity, natural gas or LPG).

## **Small sites**

... are sites with an annual electricity consumption of less than 100,000 kWh.

## **Water star ratings**


... are achieved under Australia's Water Efficiency Labelling and Standards (WELS) scheme which requires certain products to be registered and labelled with their water efficiency in accordance with the standard set under the national *Water Efficiency Labelling and Standards Act 2005*.

## Appendix B: Guidance on Measure E1

### Identification of eligible sites

The following example illustrates which steps agencies should undertake to identify their eligible sites under the site-based approach of Measure E1.

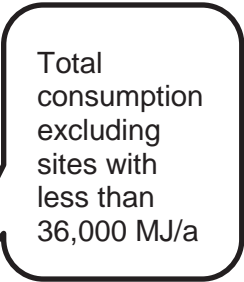
**Step 1:** Select a baseline year (2012–13 or later) and rank sites by energy use.



FY 2013–2014	Consumption (MJ/a)
SITE 1	1,206,000
SITE 2	849,600
SITE 3	720,000
SITE 4	464,400
SITE 5	216,000
SITE 6	108,000
SITE 7	36,000
SITE 8	18,000
SITE 9	10,800
SITE 10	7,200
<b>TOTAL</b>	<b>3,636,000</b>

**Step 2:** Remove sites that consume less than 36,000 MJ/a of energy (electricity converted from kWh, natural gas and LPG).

FY 2013–2014	Consumption (MJ/a)
SITE 1	1,206,000
SITE 2	849,600
SITE 3	720,000
SITE 4	464,400
SITE 5	216,000
SITE 6	108,000
SITE 7	36,000
SITE 8	18,000
SITE 9	10,800
SITE 10	7,200
<b>TOTAL</b>	<b>3,600,000</b>



Total consumption excluding sites with less than 36,000 MJ/a

**Step 3:** Remove sites that fall into the bottom 10% of annual energy use of all your agency's sites which are not very small sites. This means you remove sites whose consumption corresponds to 360,000 MJ/a (i.e. 10% of 3,600,000 MJ/a).

FY 2013–2014	Consumption (kWh/a)	
SITE 1	1,206,000	Eligible sites
SITE 2	849,600	
SITE 3	720,000	
SITE 4	464,400	
SITE 5	216,000	Bottom 10%
SITE 6	108,000	
SITE 7	36,000	Less than 36,000 MJ/a
SITE 8	18,000	
SITE 9	10,800	
SITE 10	7,200	

**Step 4:** Exclude sites where agencies plan to cease occupation within five years at the time of the Measure E1 plan preparation, unless there are feasible energy efficiency projects that would deliver a return before this period ends.

**Step 5:** Exclude sites where a business case for energy efficiency opportunities demonstrates that there are no cost-effective upgrades available with an internal rate of return of at least 12%.

Steps 1 to 5 should be documented in the Measure E1 plan to be prepared by November 2019, with exclusions supported by adequate evidence.

## Adjustment of baselines

### Site-based approach

Agencies are encouraged to select a baseline which is most representative of their current sites' portfolio. If changes occur, they should take the following actions:

Event	Action
Acquisition of a new site by June 2022	Undertake an energy efficiency project unless: <ul style="list-style-type: none"> <li>• the site is very small, consuming less than 36,000 MJ of energy per year</li> <li>• the agency plans to cease occupation within five years and the site does not have any feasible energy efficiency projects that would deliver a return before this period ends</li> <li>• the agency demonstrates that energy efficiency opportunities for the site would only be achievable with significant structural or mechanical works and that upgrades would, therefore, have an internal rate of return of less than 12% (e.g. heritage assets)</li> <li>• the site was already subject to an energy efficiency project under the GREP.</li> </ul>
Acquisition of a new site after June 2022	No action required
Divestment of a site included in the list of eligible sites	No action required

### Aggregate savings approach

Agencies should lock in the 10% aggregate energy savings target across their whole portfolio, selecting a baseline which is most representative of their current sites' portfolio.

If a significant change in the number and/or type of sites occurs, the agency should adjust the baseline as appropriate, recalculate the target and report the change with its rationale to the Office of Environment and Heritage.



## Appendix C: Clean Air Emissions Standards

The tables below describe the emission standards for non-road diesel engines related to Measure A1.

