

Sustainability Action Plan

2018-2021



Health
South Western Sydney
Local Health District

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1. Foreword

South Western Sydney Local Health District (SWSLHD) is strongly committed to becoming an environmentally responsible, sustainable, adaptable and resilient organisation. This commitment is clearly demonstrated throughout the SWSLHD Sustainability Action Plan, which will empower our staff to work in ways that are more environmentally sustainable and resource efficient.

The Sustainability Plan has at its core international, national, and local legislation and policies that require the District to meet defined reporting targets. It brings together strategies that have been devised at various levels of government and through a number of government agencies and partnerships into an overarching plan presented in a public health framework. Key strategies include leadership, staff engagement, climate risk, waste, energy, water, transport and buildings.

Through this plan SWSLHD will become leaders in healthcare sustainability. Through our staff, programs and example, SWSLHD will encourage its communities to become more sustainable. We look forward to reporting our progress over the next three years.

Amanda Larkin
Chief Executive
South Western Sydney Local Health District

2. Executive summary

SWSLHD operates in one of the most rapidly growing populations in NSW and this is projected to grow by more than a million people in the next decade. With seven local government areas (LGAs) of Bankstown, Liverpool, Fairfield, Campbelltown, Camden, Wollondilly and Wingecarribee, the residents make up 12.2 per cent of the NSW population and are culturally diverse, with around 49 per cent of residents speaking a language other than English at home.

SWSLHD is an integral part of the community. We provide comprehensive public health services including health promotion, early intervention, emergency and acute health care and rehabilitation with a diverse range of facilities from hospitals and community health centres to home based care. From breast screening checks to health education programs for refugees, population health programs and hospital services, SWSLHD has a big impact on communities in our areas of operations.

A large part of our impact is environmental. Healthcare services are capital and resource intensive: with large buildings necessitating high energy use and intensive services leading to high waste. This results in a large carbon footprint and in turn we, and the community, are further affected by climate change. Rising temperature and extreme weather events will impact not only our direct hospital services and our assets, but will have an influence on future community and population education programs.

SWSLHD is one of the largest employers and businesses in our communities. Our staff are already engaged and committed to effective health care. Through education and policies we can empower our staff to practice and work in ways that are more environmentally sustainable. Through our staff, our programs and by example we can also influence the communities we live in to be more sustainable.

SWSLHD will:

- Empower our staff to practice and work in ways that are more environmentally sustainable
- Embed sustainability in business practices
- Improve resource efficiency, focusing on energy and waste management
- Develop strategic sustainability partnerships
- Create opportunities to achieve greener facilities and services
- Assess and mitigate climate risk

3. Introduction

3.1. What is sustainability?

Australians have one of the highest living standards in the world. But the impact on the environment to live the way we do is currently unsustainable, as can be seen by the impact of climate change and rising pollution due to plastic.

If everyone wanted to live the way Australians do, it would require 5.2 Earths (WWF). Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is usually noted that this requires the reconciliation of environmental, social and economic demands - the “three pillars” of sustainability. It’s often quoted as “enough, for all, forever.”

3.2. Why health care organisations?

Australians have one of the highest health care standards in the world. As Australia moves to be more sustainable healthcare in all its forms need to move with it. In a healthcare context it covers three main areas.

Sustainable operations

The healthcare sector – from public and private hospitals to pharmaceuticals production - contributes 7% to Australia's total carbon footprint (Arunima Malik, 2018). Hospitals themselves are a high energy, high cost enterprise, with a large procurement and waste envelope. To meet our international obligations hospitals and related healthcare need to be more sustainable. The good news is that by being more sustainable the healthcare system will be more cost effective.

Sustainable Communities

Sustainable communities are healthier communities. Environmental factors such as air pollution and heat stress can affect the health of the community. Some ways of addressing sustainability can have benefits for health (co-benefits) i.e. by putting policies in place that increasing the proportion of employees that travel by public transport, walk or cycle to work. By showing leadership in sustainable practices the district can influence and improve the health of the greater community.

Climate risk

Hospital and related healthcare have a high carbon footprint. They in turn impact on and are affected by climate change. Changing weather patterns, more frequent extreme weather and rising temperatures have direct implications on our health, and also pose challenges to the way in which deliver health outcomes. The impact is varied:

- operating costs impacted as increasing temperatures drive up energy use
- emergencies such as storm and temperature events may increase in intensity and range, affecting not only facility and operational issues but hospital presentations
- warmer climate and changing rainfall patterns will impact disease vectors (Xiaoxu Wu, Jan 2016)

Building resilience into the predicted health impacts of climate change will save costs in the short and long term, protect lives and deliver health outcomes. As such assessing our climate risk, establishing adaption strategies and embedding them in our operations is a key focus area for the sustainability action plan. We will also assess the impact the range and breadth of our population education programs and research programs as we try to minimise climate driven health impacts on the community.

3.3. Who should be involved?

Sustainability is the role of everyone in the health care system, from simple activities like reporting water leaks and correctly segregating waste, to ensuring sustainability and climate change adaption is a consideration in major capital development. Our staff are engaged with sustainability. The SWSLHD Sustainability Action Group for the Environment (SAGE) group undertook a staff survey in 2015 and 76% of respondents said that sustainability was very important. Sustainability is also a key corporate focus area and the action plan directly aligns with the key focus areas in the SWSLHD Transforming *Your Experience* program. See Fig 1.

Clinicians

Clinicians and clinical staff are key targets of the sustainability action plan. Day to day activities, from better waste management, to the type of anesthesia (McGain, 2016) used can have a major impact on sustainability outcomes and hospital costs. The district is already undertaking best practice in niche areas in some hospitals and a key focus of this plan is to consolidate best practice across the district. Some current examples include:

- Theatre and sterilising staff –1.3 tonnes of Kimguard recycled in Fairfield and Liverpool Hospitals (2016/17)

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- Sterilising and ICU staff – clean uncontaminated Kinguard reused at Bowral and Campbelltown hospitals
- Plastics – 7.1 tonnes of plastics including [PVC theatre plastics](#) such as oxygen masks and IV bags and linen at Liverpool. (Not all plastic reuse is measured at other hospitals.) (2016/17)
- Single use Multigate theatre bowls recycled at Liverpool SSD
- Batteries, from domestic type to medical equipment – 1.2 T batteries recycled (2016/17)

A major focus going forward is clinical staff engagement and education programs. Staff engagement programs – such as the UK National Health Service TLC program – can reduce electricity use by 3% as well as provide better patient care outcomes. (Sustainable development unit -NHS England and Public Health England). Lean management is another tool to reduce waste (wasted energy, wasted effort, wasted product). By engaging and educating staff, or utilising facilitated LEAN system management programs where problems are more complex, the district can embed sustainability into everyday management practices.



