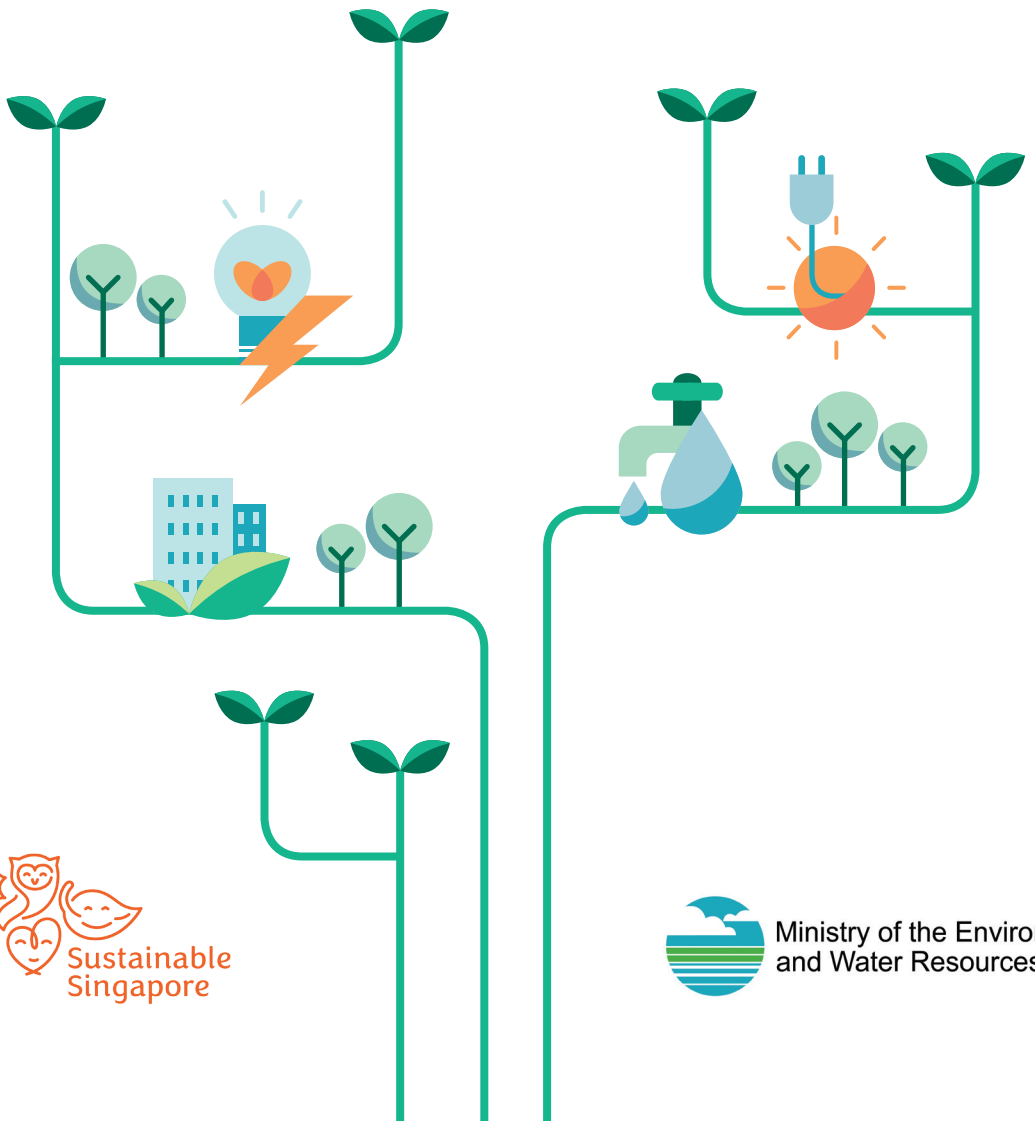
PUBLIC SECTOR SUSTAINABILITY PLAN

2017-2020



Sustainable Singapore

Ministry of the Environment and Water Resources

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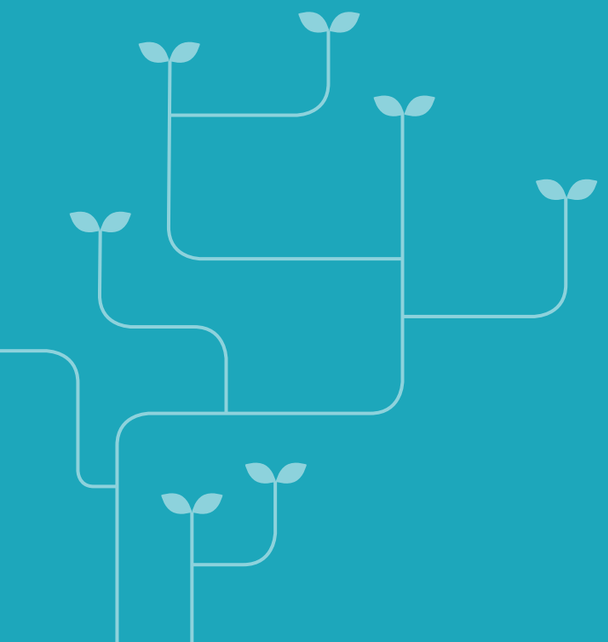
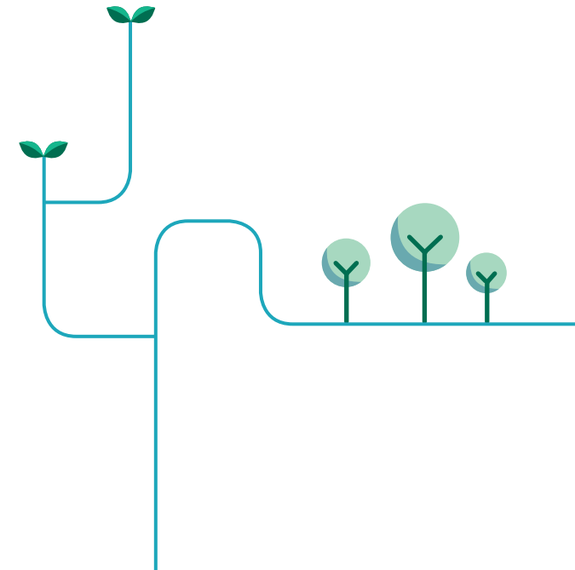




FOREWORD

We have pursued sustainable development since independence to build a Clean and Green Singapore for Singaporeans. We are continuing to build an even more sustainable living environment – consulting Singaporeans, planning carefully for the future, investing in R&D for sustainable urban solutions, and growing the green economy.

2016 was a milestone year – on the international front, the Paris Agreement on climate change came into force. Singapore played a facilitative and constructive role to forge global consensus and was among the first countries to ratify the Agreement. On the domestic front, we unveiled the Climate Action Plan "Take Action Today, for a Sustainable Future", an outline of Singapore's strategies to become more carbon-efficient and climate-resilient. We also launched the Sustainable Singapore Movement to galvanise the public sector, corporates, NGOs, and all Singaporeans to take collective environmental action. In 2017, we made decisive moves to reinforce the strategic importance of water and to make every drop count, and to factor the impact of greenhouse gas emissions through a carbon tax.

The Singapore Public Service will take the lead, charting Singapore's strategies to be more carbon-efficient and being a good steward of our resources. The Public Service comprises 16 ministries and 64 statutory boards, and employs about 145,000 public officers. From 2013 to 2015, it accounted for an average of 4% of Singapore's total electricity consumption and 3% of our total water consumption.