**Table 3 US EPA Tier 4 Air Emissions Standards**

Tier 4 Emission limit (g/kWh)	Engine power – kW				
	19≤kW<37	37≤kW<56	56≤kW<130	130≤kW≤560	kW>560
Carbon monoxide (CO)	5.5	5.0	5.0	3.5	3.5
Particulate matter (PM)	0.03	0.03	0.02	0.02	0.04 <sup>a</sup>
Non-methane hydrocarbons (NMHC)	4.7 (combined)	4.7 (combined)	0.19	0.19	0.19
Oxides of nitrogen (NO <sub>x</sub> )			0.4	0.4	3.5 <sup>b</sup>

<sup>a</sup> = 0.03 for generator sets

<sup>b</sup> = 0.67 for generator sets

**Table 4 EU Stage IIIA/IIIB/IV Air Emissions Standards**

Stage IV Emission limit (g/kWh)	Engine power – kW			
	19≤kW<37 <sup>a</sup>	37≤kW<56 <sup>b</sup>	56≤kW<130	130≤kW≤560
Applicability	until 31/12/2020	until 31/12/2020	until 31/12/2021	until 31/12/2020
Carbon monoxide (CO)	5.5	5.0	5.0	3.5
Particulate matter (PM)	0.6	0.025	0.025	0.025
Hydrocarbons (HC)			0.19	0.19
Oxides of nitrogen (NO <sub>x</sub> )	7.5 (combined)	4.7 (combined)	0.4	0.4

<sup>a</sup> = EU Stage IIIA

<sup>b</sup> = EU Stage IIIB

**Table 5 EU Stage V Air Emissions Standards**

Stage V Emission limit (g/kWh)	Engine power – kW				
	19≤kW<37	37≤kW<56	56≤kW<130	130≤kW≤560	kW>560
Applicability <sup>a</sup>	from 01/01/2021	from 01/01/2021	from 01/01/2022	from 01/01/2021	from 01/01/2021
Carbon monoxide (CO)	5.0	5.0	5.0	3.5	3.5
Particulate matter (PM)	0.015	0.015	0.015	0.015	0.045 <sup>b</sup>
Particle number (PN)	1x10 <sup>12</sup>	1x10 <sup>12</sup>	1x10 <sup>12</sup>	1x10 <sup>12</sup>	n/a
Hydrocarbons (HC)	4.7	4.7	0.19	0.19	0.19
Oxides of nitrogen (NO <sub>x</sub> )	(combined)	(combined)	0.4	0.4	3.5 <sup>c</sup>

<sup>a</sup> = EU introduction date + 2 years

<sup>b</sup> = 0.035 for generator sets

<sup>c</sup> = 0.67 for generator sets

Details of US emission standards: [www.dieselnet.com/standards/us/nonroad.php](http://www.dieselnet.com/standards/us/nonroad.php)

Details of EU emission standards: [www.dieselnet.com/standards/eu/nonroad.php](http://www.dieselnet.com/standards/eu/nonroad.php)

## Appendix D: GREP changes from 2014 to 2019

The table below gives an overview of what has changed from the first edition of the Government Resource Efficiency Policy (GREP) published in 2014 to the reviewed second edition published in 2019.

**Table 6 GREP changes from 2014 to 2019**

Measure	Main features and changes
<b>Energy</b>	
E1 Target to save energy across all government sites	<p>Agencies will identify and implement energy efficiency opportunities at all eligible sites by 2023–24.</p> <ul style="list-style-type: none"> <li>• Target applies to agencies rather than clusters to provide clearer accountability and increased continuity.</li> <li>• Agencies have more flexibility to reach the target as upgrade project requirements are simplified and an alternative option to target 10% aggregate energy savings over their whole site portfolio, rather than carry out upgrades at all eligible sites, is available.</li> <li>• Energy baseline, target and savings will be measured in MJ/kWh, not billed energy costs, which is more objective.</li> <li>• Agencies will create a simple plan to upgrade their sites and submit it to the Office of Environment and Heritage by November 2019.</li> </ul>
E2 Minimum NABERS Energy ratings for offices and data centres	<p>Existing owned and leased offices and data centres will achieve and maintain specified NABERS Energy ratings by June 2020.</p> <ul style="list-style-type: none"> <li>• NABERS standard for offices rises from 4.5 to 5 stars in line with broader commercial developments in metropolitan areas.</li> <li>• Leased regional offices and all data centres stay at 4.5 stars.</li> <li>• Measure applies to buildings above 1000 m<sup>2</sup> (instead of 2000 m<sup>2</sup>) to align with national requirements (under the Commercial Building Disclosure program).</li> <li>• Green Lease requirements are narrowed to target the most effective sites (over 4000 m<sup>2</sup> instead of 2000 m<sup>2</sup>).</li> </ul>
E3 Minimum standards for new electrical appliances and equipment	<p>All new electrical equipment purchased by government must be at least 0.5 stars above the market average GEMS star rating or comply with other relevant high efficiency standards.</p> <ul style="list-style-type: none"> <li>• Modelling shows that this standard, raised from the previous market average level, is the most cost-effective over a period of 10 years.</li> </ul>
E4 Minimum standards for new buildings and fit-outs	<p>All new facilities with project costs over \$10 million will achieve and maintain specified NABERS Energy and Green Star ratings or be designed to these standards.</p> <ul style="list-style-type: none"> <li>• NABERS standard for new offices raised from 4.5 to 5 stars in metropolitan areas to keep pace with market improvements and changes to the National Construction Code.</li> <li>• New Green Star standards to make requirements more comprehensive. Formal certification is only needed for offices above 5000 m<sup>2</sup>. New Green Star Performance rating for large tenancy fit-outs above 15,000 m<sup>2</sup>.</li> <li>• Agencies to consider readiness for future electric vehicle charging infrastructure when building and refurbishing their sites.</li> </ul>

