

NUS GREEN BOND REPORT

June 2021

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INTRODUCTION

In June 2020, the University successfully issued its S\$300 million inaugural green bond under the NUS Green Finance Framework. With a fixed rate coupon of 1.565%, the 10-year notes will mature in 2030.

The issuance amplifies the University's commitment to sustainability and supporting projects which have positive environmental impacts.

The NUS Green Finance Framework was prepared with the intention for the University to enter into green finance transactions to be used to fund a strong pipeline of eligible projects with clear environmental benefits, aligned to five focus areas:

- i. Green buildings or precincts;
- ii. Renewable energy and energy efficiency infrastructure and systems;
- iii. Sustainable water and wastewater management;
- iv. Pollution prevention and control; and
- v. Environmentally sustainable management of living natural resources and land use

ALLOCATION OF PROCEEDS

100% of the green bond proceeds raised in June 2020 were allocated to finance eligible projects, as described under the Eligibility Criteria in NUS' Green Finance Framework.

The proceeds were allocated to a new-build net-zero energy building for the School of Design and Environment, the refinancing of four¹ green buildings in NUS University Town ("UTown") and a building for Yong Loo Lin School of Medicine.

These abovementioned buildings have been certified Green Mark (GM) Platinum (Zero Energy), GM Platinum or GM Gold^{Plus} by the Building and Construction Authority.

The green bond proceeds remain fully allocated as at the date of this report.

¹ College of Alice & Peter Tan (CAPT), Residential College 4 (RC4), Education Resource Centre (ERC), Stephen Riady Centre (SRC)

IMPACT REPORTING (1/5)

SDE4 (in the School of Design and Environment) was the first purpose-built net-zero energy building commissioned by a tertiary institution in Singapore, and it is among the first recipients for the Green Mark Platinum (Zero Energy) award in 2019.

The building was equipped with a hybrid cooling system, which conditioned space at a higher temperature with an elevated air speed that results in lower cooling requirements as compared to conventional systems while maintaining the same thermal comfort. There is also a roof array of 1,225 solar photovoltaic (PV) panels that are capable of producing more than 510 MWh of energy per year to reduce the annual primary energy balance to zero.



IMPACT REPORTING (2/5)

In 2009 University Town (“UTown”) was the first recipient for the Green Mark District Award by BCA in recognition of its environmentally friendly and sustainable practices in master planning, design and implementation of district developments. In 2021, the four buildings were green mark recertificated¹.



¹ERC and SRC have been recertified as GM Platinum while CAPT and RC4 GM Gold^{Plus}

IMPACT REPORTING (3/5)

Each year, UTown is estimated to cut down on 3.8 million kWh of electricity, and some 244,800 cubic metres of water – equivalent to approximately 100 Olympic-sized pools. The extensive green roofs at Education Resource Centre, Stephen Riady Centre, etc are used to cleanse storm water as it filters through the plants and soil. A portion of the rainwater is then used to water campus plants while the remainder is pumped into a campus water feature.

To decrease the amount of energy required for air-conditioning, major circulation areas in UTown were designed to maximise natural ventilation, supplemented by the use of mechanical fans to create a cool environment without sacrificing comfort. UTown also houses the first district cooling plant for a tertiary institution (for centralized production and distribution of cooling energy), so that the on-demand cooling needs of its buildings can be met in as efficient a manner as possible.

IMPACT REPORTING (4/5)

MD1 (in the Yong Loo Lin School of Medicine) received the Green Mark Platinum Award in 2012, which was subsequently renewed in 2021. In addition, the chemistry laboratories on level 14 in the building were among the first recipient for the Green Mark for Laboratory Platinum Award in 2017, which recognise efforts and commitments by lab owners to reduce the environmental impact of laboratory operations.