The Public Service will continue to drive efforts to make Singapore a more sustainable home. I am therefore pleased to introduce the Public Sector Sustainability Plan 2017–2020. This plan outlines the public sector's efforts to use our resources wisely and build up the Government's capabilities in environmental and urban sustainability. It showcases the green initiatives and projects that Government agencies have embarked on, such as procuring green office supplies and appliances, and installing digesters to recycle food waste in schools.

The public sector has set targets to reduce electricity consumption by more than 15% from FY2013 levels and reduce water consumption by more than 5% from FY2013 levels by 2020. All new public sector buildings will attain the Green Mark Platinum standard. We will also aim to have existing buildings attain at least the Green Mark Gold standard. Targets for waste reduction and solar adoption will be added in the future. These efforts will contribute to a Sustainable Singapore.

I hope that this publication will help to energise our community and corporates to do their part. Singapore is our hope, our heart, and our home. Let us strive to build a Sustainable Singapore together.

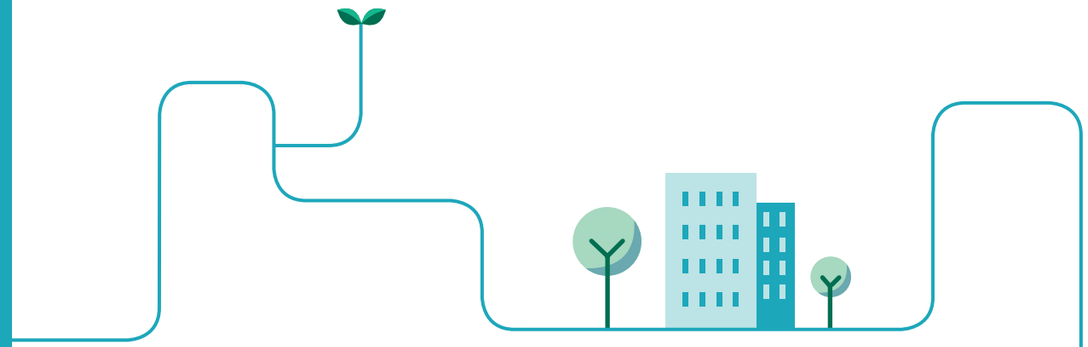
DEPUTY PRIME MINISTER TEO CHEE HEAN

Coordinating Minister for National Security
and Minister in Charge of the Public Service

INTRODUCTION

The public sector employs about 145,000 officers and operates 1,000 facilities. Given the scarcity of Singapore's energy and water supply, the public sector has to play its part in conserving these limited resources. More judicious use of our resources will also result in cost savings, and contribute to our national efforts to fight climate change and reduce our greenhouse gas (GHG) emissions.