Measure		Main features and changes
E5	Whole-of-government solar target	<p>The reviewed GREP sets a new requirement for agencies to install solar PV on suitable sites to contribute to the NSW Government's solar target of 25,000 MWh per year by 2021 and 55,000 MWh per year by 2024.</p> <ul style="list-style-type: none"> <li>Agencies will create a plan for their contributions and submit it to the Office of Environment and Heritage by November 2019.</li> <li>Agencies will consider both small and large sites. They have already self-assessed the suitability of small sites for solar installations under the previous E5 measure.</li> </ul>
E6	Minimum fuel efficiency standards for new light vehicles	<p>Standards will be improved so that the average NSW Government purchase is at least the market average fuel efficiency by vehicle category by June 2020.</p> <ul style="list-style-type: none"> <li>The timeframe for meeting this measure has been extended from 2017 to 2020.</li> <li>The Office of Environment and Heritage will now assist NSW Procurement in setting minimum fuel efficiency requirements for new vehicle purchases.</li> </ul>
E7	Purchase 6% GreenPower	<p>All government agencies except Local Health Districts purchase at least 6% GreenPower.</p> <ul style="list-style-type: none"> <li>No changes. GreenPower requirement will be reconsidered at next GREP review in light of market developments.</li> </ul>
<b>Water</b>		
W1	Report on water use	<p>All agencies report on water use.</p> <ul style="list-style-type: none"> <li>They are strongly encouraged to set water use stabilisation or reduction targets.</li> </ul>
W2	Minimum water standards for office buildings	<p>All large office buildings will achieve and maintain a NABERS Water rating of 4 stars where cost-effective.</p> <ul style="list-style-type: none"> <li>Measure applies to office buildings above 1000 m<sup>2</sup> (instead of 2000 m<sup>2</sup>) to align with national measures.</li> <li>Measure mandatory for all Green Leases (above 4000 m<sup>2</sup> instead of 2000 m<sup>2</sup>).</li> </ul>
W3	Minimum standards for new water-using appliances	<p>New water-using appliances purchased by government must be at least 0.5 stars above the market average WELS star rating.</p> <ul style="list-style-type: none"> <li>Modelling shows that this standard, raised from the previous market average level, is the most cost-effective over a period of 10 years (except for toilets and urinals, which stay at market average level).</li> </ul>
<b>Waste</b>		
P1	Report on top three waste streams	<p>All agencies will report on their top three waste streams.</p> <ul style="list-style-type: none"> <li>In addition to encouraging agencies to create waste reduction plans, agencies are now also encouraged to set waste reduction targets based on best practice examples and a template provided by the Office of Environment and Heritage.</li> <li>Waste to be measured by weight and cost (instead of volume and cost), for greater transparency and administrative simplicity.</li> </ul>

Measure	Main features and changes
<b>Clean Air</b>	
<p>A1 Air emission standards for mobile non-road diesel plant and equipment</p>	<p>Agencies will comply with EU or US EPA standards when purchasing or leasing such equipment. They will consider air emissions from contractor-supplied equipment in construction tender processes.</p> <ul style="list-style-type: none"> <li>• Scope reduced from all tenders to contracts for construction projects over \$10 million. Contractors need to state how they will reduce emissions.</li> <li>• Air emission standards of engines are aligned with the current EU and US EPA levels which are accepted internationally.</li> </ul>
<p>A2 Low-VOC materials</p>	<p>All surface coatings and other VOC emitting products will comply with the Property NSW Guidance Note on Low-VOC Emission Materials.</p> <ul style="list-style-type: none"> <li>• Measure broadened beyond surface coatings to adhesives, sealants, carpets and carpet underlays.</li> </ul>
<b>Reporting</b>	
<p>R1 Agencies will publicly report on their progress on the GREP annually</p>	<p>Agencies report annually, including their energy and water consumption, waste generation, energy efficiency and renewable energy projects, and compliance with procurement standards.</p> <ul style="list-style-type: none"> <li>• For very small agencies with fewer than 100 employees, the implementation of and reporting on this policy is now voluntary.</li> <li>• Yearly cluster updates on progress to Chief Financial Officer Forum and, if appropriate, Secretaries Board introduced to share lessons and progress across government.</li> <li>• Publication of high-level agency reporting information within 10 weeks from when it is collected to make data accessible well before formal publication of the GREP Progress Report.</li> </ul>