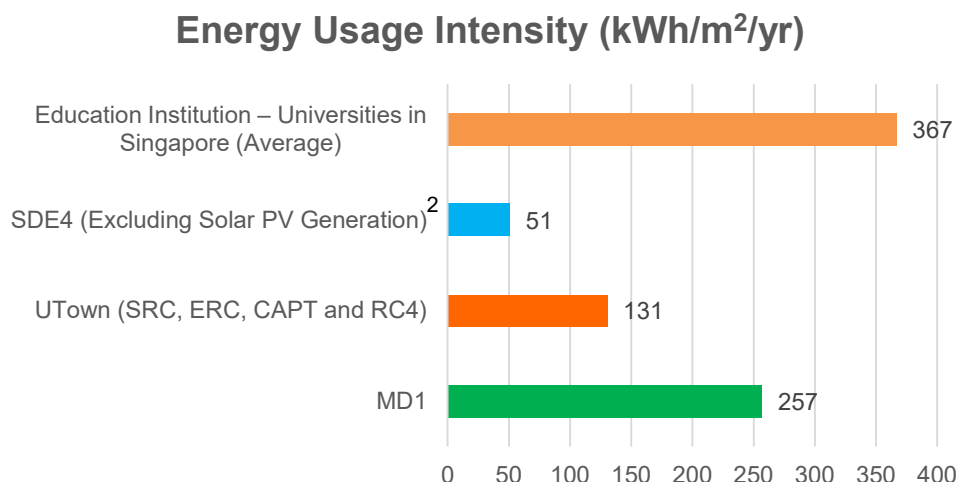


In addition to high efficient air conditioning system and lighting, the laboratories were equipped with innovative technologies such as fume hood sash controls to minimize exhaust rates, and heat recovery unit to recover waste heat, resulting in reduction in overall energy consumption.

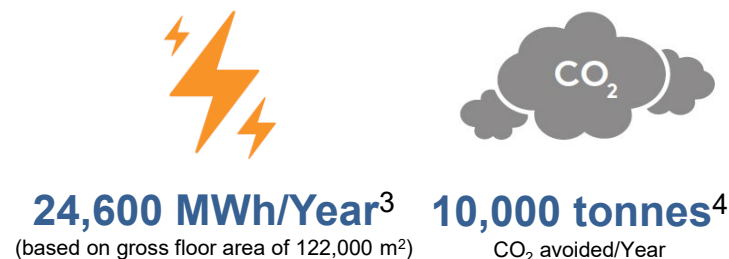
IMPACT REPORTING (5/5)

We have benchmarked the actual energy performance of these selected four buildings in UTown, MD1 and SDE4 against the average energy use intensity (EUI) for Education Institution – Universities as compiled by the Building Construction Authority (BCA) of Singapore¹.

In FY2019 (1 Apr'19 – 31 Mar'20), the achieved EUIs for the green buildings in UTown, MD1 and SDE4 are summarised in the chart below:



Estimated Energy & Carbon Emissions Avoided in FY2019



¹ Baseline EUI reference from BCA Building Energy Submission System (BESS) website (<https://www.bca.gov.sg/BESS/BenchmarkingReport/BenchmarkingReport.aspx>)

² The EUI for SDE4 was calculated purely based on the building's overall energy consumption without taking account of any renewable energy generated within the building footprint. If renewable energy is considered the annual EUI will be zero as the solar energy generated is more than the building's energy consumption.

³ The energy savings is based on the difference between energy consumption computed from average EUI for Education Institution (367 kwh/m²/yr) and actual consumption of NUS buildings.

⁴ Carbon emission calculated based on grid emission factor as published by EMA (https://www.ema.gov.sg/statistic.aspx?sta_sid=20140729MPY03nTHx2a1)

INDEPENDENT ASSURANCE

NUS has engaged Ernst & Young LLP to provide independent limited assurance on our first anniversary reporting and management of proceeds in accordance with NUS Green Finance Framework.

The Independent Limited Assurance Report is appended in Annex 1.