The Public Sector Sustainability Plan 2017–2020 serves to chart the Government's path towards achieving environmental sustainability, as part of our nationwide Sustainable Singapore Movement. We invite our partners and stakeholders to join us on this journey.



ENVIRONMENTAL SUSTAINABILITY FRAMEWORK

There are four main components under the framework that guides our Sustainability Plan – Resource Management Framework, Capability Building and Resources, Sustainability Targets, and Transparency and Disclosure.

[RESOURCE MANAGEMENT FRAMEWORK]

- Sustainability Managers and Network
- Resource Management Plans
- Green Procurement

[CAPABILITY BUILDING AND RESOURCES]

- Environmental Sustainability Advisory Team
- Environmental Sustainability Guide
- Demonstration Fund

[ENVIRONMENTAL SUSTAINABILITY TARGETS]

[TRANSPARENCY AND DISCLOSURE]

Public Sector Environmental Sustainability Report

RESOURCE MANAGEMENT FRAMEWORK

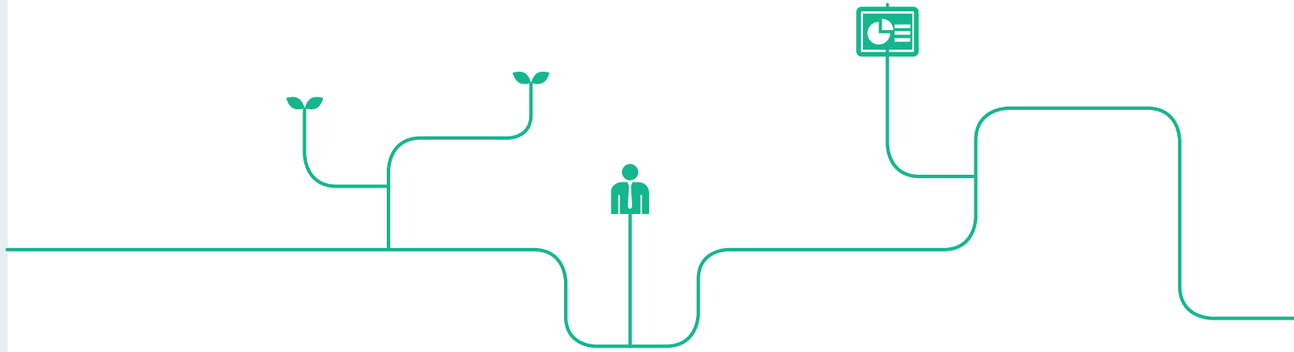
The public sector adopts an outcome-based approach whereby agencies are required to set FY2020 sustainability targets and achieve them through better resource management. To accomplish this, there is a need to build up strong capabilities and sound organisational processes within each agency.

[SUSTAINABILITY MANAGERS AND NETWORK]

All ministries and organs of state have appointed Sustainability Managers (SM). The SMs work with the Facility Managers (FM) of each agency to drive efforts on environmental sustainability within their organisations. As of March 2017, 162 SMs and FMs have attended Green Mark facility management training courses to develop their technical capabilities. A SM network has been formed for the regular sharing of best practices among the agencies.

[RESOURCE MANAGEMENT PLANS]

All ministries and organs of state have developed individual Resource Management Plans (RMPs). The RMPs document the plans and progress for resource conservation, green building certification, waste reduction, and solar adoption. The RMPs are reviewed and updated every year to ensure that the Government as a whole is on track to achieve its environmental sustainability targets. The SMs are responsible for the timely implementation of the measures in their RMPs.



[GREEN PROCUREMENT]

Since 2015, all agencies are required to purchase only paper products certified with the Singapore Green Label by the Singapore Environment Council (SEC), as well as electrical appliances certified with high energy efficiency, such as refrigerators, televisions, air-conditioners, and lamps. This builds on an earlier requirement in 2009 where the public sector only sources for Information and Communications Technology (ICT) equipment which are Energy Star certified.

Where possible, the Government has aggregated demand across agencies to achieve economies of scale. Green sourcing requirements have been included in the Government's procurement contracts.

Agencies are also required to organise events and functions in Green Mark certified venues. Agencies that are leasing office spaces are required to do so from buildings with at least a Building and Construction Authority (BCA) Green Mark Gold^{Plus} rating. The list of such green venues has increased substantially in recent years.