Figure 1 - Alignment with Transforming Your Experience Key Focus Areas

- 1 Climate And Health Alliance
- 2 Global Green Healthy Hospitals
- 3 Office of Environment and Heritage Sustainability Advantage program
- 4 TLC - a clinical care focused energy efficiency program to reduce light, noise and control temperature <https://www.globalactionplan.org.uk/operation-tlc>

4. Policy and legislative context

Australia is a signatory on several international frameworks which focus on environmental sustainability and climate change mitigation. Its participation and compliance with those targets is reported on annually. Australia’s commitment to those international agreements has led to the development of a suite of federal and state policies, strategies and programs. See Appendix A for Federal and International Policies

From NSW state policies to directives from the Ministry of Health, SWS LHD is part of a community with a broad range of policies, regulation, targets and social expectations that SWS LHD needs to comply with or meet. Fig 2 has an outline of the broader community.

South Western Sydney Local Health District has as its mission statement that it is “committed to continuous quality improvement and innovation in delivering efficient and sustainable health care.” This sustainability action plan is a realisation of that mission statement, supports the Transforming Your Experience program, and is in alignment with Australia’s position on climate change and sustainability.



4.1. NSW policy

In alignment with federal accords, the NSW government has set targets to reduce emission and implemented several programs to drive efficiency. See Appendix B for specific NSW and Ministry of Health (MoH) targets.

- [NSW Climate Change Framework \(NSW Office of Environment and Heritage, 2016\)](#) (late 2016). This policy outlines the long-term objectives to achieve net-zero emissions by 2050 and to make New South Wales more resilient to a changing climate. There is a budget of \$1.4 billion to be spent between 2017 and 2022. Proposed programs were opened to community and industry consultation (late 2016) and the revised program is currently awaiting approval.
- [NSW Waste Avoidance and Resource Recovery Strategy \(WARR\) \(NSW EPA, 2014\)](#) This strategy has broad ranging waste policies targeting sectors from domestic to commercial. The health sector relevant target is to increase recycling rates for commercial and industrial waste from 57% (in 2010–11) to 70% by 2021-22. The current SWSLHD recycle rates are about 11% for commercial waste, with no current data for construction waste. Improving data management is a fundamental part of the sustainability action plan.
- [NSW Government Resource Efficiency Policy \(GREP\)](#) (State of NSW and Office of Environment and Heritage) This covers a range of requirements for budget dependent government agencies, from more sustainable purchasing to building upgrades. There are specific targets for water and energy efficiency, to reduce waste and air pollution, and to report resource use. A major part of this is an online data base to track resource use with the data rolling up into industry clusters. Compliance with GREP needs to be reported annually.
- [NSW Office of Environment and Heritage \(OEH\)](#) have a range of tools and programs available for energy and water efficiency. (NSW Office of Environment and Heritage)
- [Sustainability Advantage](#) (NSW Office of Environment and Heritage) is an OEH program offering businesses and government agencies support, workshops, training and recognition through an award program.

4.2. Ministry of Health

Ministry of Health NSW has set targets to reduce emission and implemented several guidelines to drive efficiency in alignment with NSW policy. See Table 1 for specific NSW and MoH targets.

- [Ministry of Health Resource Efficiency Strategy 2016 to 2023 \(H-RES\).](#) (NSW Ministry of Health) This strategy is in line with the NSW GREP, except it details more specific health related KPI, targets and reporting requirements. They also have recommendations over and above GREP including undertaking climate change risk assessment and adaption planning, and targets about installing renewable energy generation.
- [Clinical and Related Waste Management for Health Services, Policy Directive](#) (NSW Ministry of Health) This Policy Directive requires health services to meet a minimum standard for waste management, including starting waste management committees. Specific waste streams must be managed in line with NSW legislation, licensing, waste management contract and waste minimisation practices.

SWSLHD will have a New Waste Management Plan, and new Waste Management Committee by June 2018 as required by the MOH directive.

- [Engineering Services Guideline](#) (NSW Ministry of Health) This guideline promotes sustainable design, water and energy passive design, monitoring and sub-metering and has broad targets for energy and water efficiency. *“Engineering design should be applied to reduce energy wastage and carbon dioxide emissions arising from the operation of the hospital, whilst maintaining clinical and functional standards.”*

4.3. Impact of planned legislative and policy changes

There are several environmental or legislative changes being implemented or proposed that will drive up cost and would be an impetus to improving sustainability.

- [NSW Government's Container Deposit Scheme Due](#) (starts 1 Dec 2017). A 10c deposit scheme to be implemented on most water/soft drink bottles from 600ml to 3L. Patient bottle use alone would have a rebate of \$100, 000. Most patient use plastic bottles are not recycled now, so there is a need to review collection procedure.
- Hospital NABERS rating (due 2018). Currently GREP specified National Australian Built Environment Rating System (NABERS) ratings of 4.5 for all new buildings but this is only for commercial buildings. The new NABERS Hospital precinct rating was developed in late 2016 and training has been undertaken at Ministry of Health level. This may require all buildings to be rated and have strategies developed to bring all up to a minimum rating system. Note: Health Infrastructure do not support the NABERS rating system.
- New NABERS waste rating (due 2018). New National Australian Built Environment Rating System (NABERS) waste rating combined with a new reporting system may impact GREP compliance.
- [Hydrochloroflourocarbons \(HCFC\) restrictions](#) (Since 1 Jan 2016) HCFC such as R22 other gases are used in fridge and heating ventilation and cooling (HVAC) systems. 1 Jan 2016 saw implementation of the last phase of the HCFC restriction, limiting importation into the country for R22 and other HCFC which will drive prices up. All remaining HCFC using fridges and HVAC systems should have strategic plans in place for end of life or replacement to minimise costs.
- [Hydroflourocarbon \(HCF\)](#) gas phase down (Jan 1 2018) HFC entering the first phase of a restriction. This may not impact for several years, but long term (20-30yr) capital equipment installation should have a plan in place to HCF costs when it does start to impact cost or availability

5. Our current sustainability and environmental performance

SWSLD spends over \$15M a year in energy, water and waste management. While costs have grown for some resources, due a combination of higher prices and higher use, the efficiency of water and energy use has improved when considered in terms of water and energy use per normalised bed days in the last 3 years.

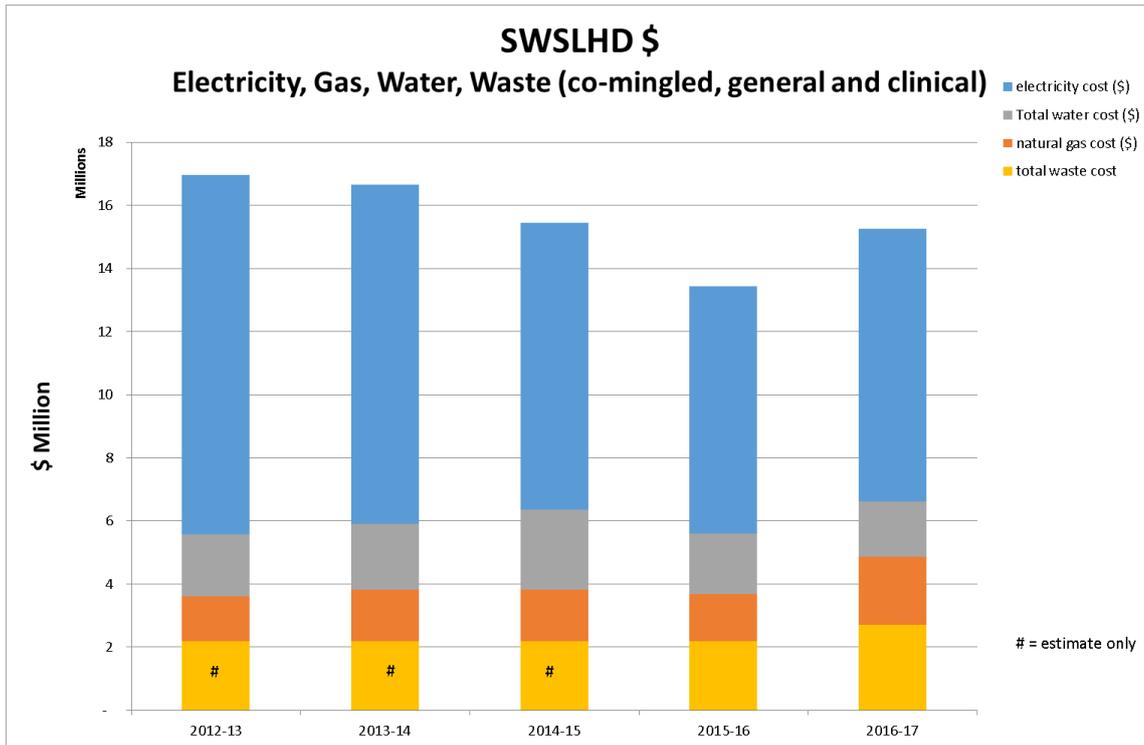


Figure 3- SWSLHD Resource Costs

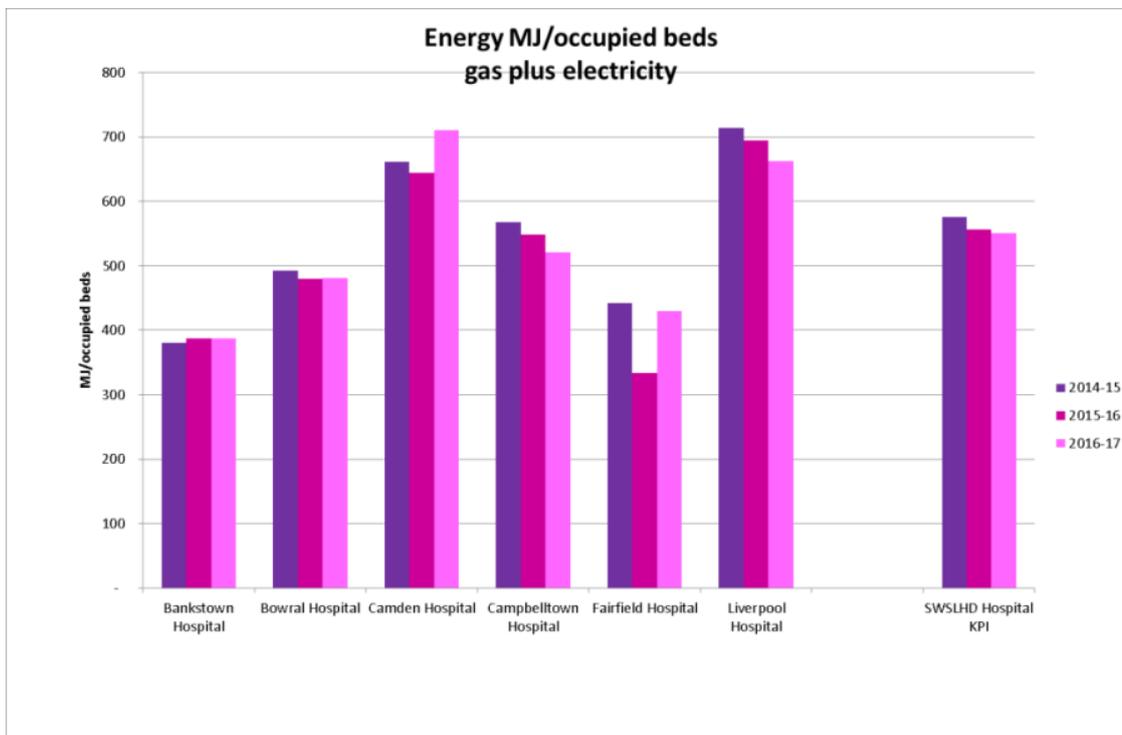


Figure 4 - SWSLHD Energy MJ/occupied beds

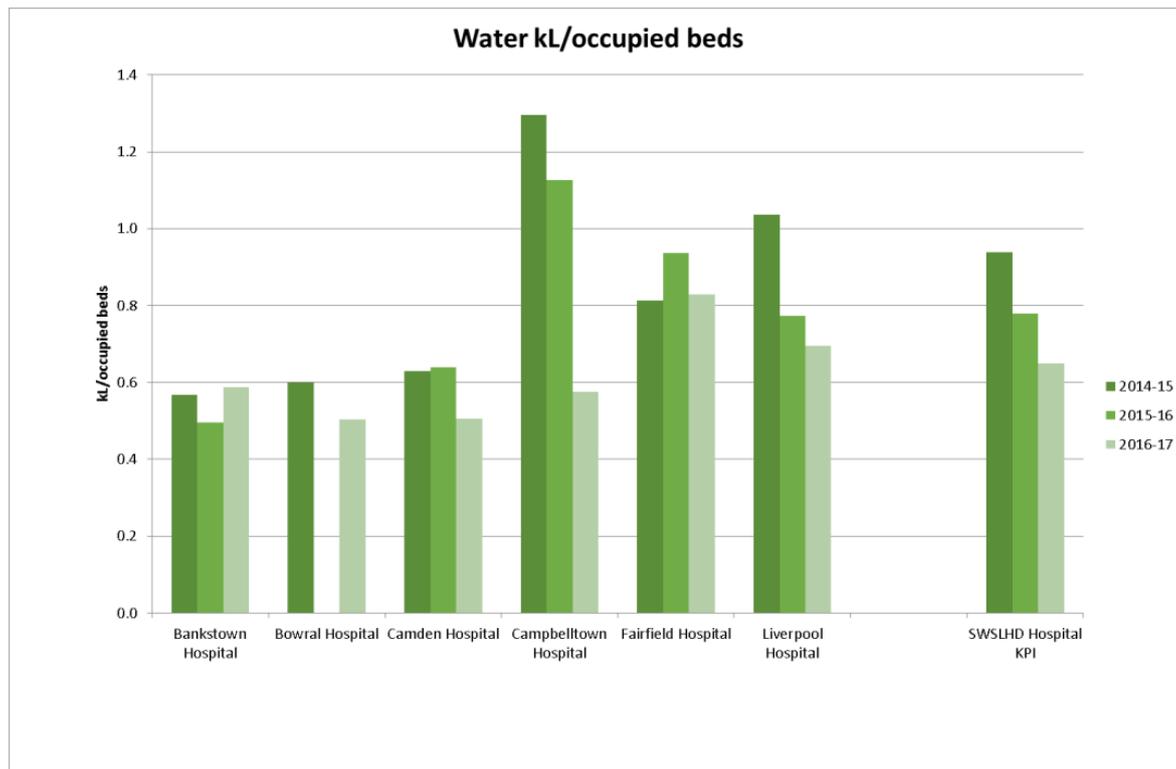


Figure 5 - SWSLHD Water kL/occupied beds

Waste is a majority part of the resource management. (There is currently only 12 months of data so a trend cannot be established.)