COMBATING HAZE THROUGH GREEN PROCUREMENT

SINGAPORE GREEN LABEL

The perennial transboundary haze pollution problem that has plagued Southeast Asia for decades is widely accepted to be caused by unsustainable and environmentally destructive land-clearing practices. Since 2015, the Government has adopted the requirement to only procure printing paper that carries the Singapore Green Label. This means that Government-procured paper is sourced from suppliers that practise sustainable land and forest management. Through this policy, the Government hopes to encourage paper and pulp manufacturers to adopt environmentally sustainable practices in their operations, and contribute towards our regional vision of achieving a haze-free Association of Southeast Asian Nations (ASEAN) by 2020.

CAPABILITY BUILDING AND RESOURCES

Central support systems and resources have been made available to support agencies in working towards their FY2020 targets.

[ENVIRONMENTAL SUSTAINABILITY ADVISORY TEAM]

The Environmental Sustainability Advisory (ESA) team provides in-house technical expertise to support SMs in their work. For example, the ESA team assists SMs to identify potential energy and water saving measures, such as upgrading air-conditioning and lighting systems or installing water meters for leak detection. The team comprises officers from the Ministry of the Environment and Water Resources (MEWR), the National Environment Agency (NEA), the Public Utilities Board (PUB) – Singapore's National Water Agency – and the BCA.

[ENVIRONMENTAL SUSTAINABILITY GUIDE]

An Environmental Sustainability Guide containing a repository of best practices, as well as recommended measures for resource efficiency, has been published to assist agencies.

[DEMONSTRATION FUND]

A Demonstration Fund has been set up to pilot innovative solutions for environmental sustainability within the public sector.

Some of the ongoing pilots include two food waste digester projects at Republic Polytechnic and Pioneer Junior College (PJC) to convert food waste to grey water or compost. These digesters can recycle at least 26 tonnes of food waste annually.

In FY2016, the integrated Energy Management System (iEMS) pilot was launched in selected large public sector buildings to monitor energy consumption and identify opportunities for energy use optimisation.

These pilot solutions will be rolled out to more public sector buildings if successful.

FROM GARBAGE TO GARDEN

MINISTRY OF EDUCATION
PIONEER JUNIOR COLLEGE

At PJC, students, staff, and canteen stall owners share a common enthusiasm – to reduce the amount of food waste sent for incineration. Together, they embarked on the pilot food waste digester project to actively segregate food waste at the source.

To facilitate the project's implementation, PJC tapped on the Demonstration Fund in 2016. The result has been nothing short of encouraging – an on-site food waste digester that can convert 20kg of food waste into compost in just 24 hours! The compost produced is now used as fertiliser for the school gardens to bolster the greening of the school.

PJC successfully recycled a total of 1.5 tonnes of food waste between April and July 2016.

"Technology can play a part in tackling environmental issues. Nonetheless, we should still focus on minimising our food waste at the source."

– Ms Priyatharshini, Student, PJC

"The food waste digester is a reminder of how much food is wasted, and this inspires us to take action. I feel really glad, because food wastage is an important issue in Singapore."

– Ms Kelly Ng, Student, PJC

"With this digester, we have a good opportunity to educate students on minimising and managing food waste. Our school will continue to build on the current efforts to educate the next generation on these environmental issues."

– Ms Jasmine Tan, Staff, PJC

ENVIRONMENTAL SUSTAINABILITY TARGETS

The public sector will set FY2020 sustainability targets in the following five areas: (i) reduction in electricity consumption; (ii) reduction in water consumption; (iii) construction and retrofitting of green buildings; (iv) waste reduction; and (v) adoption of solar energy.

Electricity

The Government aims to achieve electricity savings of 15.0% by FY2020 from our baseline electricity consumption in FY2013. Thus far, agencies have committed electricity saving measures that will collectively lead to 15.2% electricity savings by FY2020. These include "hardware" improvements, such as replacing or upgrading air-conditioning systems and lightings, and "software" actions, like promoting organisational habits that minimise electricity consumption.

The MELS Energy Label: More ticks indicate higher energy savings. Agencies rely on the Mandatory Energy Labelling Scheme (MELS) for the procurement of more energy efficient appliances, such as air-conditioners and refrigerators.

[Committed Measures]

By **FY2020,**
Electricity Savings=
15.2% of **FY2013** Baseline Consumption

Surpassing Targeted Savings of 15.0%

Electricity Savings

290 GWh /yr

The annual energy savings from the Government's committed measures amount to 290 GWh. This is sufficient to power 50,000 households for an entire year.

Cost Savings

S$60 M /yr

This is equivalent to S$60 million annual cost savings.

Carbon Emission Savings

130 kT /yr

In addition, there will be a reduction of 130 kT carbon emissions annually, equivalent to the emissions of nearly 28,000 cars in one year.