The data below is as per the GREP report, which only reports 3 waste streams.

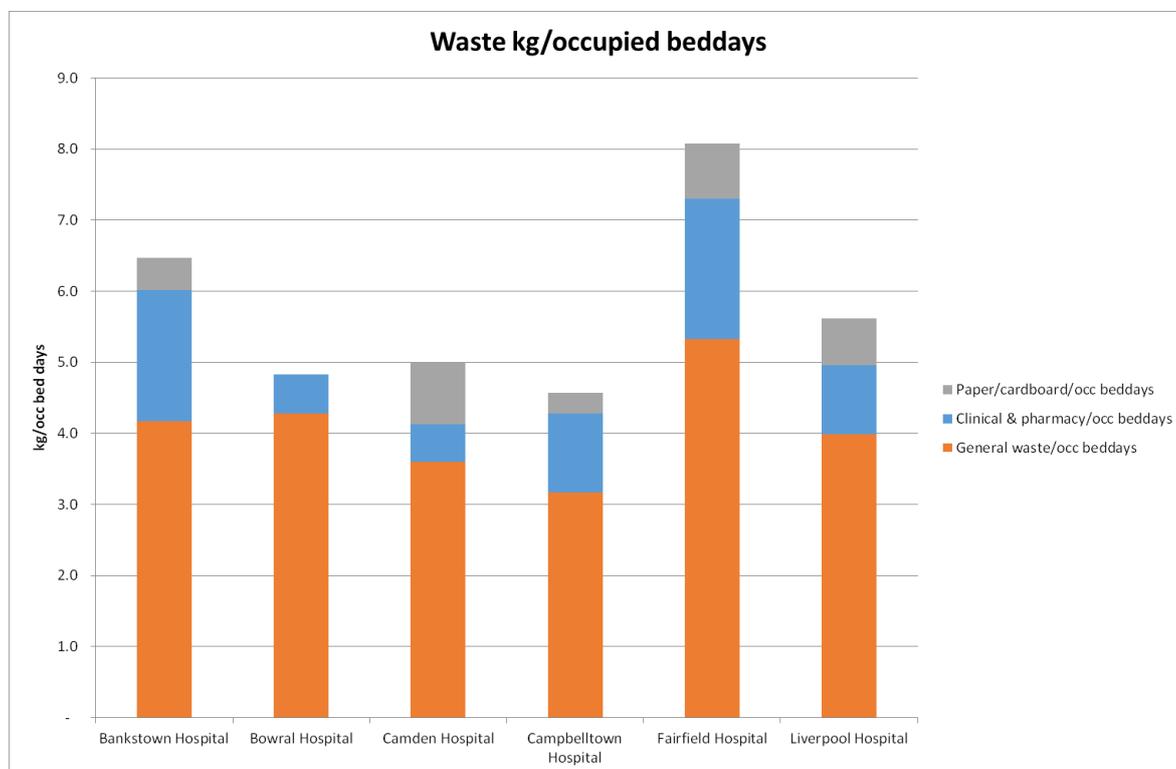


Figure 6 - SWSLHD Waste kg/occupied beds, only 12 months data readily available.

Recycling is available at most hospitals in some form. A major focus will be to ensure consistency about recycling and reuse practices.

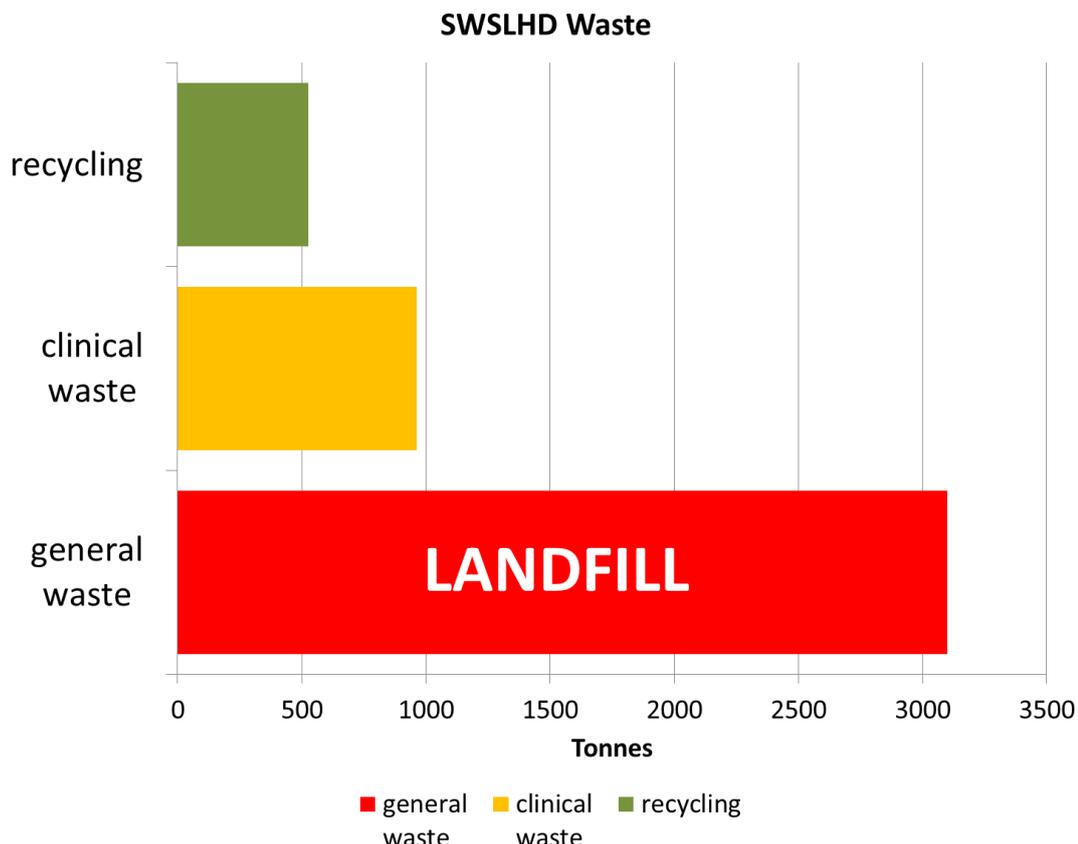


Fig 7 Waste break up for 2016/17

11% of total waste is recycled (2016/17), with the majority being paper and cardboard (not including secure destruction). There are several recycle streams that are not weighed such as toner cartridges.

Type	Tonnes in 2016/17	Type	Tonnes in 2016/17
Paper and cardboard (not in secure destruction)	443	Green waste	2.7
Co-mingled recycling	51	Kimguard (clean)	1.3
E-waste	13.4	Fluorescent lights	1.3
Plastic (Polystyrene, PVC theatre plastic, linen wrap)	7.1	Batteries	1.2

Metal	5.3		
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6. Mitigating Climate risk

6.1. Climate risk and health impacts

Climate and Health Alliance (CAHA), an Australian coalition of health care service providers, researchers, academic institutions, and individuals, have highlighted the risk to health from climate change and environmental degradation. Their policy paper, a “Framework For A National Strategy On Climate, Health And Well-Being For Australia” (Climate and Health Alliance) details the various impacts, from higher operation costs to costs to new diseases to be treated which will impact on health care cost.

6.2. Corporate accountability about climate risk

There is a rising awareness that Boards and executives need to understand and mitigate the business risk about sustainability and climate change.

- Australian Prudential Regulation Authority executive board member Geoff Summerhayes, in a [speech to the Insurance Council of Australia Annual Forum](#) on 10/2/2017, stated that climate change must be viewed as a risk management issue for business. “*Many of these risks are foreseeable, material and actionable now. Climate risks also have potential system-wide implications that APRA and other regulators here and abroad are paying much closer attention to*”.
- The centre for Policy Development and Future Business Council [“Climate Change and Directors’ Duties”](#) (7 Oct 2016) detailed a legal opinion that found that determining and mitigating the risk and impacts of climate change falls within the duty of care and diligence imposed on directors by the Corporation Act 2001.

7. Partners and Stakeholders

Sustainability is increasingly supported and driven by industry partners and alliances.

7.1. Industry partners and associations

- HealthShare NSW is a major partner in SWSLHD operations. They have programs to improve efficiency across a range of programs and they have undertaken environmental grants to improve food service and reduce waste.
- [Climate and Health Alliance \(CAHA\)](#) is an Australian coalition of health care service providers, research and academic institutions, and individuals who are highlighting the risk to health from climate change and environmental degradation. In June 2017 they released a [“Framework For A National Strategy On Climate, Health And Well-Being For Australia”](#) which has developed policy direction for the Commonwealth as well as promoting more sustainable health infrastructure and operations.
- [Global Green and Healthy Hospitals](#) (GGHH) is an international initiative to “transform the health sector and foster a healthy future for people and the planet”. The Climate and Health Alliance, the Australian Partner for

Health Care Without Harm, run the GGHH program in Australia. GGHH have a series of policies and actions for a hospital to be more sustainable and healthier, both within the facility and within the greater community.

Other Australian hospitals, [Melbourne Health](#), and Victorian based [Austin Health](#), have had great success in reducing costs as shown in their sustainability reports.

7.2. Local council

Local councils have been taking the lead in undertaking sustainability management plans and climate change risk assessments. With SWSLHD covering seven local government areas there is an opportunity to engage with councils and cooperate about topics such as shared open areas and transport issues. There may be opportunities to partner with councils for grants, and work together on community climate risk assessments.

The SWSLHD has a broad community profile, with varying climate and ethnic diversity. Sustainability is one way to engage with community and Population Health has already undertaken environmental grants such as a “Love Food Hate Waste” to engage with refugee youth. Bringing community health buildings in line with best practice design and operating standards for electricity, water and waste will also be in line with community expectations.

8. Governance

The SWSLHD District Sustainability Committee has the responsibility for guiding and monitoring the development of sustainability strategy and its implementation.

They will report progress to the General Managers Meeting as well as:

- Update and minutes to be shared as part of the Corporate Services Meeting
- Quarterly report to the ELT by exception
- Minutes to be shared with Finance and Assets

9. Opportunities and priorities for action

The action plan covers a range of activities. However there are four priority areas for 2018, mainly due a confluence of events.

Waste.

Two major changes mean that waste is a key focus area. The changeover of waste contract to district wide contracts (Feb 2018) and an updated MOH Clinical and Related Waste Management for Health Services, Policy Directive (Aug 2017) with stricter guidelines and a waste management committee. The impact of both of these offers an opportunity to reinvigorate waste management and standardise on best practices across the district.

Electricity reduction and renewable energy

With energy cost on the rise reducing electricity is a must.

- LED lights are a proven energy saver that not only reduce electricity but reduces ongoing maintenance.
- Solar panels are reducing in cost every year. The emergence of no capital Power Purchased Agreements (PPA) and the government solar panel pre-approved contractor panel (Feb 2018) will make installing solar panels cheaper and easier and should be investigated at a minimum.

Climate Risk Assessments

The timing is right to undertake climate risk assessment and adaption plans in 2018.

- The state government [NSW Climate Change Framework \(NSW Office of Environment and Heritage, 2016\)](#) has a budget of \$1.4 billion to be spent between 2018 and 2023 (still unapproved), \$200M of which is for energy efficiency. It is highly likely that a climate change risk assessment is a requirement of applying for funding under this program.
- Most of the Seven LGA the district operates in will be undertaking their 4 year climate risk adaption review in 2018. Funding is set based on the results and if SWSLHD climate risk adaption highlights similar issues we may be able to jointly apply for grants or influence council funding.

Minimum building efficiency requirements.

The SWSLHD has projected plans to enhance delivery at most sites and substantially upgrade some sites such as Bowral Hospital. SWSLHD needs to review their building development review process to ensure sustainability is embedded in the process. This includes:

- building contracts meeting GREP compliance such as waste reporting, use of recycled materials and paint standards.
- all site development should meet the requirements of the climate risk adaption plans
- energy efficiency and renewable energy to mitigate rising energy costs.

A forecast influence is the Ministry of Health with the National Australian Built Environment Rating System (NABERS) has developed new NABERS Hospital precinct rating (energy and water). While still under review, it is likely that the MOH will establish a minimum NABERS rating for hospital building energy and water efficiency, for both new and existing buildings, which SWSLHD will need to comply with.