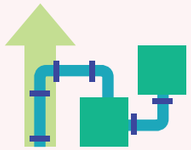
[Committed Electricity Saving Measures]

5.3% Savings

Chilled-water system retrofit

Retrofit existing chiller plants to achieve higher energy efficiency.

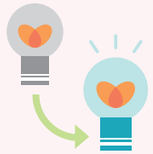
28 large public sector building owners have adopted the Guaranteed Energy Savings Performance (GESP) contracting model to improve their chiller plants. The GESP contract is a turnkey contract where an Energy Services Company (ESCO) will carry out an Investment Grade energy audit, implement the energy conservation measures, and guarantee the chiller plant efficiency and annual energy savings.



3.8% Savings

Lighting replacement

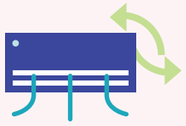
Replace existing fluorescent tubes and bulbs with more energy efficient ones.



3.0% Savings

Air-conditioners replacement

Replace aging unitary systems with more energy efficient models such as those certified with 3-tick rating and above under NEA's MELS.



2.0% Savings

Optimise equipment operation

Optimise mechanical ventilation fans, Air Handling Units (AHUs), and data centre operations. Practise energy conservation habits, such as raising the indoor temperature setting and switching off computers and lights when not in use.

1.1% Savings

Others

Other measures include upgrades of equipment such as lifts, escalators, and other appliances.

CROSS-AGENCY COLLABORATION FOR GREATER SAVINGS

HOUSING AND DEVELOPMENT BOARD WOODLANDS CIVIC CENTRE

Through inter-agency collaboration, better results on environmental sustainability can be achieved. One such collaboration took place in 2014 between the Housing and Development Board (HDB) and the National Library Board (NLB).

HDB planned to retrofit its end-of-life water-cooled chillers at the Woodlands Civic Centre (WCC). NLB's Woodlands Regional Library, a tenant at WCC, was also in need of replacing its standalone air-cooled chiller system.

Both agencies recognised the benefits of combining their chiller systems. HDB right-sized its chiller to serve both HDB's and NLB's cooling loads. As a result, the new chilled-water plant was able to operate at an efficiency of 0.60 kW/RT, a significant improvement from its pre-retrofitted efficiency of 1.25 kW/RT. Now, HDB benefits from an additional 2.3 GWh in energy savings annually, or about half a million dollars.

OPTIMISED PERFORMANCE THROUGH A HOLISTIC DESIGN

CIVIL AVIATION AUTHORITY OF SINGAPORE SINGAPORE AVIATION ACADEMY

In 2014, the Singapore Aviation Academy (SAA) retrofitted its air-conditioning system to optimise indoor air quality and improve energy efficiency.

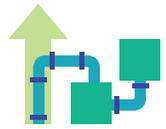
SAA retrofitted its chiller plant, replaced the aged AHUs, and equipped both with improved controls. A notable control was the newly-installed carbon dioxide sensors, which minimised unnecessary cooling of excess fresh air.

Through this measure, SAA's overall system efficiency improved, translating to annual energy and cost savings of about 120 MWh and S$24,000 respectively.

[Additional Measures]

The Government aims to keep improving our efforts to save electricity. This is done through regular review and monitoring of our energy consumption patterns, and maximising the benefits of energy efficient technologies.

Equipment and systems enhancements



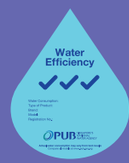
Technological advancements are constantly evolving the market for energy efficient equipment. There is potential to raise energy efficiency standards for electrical equipment procured by the public sector, and better leverage on sensor and building energy management systems for greater energy savings.

Energy audits for specialised facilities

Specialised public sector facilities such as laboratories and data centres are encouraged to undertake energy audits. This will help them to identify energy efficiency measures (e.g. moderating ventilation rate and increasing temperature set point) and optimise their energy consumption.

Water

The Government aims to achieve 5.0% improvement in the Water Efficiency Index (WEI)[1] by FY2020 from the baseline WEI in FY2013. At present, agencies have committed water-saving measures that will collectively lead to a 5.1% improvement in WEI by FY2020. This translates to about 900,000 m^3 of water savings a year. Measures include installing water efficient fittings in buildings, efficient irrigation systems, and private water metering for leak detection; replacing inefficient cooling towers; and recovering and reusing AHU condensate water.



The MWELS Water Label:
More ticks indicate higher water savings. Agencies may use Mandatory Water Efficiency Labelling Scheme (MWELS) for the procurement of more water efficient fittings.

[1] The Water Efficiency Index is the amount of water consumption per person per day across the whole public sector.