10. Sustainability Action Plan

KEY for targets =Mandatory,  = Recommendation,  = Forecast due to changing legislations

Sector:	KPI	Existing MoH or GREP target <input checked="" type="checkbox"/> =Mandatory  = Recommendation,  = Forecast	Responsible	When
10.1 LEADERSHIP- prioritise environmental health				
District sustainability committee.	6 Meeting/yr	N/A	Dir Finance	Annual review by Nov 2018
Hospital based sustainability committees. <ul style="list-style-type: none"> Approval and oversight of process or system reviews e.g. gastroenterology LEAN system review as previously proposed. 	6 Meeting/yr	N/A	Hospital GM	Annual review by Nov 2019
Waste Management Committee. Develop a waste management committee (WMC). The committee is to ensure the specific waste streams are managed in line with NSW legislation, licensing, waste management, safety, and contract and waste minimisation practices. WMCs should regularly review contractors' reports regarding waste streams management, collection data and develop KPI. Develop Waste Management Plan as required by policy. Develop a waste management plan. The plan is to cover complying with the Policy Directive, minimising waste, training and waste management promotion, work health and safety, auditing, measuring waste management performance, incident management.	6 Meeting/yr First meeting by June 2018. First draft by June 2018	<input checked="" type="checkbox"/> MoH Directive	Manager Supply Services	Annual review by Mar 2019
Join Office of Environment & Heritage Sustainability Advantage Program.	Silver partner by 2020	N/A	Sustainability Manager	1 year trial commencing 2018 with review 2019

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Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ♻️ = Recommendation, ◆ = Forecast	Responsible	When
Review aims of Global Green Healthy Hospitals to incorporate into strategy.	N/A	N/A	Sustainability Manager	Annual review by July 2018
Undertake annual sustainability report, or incorporate into annual report.	Supply data as required	N/A	Sustainability Manager	Annually – Nov 2018
10.2 CLINICAL AND GENERAL STAFF ENGAGEMENT				
Clinical engagement on district, hospital and waste management committees – in particular to suggest/drive: <ul style="list-style-type: none"> • product review for increased recycling more sustainable • lean thinking • building design issues to facilitate sustainability. 	No of product reviews No of Lean campaigns	N/A	Sustainability Manager	Annual review Sept 2019
Consider the UK NHS TLC staff engagement program for clinical staff – a proven method to engage staff, improve clinical care and has broader implications for building design.	Review implementation	N/A	Sustainability Manager	Feb 2019
Consolidate best practice recycling and waste segregation practice across district. See waste (4) for examples.	See waste KPI for details	N/A		
Consider training, such as base level “participate in sustainable work practices” up to Diploma level for managers and lean practices training for all clinical staff etc. (my-health training has a e-module)	Number and type complete	N/A	Dir HR/ Sustainability Manager	Annual review by Jun 2018

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Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ⊕ = Recommendation, ◆ = Forecast	Responsible	When
Review inductions for improved sustainability.	Number complete	N/A	Dir HR/ Sustainability Manager	Annual review by Jun 2019
Communication program to promote existing work and engage clinical and general staff in sustainability: <ul style="list-style-type: none"> • Intranet posts • Facebook • External articles • Posters. Newsletters	Items /month 2 events/year	N/A	Sustainability Manager/Commu nication Manager/Dir Population Health	Annual review by Nov 2018
10.3 CLIMATE RISK				
Develop and report carbon footprint.	Tonne CO2-e/ year scope 1 and 2	N/A	Sustainability Manager	End Nov 2018

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Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ♻️ = Recommendation, ◆ = Forecast	Responsible	When
NABERS waste rating (still being developed by OEH).	NABERS waste star rating	◆ H-RES ◆ GREP	Sustainability Manager/ Manager Supply Services	Dec 2019
<p>Reduce waste to landfill and introduce new recycle streams. I.e. Audit and survey existing clinical practices in line with district best practice and new district contract</p> <p>Clinical</p> <ul style="list-style-type: none"> • Improve segregation to reduce clinical waste costs • Extend Kinguard (Bluesterile mat'l) recycling to all viable areas- in 2 hospitals currently • Extend UVC/theatre plastic/Baxter recycling to all viable areas (saline bag, oxy masks etc) in 2 hospital currently (suggested for theatre and ICU etc, not wards) • Extend use of multigate single use bowls and recycling to all areas in place of non-recyclable single use bowls 	<p>Recycle rate %</p> <hr/> <p>Volume reduction</p>	<p>☑ WARR</p> <p>Improve recycle rate</p> <p>☑ MoH Directive</p> <hr/> <p>☑ H-RES (stabilise)</p>	<p>Waste Management Committee (WMC)/</p> <p>Sustainability Manager/ Manager SWSLHD Supply Services</p>	<p>Annual review by Mar 2019</p>

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Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ⊛ = Recommendation, ◆ = Forecast	Responsible	When
<p>Investigate /implement energy efficiency strategies, including improved procurement and ITD:</p> <ul style="list-style-type: none"> • Efficiency audits for lighting • Comprehensive use of lux sensors, timers, proximity switches, CO2 monitors (for carpark fans), VSD etc. • Building Information Modelling to highlight building inefficiencies • Cool roofs, green roofs, etc. • HVAC re-commissioning and upgrades. • Regular program of server consolidation • Improve ambient lighting for patient health but also minimise heat load to reduce HVAC (Ref UK NHS TLC program) • Improve lighting to minimise night-time sleep disruption, ie. Under-bed lighting or floor tracking ((Ref UK NHS TLC program) • Theatre lighting changed from halogen to LED for efficiency • Renewable alternatives for emergency generators. i.e.biodiesel 	<p>Implement energy efficiency projects (that reduce use by 10%) at sites that that represent 90% of billed energy use by 2023, with an interim HEALTH target of 55% by 2017</p> <p>Report annually to hospital committees an GREP report</p>	<p>☑ H-RES</p> <p>☑ GREP</p>	<p>Sustainability Manager/ Business and Energy Manager - Engineering</p>	<p>Annual Review by April 2019</p>

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Sector:	KPI	Existing MoH or GREP target	Responsible	When
Investigate/implement renewable energy alternatives: <ul style="list-style-type: none"> Investigate solar for all sites, include community health sites Other alternatives include vertical axis wind, biomass etc. 	Install 1 renewable per year if above 12% IRR	<input checked="" type="checkbox"/> H-RES	Sustainability Manager/ Business and Energy Manager - Engineering	Annual review by April 2019
	Report in GREP report, SWSLHD Annual report	<input checked="" type="checkbox"/> H-RES <input checked="" type="checkbox"/> GREP		
10.6 WATER reduce water use				
Streamline water reporting: <ul style="list-style-type: none"> Monthly data kL and \$ Implement water monitoring on major water meters. 	Monthly/Q report on ClickView	N/A	Sustainability Manager/ Business and Energy Manager - Engineering	Dec 2018 Annual review by Nov 2018
	Report in GREP report, SWSLHD Annual report	<input checked="" type="checkbox"/> H-RES <input checked="" type="checkbox"/> GREP		
Investigate water efficiency strategies, including improved procurement strategies and water recycling.	Report annually to hospital committees	N/A	Sustainability Manager/ Business and Energy Manager - Engineering	Annual review by June 2019