[Committed Measures]

By **FY2020,**
Water Savings=
5.1% improvement in **FY2013** Baseline WEI

Surpassing Targeted Savings of 5.0%

Water Efficiency Index	Water Savings	Cost Savings
5.1%	**900,000 m^3/yr**	**S$2.5 M/yr**
Committed Measures will improve WEI by 5.1%.	This is sufficient to fill 360 Olympic-sized swimming pools each year.	The annual cost savings will amount to nearly S$2.5 million.

[Committed Water Saving Measures]

3.2% Improvement

Flow-rate and flush volume reduction

Reduce water flow in toilets through the installation of water efficient fittings recommended under PUB's MWELS. Examples include water efficient taps, dual-flush cum low capacity flushing cisterns, and waterless urinals.

0.5% Improvement

Air-conditioning system enhancements

By increasing the Cycles of Concentration (COC) in cooling towers, less water needs to be added into the system to maintain cooling performance, increasing the water efficiency of the cooling tower.

0.4% Improvement

Swimming pool enhancements

Enhance swimming pool filters to reduce the water consumed in cleaning these filters.

0.3% Improvement

Adoption of irrigation systems and practices

Limit or eliminate the use of potable water for landscape irrigation. This can be achieved through cultivation of drought-tolerant plants, installation of water efficient irrigation systems, and adoption of good irrigation practices.

0.3% Improvement

Demand management

Reduction of washing frequency of buildings and shutting off or removing water features reduces water demand.

0.2% Improvement

Private meter installation

The installation of meters at specific water usage areas and regular monitoring of meter readings will provide first-hand information if there are any abnormalities in water usage, such as leakages, which will allow corrective action to be taken quickly.

0.2% Improvement

Others

Other measures include the implementation of engagement and outreach programmes to promote water conservation awareness and habits.

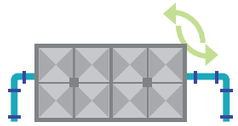
[Additional Measures]

Through additional measures, the Government will strive to go beyond the 5.1% committed savings. This can be done through stretch measures, such as installing private water meters for leak detection and reusing the condensate of AHUs.

Harvesting of rainwater

Rainwater is collected for various non-potable purposes, including flushing toilets, general washing, and irrigation. A wide range of rainwater collection systems are available. Most systems collect water from the roof via a drainpipe, and filter leaves and other debris before storing the water in a tank.

Recycle AHU condensate



Condensate can be collected and reused as make-up water for cooling towers or for irrigation purposes.

Installing rain sensors to complement water efficient irrigation systems

Rain sensors will automatically turn off irrigation systems during rainy days to avoid water wastage. This complements the adoption of water efficient irrigation systems and practices to save even more water.

SAVING WATER FROM MWELS

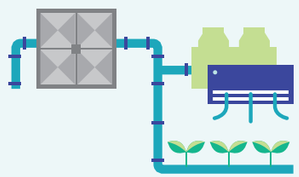
CENTRAL PROVIDENT FUND BOARD BISHAN OFFICE

PUB's MWELS aims to help consumers make better-informed decisions when purchasing water fittings and appliances.

Central Provident Fund Board, Bishan Office, upgraded their toilets in 2015 to incorporate 3-tick MWELS fittings. A total of 62 basin taps, 27 urinals, and 76 cisterns were replaced with more water efficient units. This reduced the building's annual water consumption by 2,210 m^3 – a 25% reduction or about S$6,000 in cost savings each year. Going the extra mile, the building management also encouraged users to practise water conservation through posters, emails, and other outreach efforts.

REUSING UNTAPPED CONDENSATE

MINISTRY OF EDUCATION NGEE ANN POLYTECHNIC



Every drop of water counts! In 2015, Ngee Ann Polytechnic achieved water savings of 4,800 m^3/year, translating to S$13,000 in annual cost savings.

This was thanks to an innovative water recovery system, which allowed the polytechnic to reuse condensate water generated by AHUs and fan coil units that was previously discharged. Since condensate is typically clean and cold, it was repurposed as feedstock for the cooling tower of an adjacent block. Taking it one step further, this recovery system was further integrated with a rainwater harvesting tank and irrigation system, allowing both rainwater and recycled condensate to be utilised as irrigation water for the plants in the premises.

Green Buildings

In Singapore's dense urban environment, green buildings are vital for resource sustainability. The public sector is committed to achieving the BCA Green Mark for both new and existing buildings.

New buildings are required to attain the BCA Green Mark Platinum standard – the highest rating possible. To date, 92 new public sector buildings have reached this standard.

Existing buildings are required to achieve BCA Green Mark Gold^{Plus} and Gold for large- and medium-sized buildings respectively, accomplished via retrofitting.

A 2016 study by BCA on 101 retrofitted buildings showed average annual energy savings of 17% for retrofitted buildings.

— OR —

= S$51 M /yr

[Committed Measures]

Public Sector Building Type	Target	Committed Measures
BCA Green Mark Platinum		
New Buildings[2]	All New Buildings to attain BCA Green Mark Platinum	100%
BCA Green Mark Gold^{Plus}		
Existing Large Buildings[3]	100% BCA Green Mark Gold^{Plus} by FY2020	98%
BCA Green Mark Gold		
Existing Medium Buildings[4]	100% BCA Green Mark Gold by FY2020	95%

[What Is The BCA Green Mark?]

Launched in 2005, the BCA Green Mark scheme is an internationally recognised green building rating system developed for the tropical climate. The points-based system has five key focus areas that guide the design, construction, and operation of green buildings.

5 Focus Areas

Climate Responsive Design | Building Energy Performance | Resource Stewardship | Smart and Healthy Building | Advanced Green Efforts

[2] New public sector buildings with air-conditioned floor area ≥ 5,000 m^2
[3] Existing public sector buildings with air-conditioned floor area ≥ 10,000 m^2
[4] Existing public sector buildings, excluding MOE Schools, with gross floor area ≥ 5,000 m^2 and air-conditioned floor area < 10,000 m^2

BUILDING A GREEN FUTURE

BUILDING AND CONSTRUCTION AUTHORITY
BCA ACADEMY

Zero-Energy Building

One of BCA Academy's existing buildings was retrofitted into a net Zero-Energy Building (ZEB), through a combination of green building technologies such as solar energy and natural lighting design. The building's optimised façade, roof, mechanical and electrical system, and other components also reduced its overall energy consumption. BCA benefits from annual energy savings of 390 MWh, equivalent to approximately S$78,000 in cost savings each year.

Academic Tower

The new BCA Academic Tower incorporates cutting-edge technologies, such as Singapore's first Light Emitting Plasma (LEP) lighting system, to achieve a massive 35% in energy savings! The building also saves approximately 1.5 Olympic-sized pools of water annually, through installing water efficient fittings and air-conditioning condensate recycling systems. The estimated electricity savings are approximately 970 MWh and S$194,000 each year.

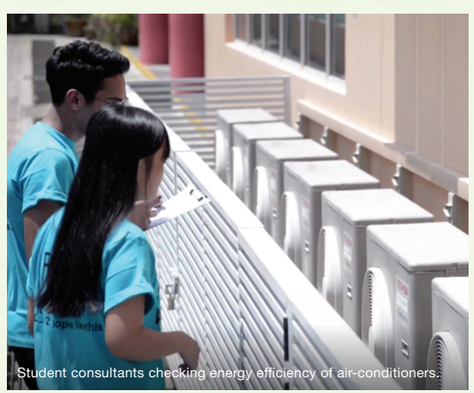
BCA Skylab

Situated atop the Academic Tower, Skylab boasts a 360-degree rotatable capability with full plug-and-play configurability, extensive instrumentation, and sensor networks. It is part of the Government's initiative to drive R&D by offering industry stakeholders a platform to better test new energy efficient building technologies within real-world conditions.

GREENING SCHOOLS FROM THE GROUND UP

BUILDING AND CONSTRUCTION AUTHORITY
BACK TO SCHOOL PROGRAMME

Student consultants teaching environmental sustainability at Chung Cheng High School (Main).



Student consultants checking energy efficiency of air-conditioners.

Mrs Rosiah Ahmad, Teacher-in-charge for Green Club at Da Qiao Primary School.

Launched by BCA, the Back to School Programme gives tertiary students internship opportunities to green their former primary and secondary schools. The programme provides great exposure and learning opportunities not just for the interns, but also for the teachers and students of the schools. Students act as Green Mark consultants to help the schools attain BCA Green Mark certification. Some of their achievements include:

- Identifying and proposing improvements to existing air-conditioning and lighting systems
- Conducting interactive sharing sessions on green buildings
- Creating a green corner learning hub for environmental sustainability topics
- Producing collaterals to promote green practices and habits

"This is a mutually beneficial programme for the school and students. We have benefitted from the insights shared by the interns and they have also applied their academic learning in school to a relevant industry environment."

– Mr Raymond Poon, Principal, Hong Wen School

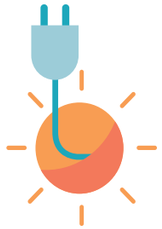
"This programme gave me the opportunity to practise what I have learned in real world context and gave me the opportunity to return to my alma mater."

– Mr Divyesh Karnavat, BCA Intern, Temasek Polytechnic

"Our school definitely benefitted from this meaningful journey where everyone is empowered to be a Green advocate. The team did a great job."

– Mrs Rosiah Ahmad, Teacher, Da Qiao Primary School

SOLAR ADOPTION



[Where We Are Today]

Solar deployment in Singapore requires innovative urban thinking, given our limited land space and heavy cloud cover.