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Sector:	KPI	Existing MoH or GREP target ☑=Mandatory 🌱 = Recommendation, ◆= Forecast	Responsible	When
10.7 CHEMICAL- substitute harmful chemicals with safer alternatives				
<p>Develop Substances of Concern register for chemicals that are mutagenic, carcinogenic, toxic for reproduction, persistent and bio-accumulative or warrant similar concern review. This is not about current operation but looking at future good practice or changing legislation, examples include:</p> <ul style="list-style-type: none"> Remove mercury using equipment, from thermometers to dental amalgam, as per the Minamata convention which Australia has signed but not ratified. Minimise use of anaesthesia desflourane. It has a high Global Warming Potential and is expensive, and can be replaced by sevflourane, see Western Health Victoria case study where they are saving \$1M/year across Victoria. R22 gas and- in future- HFC used in HVAC equipment 	Report annually to district committees and WHS committee	N/A	Sustainability Manager/WHS manager	Annual review by Sept 2019
10.8 PHARMACEUTICAL- safely manage and dispose of pharmaceuticals				
<p>Review pharmaceutical waste management and disposal procedures to ensure they comply with EPA regulations and government legislation. Eg.</p> <p>Most empty medical bottles thrown in the clinical waste bin, but should be in locked pharmaceutical waste bins.</p>	Report annually to district committee	N/A	Hospital pharmacist/ Sustainability Manager	Annual review by Sept 2019
<p>Investigate and implement strategies to reduce the production of pharmaceutical waste</p> <p>Is there an excess waste problem, do you have significant out of date or returned medicines? Is over ordering an issue?</p>	Report annually to district committee	N/A	Hospital pharmacist/ Sustainability Manager	Annual review by Sept 2019

Sustainability Action Plan

Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ⊕ = Recommendation, ◆ = Forecast	Responsible	When
10.9 TRANSPORT- improve transport strategies for patients and staff				
Improve access to public transport or encourage low emission alternatives.	N/A	N/A	Mgr Population Health/Sustainability manager	Annual review by Sept 2019
Improve fleet fuel consumption.	Comply with the latest Euro and US EPA emissions standards	☑ H-RES ☑ GREP	Fleet Manager	Annual review by Sept 2019
10.10 PROCUREMENT- improve sustainable procurement				
Ensure providers source ethically produced food.	Ensure compliance	N/A	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by Dec 2019
<ul style="list-style-type: none"> • Reduce paper use: • Ensure GREP compliant procurement • Streamline reporting (purchasing and waste) • Support HPRM implementation • Implement electronic signatures. 	Report reams/month and \$	☑ H-RES ☑ GREP for paper type	Sustainability Manager/ District Right to Information & Records Manager	Annual review by Dec 2019

Sustainability Action Plan

Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ♻️ = Recommendation, ◆ = Forecast	Responsible	When
Streamline procurement reporting from Staples and others, utilise data to streamline and rationalise product lines for more sustainable product and improve bulk purchasing and reduce packaging.	Tonnes and \$ (possible t CO2-e)	\$ saving	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by Dec 2019
Tea/coffee/sugar Staff 50% Fairtrade/ Rainforest Alliance or similar certification program, or Australian grown by end 2018. 25% of on-site tea/coffee vendors to have a Fairtrade/ Rainforest Alliance or similar certification program or Australian grown by end 2018, 50% by end 2020.	Report (staples/health share)	N/A	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by Dec 2019
Comply with GREP Low VOC coatings specifications used where applicable: <ul style="list-style-type: none"> • Change standard conditions of contract • Ensure all new contracts have compliant terms • Change internal procedures. 	Report compliance in GREP report	☑ H-RES ☑ GREP	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by Dec 2019
Comply with GREP air emission standards for mobile non-road diesel plant and equipment: <ul style="list-style-type: none"> • Change standard conditions of contract • Ensure all new contracts have compliant terms • Change internal procedures. 	Report compliance in GREP report	☑ H-RES ☑ GREP	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by Dec 2019

Sustainability Action Plan

Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ♻️ = Recommendation, ◆= Forecast	Responsible	When
Comply with GREP procurement specifications for electrical and water equipment: <ul style="list-style-type: none"> • Change standard conditions of contract • Ensure all new contracts have compliant terms • Change internal procedures. 	Report compliance in GREP report	☑ H-RES ☑ GREP	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by Dec 2019
Clinical product reviews, to reduce waste, or streamline recycling <ul style="list-style-type: none"> • Can supplier take back waste as does multigate and Garamond (boxes)? • Can supplier change packing to improve recycling? • Review product streams(why so many) or the way they are ordered to free up space and recycling options • Review single use items and consider going back to laundering/ sterilising etc 	Number of product/ system reviews Number of audits and findings.	N/A	Sustainability Manager/ Manager SWSLHD Supply Services	Annual review by June 2019
10.11 BUILDINGS improve efficiency, reduce emissions and improve green space				
Review development plans to ensure they meet new NSW and MOH sustainability criteria. Develop sustainability brief for use in all capital works to ensure minimum sustainability criteria understood Review briefs to improve clinical care aspects as per the UKNHS TLC process (natural air supply, more ambient light) Review brief to include sufficient waste management space for recycling	Develop brief and review annually	N/A	Manager Capital Works / Sustainability Manager	June 2019

Sustainability Action Plan

Sector:	KPI	Existing MoH or GREP target	Responsible	When
<p>Improve existing building efficiency</p> <p>Rate all buildings under the either NABERS Hospital (electrical and water) ratings (due 2018) or the GREENSTAR precinct rating as applicable.</p> <p>Develop strategies to improve all buildings to minimum 4.5 star ratings for NABERS electrical and water.</p>	<p>Annually update property register with NABERS rating (due 2018)</p> <p>Establish suitable KP (i.e. kWh/m2)</p>	<p>☑=Mandatory 🌱 = Recommendation, ◆ = Forecast</p> <p>◆ H-RES</p> <p>◆ GREP</p> <p>◆ H-RES</p> <p>◆ GREP</p>	<p>Sustainability Manager/ Business and Energy Manager - Engineering</p>	<p>Dec 2019</p>

Sustainability Action Plan

Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ★ = Recommendation, ◆ = Forecast	Responsible	When
Improve green space inside hospitals, and use landscaping to reduce urban heat load in grounds.	Urban heat load maps % reduction in heat load Additional green space m2 in side hospital No of additional trees planted outside Additional garden space m2 outside hospital	N/A	Sustainability Manager	Annual review by Dec 2019
10.12 COMMUNITY HEALTH - improve community health practices				

Sustainability Action Plan

Sector:	KPI	Existing MoH or GREP target ☑=Mandatory ★ = Recommendation, ◆ = Forecast	Responsible	When
<p>Research areas where impact on hospital resources could be reduced by improvements in community health.</p> <p>Is there data for existing community health programs showing impact on hospital efficiency?</p> <p>See climate risk 3.2 for new programs – and we determine impact on hospital efficiency/hours and therefore determine a business case to create new community awareness program</p>	<p>\$ reduction by improving community health (reduce patient transport, reduce hospital resource impact)</p> <p>Reduction in high risk/\$ patients due to more early care</p>	<p>N/A</p>	<p>Sustainability Manager/Population health manager</p>	<p>Annual review by Sept 2019</p>

KEY ☑=Mandatory, ★ = Recommendation, ◆ = Forecast due to changing legislations

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12. Appendix A - Federal and International

The Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC)

Australia was one of 159 countries that ratified the “Paris Accords”. Australia had previously agreed to UNFCCC emission reduction of 5% on 2000 baseline by 2020, and in signing the 2015 Paris Accords Australia committed to almost doubling its previous reduction target. Australian latest report ([unity health](#)) shows Australia is on track to meet both targets¹.