That is where the SolarNova programme comes in. Led by the Economic Development Board (EDB) and HDB, SolarNova promotes and aggregates solar demand across agencies, with the aim of deploying solar panels on Singapore's many roof spaces, from public housing estates to public sector buildings. Collectively, agencies have committed to 116 MWp of solar deployment by FY2020. This is 33% of our national target, which is 350 MWp of solar deployment by FY2020. More agencies are expected to follow suit.

Reservoir real estate is another area of largely untapped potential. Singapore is installing a first-of-its-kind floating solar photovoltaic cell test-bed located in Tengeh Reservoir, costing S$11 million and covering three hectares. A joint project between EDB, PUB, and the National University of Singapore's Solar Energy Research Institute of Singapore (SERIS), the pilot can produce up to 3.3 GWh of electricity each year, enough to power 750 HDB households for a year. If proven to be economically viable and environmentally sustainable, wider deployment to more water bodies in Singapore will be considered.

POWERED BY SOLARNOVA

MINISTRY OF HOME AFFAIRS

The first SolarNova tender, of 76 MWp solar capacity, for HDB estates and Government facilities was awarded in 2016. Accounting for 6 MWp of this tender is the Ministry of Home Affairs (MHA), which plans to implement the solar panels across premises such as the Ministry HQ, Airport Police Division, Home Team Academy, and Tuas and Woodlands Checkpoints progressively.

The second SolarNova tender, to be awarded in 2017, will add a further 40 MWp solar capacity to 636 HDB blocks and 31 Government sites island-wide.

MOVING FORWARD

The Public Sector Sustainability Plan 2017–2020 lays out the Government's blueprint to enhance our environmental sustainability, particularly in the areas of reducing electricity and water consumption, and greening our buildings. Moving forward, we will also focus on reducing our waste footprint, given that the public sector accounts for 1.5% of total waste disposed in Singapore. Agencies have already put in place waste measurement systems and conducted a baseline measurement of waste disposed in 2015. This will help to facilitate implementation of waste reduction measures. A target for waste reduction by the public sector will be set in 2017.

For solar adoption, this will gradually be rolled out to more agencies – many of which are currently studying the potential of adopting solar energy on their premises. A target for solar adoption by the public sector will similarly be set in the future.

	Electricity Savings	Water (WEI) Savings	Green Buildings Adoption	Waste Reduction	Solar Adoption
[FY2020 SUSTAINABILITY TARGETS]	15%	5%	100%	Targets to be set	
[COMMITTED MEASURES]	15.2%	5.1%	95%	Targets to be set	

The goal of achieving environmental sustainability for Singapore will require the concerted efforts of all stakeholders in the 3P (people, private, and public) sectors. Through the Public Sector Sustainability Plan, the Government hopes to take the lead in promoting environmental sustainability, as part of our contribution towards the Sustainable Singapore Movement. We invite everyone to join us in this journey to secure a sustainable future for Singapore, and for future generations to come.

ANNEX

Green Buildings

- All new public sector buildings with more than 5,000 m^2 air-conditioned floor area are to attain the Green Mark Platinum rating.
- All existing public sector buildings with more than 10,000 m^2 air-conditioned floor area are to attain the Green Mark Gold^{Plus} rating by 2020.
- All existing public sector buildings with more than 5,000 m^2 gross floor area and less than 10,000 m^2 air-conditioned floor area are to attain the Green Mark Gold rating by 2020.

Green Office Premises

- All new public sector office premises or those that undergo major renovation are to achieve at least a Gold rating under the Green Mark for Office Interiors scheme.
- Agencies that lease office spaces are to lease from buildings with at least a Green Mark Gold^{Plus} rating when their current lease expires.

Energy Efficiency

- All air-conditioned public sector premises are to maintain the ambient indoor air temperature at 24°C or higher, as far as comfort level allows.
- Data centres with gross floor area more than 1,000 m^2 are to install separate meters, and monitor and report their energy use.

Water Efficiency

- All new and existing public sector premises are to achieve water efficient flowrates and flush volume, and attain the Water Efficient Building (WEB) (Basic) certification respectively.

Waste Management

- All agencies are to implement recycling programmes (e.g. for paper products, plastic containers and packaging, aluminium cans, toner cartridges) at their premises.
- Owners of large public sector buildings with a gross floor area greater than 10,000 m^2 are to monitor and submit the weight or volume of waste disposed of and the weight of recyclables collected to the NEA annually.

Green Procurement

- Events and functions organised by agencies are to be held in venues with at least a Green Mark Certified rating.
- All new office ICT equipment is to meet the latest Energy Star standards, where available.
- White printing paper is to be accredited with the Singapore Green Label by the SEC.
- Lamps are to be rated at least 3-ticks under the NEA's MELS.
- Air-conditioners are to be rated at least 3-ticks under MELS.
- Refrigerators are to be rated at least 2-ticks under MELS.
- Televisions are to be rated at least 4-ticks under MELS, except for 40 to 43 inch which are to be rated at least 3-ticks.