United Nations Sustainable Development Goals (SDGs)

On September 25th 2015, 193 countries adopted a set of goals to “end poverty, protect the planet, and ensure prosperity for all”² as part of a new sustainable development agenda.

There are 17 SDGs and while Australia are further advanced in the majority of these than other countries, the SDG’s for Water (6); Affordable and Clean Energy (7); Sustainable Cities and Communities (11); and Responsible Consumption and Production (12), will always be of concern and are areas that the Health sector in Australia can have an impact. In the latest SDG index report, Australia’s national SDG index score has improved, but it did not improve as much as other countries and Australia has fallen 6 positions in the index ranking to 26th in the world ³(2017).

Federal

[Federal policies](#) range from how to measure our international commitments to providing grants, rebates and incentives to be more efficient and build more renewable energy plant. All federal climate change policies are currently in review. The community consultation closed in May 2017 and the review will not be complete till end 2017. “*The Government is reviewing its climate change policies to take stock of Australia’s progress in reducing emissions, and ensure the Government’s policies remain effective in achieving Australia’s 2030 target and Paris Agreement commitments.*”⁴

A recent publication is the “*Commonwealth of Australia, ‘National Climate Resilience and Adaptation Strategy’* (2015) which highlight the impact of climate change on human and environmental health.

¹ <https://www.environment.gov.au/system/files/resources/9437fe27-64f4-4d16-b3f1-4e03c2f7b0d7/files/aust-emissions-projections-2016.pdf>

² <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

³ <http://www.sdgindex.org/assets/files/2017/2017-SDG-Index-and-Dashboards-Report--regions.pdf>
table 1.5

⁴ <http://www.environment.gov.au/climate-change/review-climate-change-policies>

13. Appendix B - Specific efficiency regulation and targets

KEY =Mandatory, = Recommendation, = Forecast due to changing legislation

Area	MoH	NSW
Energy		
Implement energy efficiency projects at sites that that represent 90% of billed energy use by 2023, with an interim HEALTH target of 55% by 2017 and report	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Annual report \$ and kWh, with data on sites suitable for renewable energy production and completed projects.	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
LHDs are to complete at least one renewable energy installation per year (<i>if an internal rate of return of 12% or higher can be achieved</i>)	<input checked="" type="checkbox"/> H-RES	
Report compliance annually with new procurement standards	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Purchase light vehicles to comply with the latest Euro and US EPA emissions standards	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Water		
Annual \$ and kL report	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Stabilise water use	<input checked="" type="checkbox"/> H-RES	
Report compliance annually with new procurement standards	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Waste		
70% recycling target by 2021-22		<input checked="" type="checkbox"/> WARR
Report 3 streams (clinical, recycling and general)	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Stabilise the generation of top three waste streams (Minimise waste is also in the new clinical guidelines)	<input checked="" type="checkbox"/> H-RES	
Clinical and Related Waste Management for Health Services, Policy Directive requires health services to meet a minimum standard for waste management, including starting waste management committees	<input checked="" type="checkbox"/> Directive	
Rate all hospitals under new NABERS waste rating system. (due in GREP 2018)	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Increase the use of recycled and sustainably sourced materials ie, paper and construction materials	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Report procurement of recycled content and \$	<input checked="" type="checkbox"/> H-RES	
Building		

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Achieve a 4.5 star NABERS electrical and water under new NABERS electrical and water ratings for commercial buildings and data centres	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Achieve a 4.5 star NABERS electrical and water under new NABERS Hospital electrical and water ratings	◆ H-RES	◆ GREP
Energy - Review and update current engineering design standards for new facilities to align with minimum standards required to achieve a predicted performance of at least 4.5 stars NABERS energy rating (H-Res and GREP)	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
The Engineering Services Guideline (GL2016_020) promotes sustainable design, water and energy passive design, monitoring and sub-metering and has broad targets for energy and water efficiency including sub-metering.	<input checked="" type="checkbox"/> Guideline	
Emissions		
Report compliance annually with use of Low-VOC surface coatings all surface coatings will comply with the Australian Paint Approval Scheme (APAS) where fit for purpose.	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Report compliance annually with new standards for mobile non-road diesel plant and equipment, purchase and lease	<input checked="" type="checkbox"/> H-RES	<input checked="" type="checkbox"/> GREP
Undertake Climate Change risk assessments and adaptation planning. Adaptation plan recommendations are to be integrated into the risk management frameworks of LHD's	<input checked="" type="checkbox"/> H-RES	

H-RES = [Ministry of Health Resource Efficiency Strategy](#) 2016 to 2023

GREP = [NSW Government Resource Efficiency Policy](#)

WARR= [NSW Waste Avoidance and Resource Recovery Strategy](#).

14. Glossary

Carbon footprint - A form of carbon calculation that measures the amount of carbon dioxide equivalent that a country, a business, an industry or an individual produces or is responsible for. The footprint calculates the direct and indirect level of CO₂ -e emissions. Direct emissions include the burning of fossil fuels for energy and transportation and indirect emissions focus on the whole lifecycle of products from procuring raw materials to waste management.

Climate Adaptation - In order to adapt to the effects of climate change actions must be undertaken to help communities adjust, through behaviour change, design and delivery of services and planning and infrastructure.

Climate change - Climate change is generally understood to refer to a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.

Climate Risk Assessment – an assessment of projected impacts due to climate changes, which lead to climate adaption plans.

Energy efficiency - Reducing the amount of energy used for a given service or level of activity in order to produce the same level of end use service. Energy efficiency improvements are predominantly achieved through using technologically more advanced equipment. For example, using compact fluorescent light globes reduces the amount of electricity required for lighting.

National Australian Built Environment Rating System - NABERS is a national initiative managed by the NSW Department of Environment, Climate Change and Water. NABERS is a performance-based rating system for existing buildings. NABERS rates a building on the basis of its measured operational impacts on the environment, and provides a simple indication of how well you are managing these environmental impacts compared with your peers and neighbours.

Sustainability - There is now abundant scientific evidence that humanity is living unsustainably. Returning human use of natural resources to within sustainable limits will require a major collective effort.

Sustainable development - refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs..

Resilient or resilience - The ability or capacity to recover quickly from difficulties, toughness.



Health
South Western Sydney
Local Health District