Annex 1

EY Independent Limited Assurance Report



**Building a better
working world**

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Independent Limited Assurance Report to the Management of National University of Singapore (“NUS”)

Assurance conclusion

Based on our limited assurance procedures, as described in this statement as of 25 June 2021, nothing has come to our attention that causes us to believe that the relevant post-issuance processes do not meet the requirements of NUS’ Green Finance Framework and the Green Bond Principles (June 2018), in all material aspects.

Scope

We have performed a limited assurance engagement in relation to the post-issuance processes in relation to NUS’ S\$300 million green bond issuance in June 2020 (“Green Bond”), in order to provide a conclusion as to whether anything has come to our attention that causes us to believe that the subject matter detailed below (“Subject Matter”) does not meet, in all material respects, the criteria as presented below, as at 25 June 2021.

Subject Matter and Criteria

The Subject Matter and associated Criteria for this limited assurance engagement are set out in the table below:

Subject Matter	Criteria
<p>Post-issuance process for NUS’ S\$300 million Green Bond, as described in the NUS’ Green Finance Framework (the “Framework”) and NUS Green Bond June 2021 report (the “Report”), that sets out:</p> <ul style="list-style-type: none"> ▶ Management of Proceeds ▶ Reporting on use of proceeds and project performance 	<ul style="list-style-type: none"> ▶ NUS’ Green Finance Framework dated 30 April 2020 ▶ The Green Bond Principles (June 2018) (“GBP”) requirements on: <ul style="list-style-type: none"> ▶ Use of Proceeds ▶ Process for Project Evaluation and Selection ▶ Management of Proceeds ▶ Reporting ▶ Respective GBP criteria found at below link: ▶ https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf

Management Responsibilities

Management is responsible for selecting Criteria, and for presenting the Subject Matter in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the subject matter, such that it is free from material misstatement, whether due to fraud or error.

Auditor’s responsibility

Our responsibility is to express a conclusion on the presentation of the Subject Matter based on the evidence we have obtained.

We conducted our engagement in accordance with the International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information (‘ISAE 3000’) and the terms of reference for this engagement as agreed with NUS on 20 March 2020. Those standards require that we plan and perform our engagement to obtain limited assurance about whether, in all material respects, the Subject Matter is presented in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error. We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.



Auditor's responsibility (cont'd)

Our review was limited to the information within the Framework and the Report and our responsibility does not include:

- ▶ Any work in respect of sustainability information published elsewhere in NUS' website and other publications, and
- ▶ Management's forward-looking statements such as targets, plans and intentions.

Auditor's Independence and Quality Control

We have complied with the independence and other ethical requirements of the Accounting and Corporate Regulatory Authority (ACRA) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (ACRA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Singapore Standards on Quality Control 1 of the Institute of Singapore Chartered Accountants and, accordingly, maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have the required competencies and experience to conduct this assurance engagement. Our professionals have experience in both assurance skills and in the applicable subject matter including environmental, social and financial aspects.

Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the Subject Matter and related information, and applying analytical and other appropriate procedures.

Our procedures included:

- ▶ Reviewing NUS' Green Finance Framework to understand the policies, procedures and criteria
- ▶ Interviewing selected management and team members to understand the key issues in relation to the Framework
- ▶ Reviewing policies and procedures for project evaluation and selection, management of proceeds, information disclosure and reporting for NUS' proposed Green Bond issuance
- ▶ Reviewing documents supporting eligibility of the nominated projects
- ▶ Confirming eligibility of nominated projects for inclusion in NUS' proposed Green Bond against the GBP and NUS' Green Finance Framework criteria
- ▶ Confirming internal systems and processes function, and obtaining supporting evidence
- ▶ Obtaining and reviewing evidence to support key assumptions and other data
- ▶ Seeking management representations from NUS on key assertions

Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to the Subject Matter as of 25 June 2021, in order for it to be in accordance with the Criteria.

Restricted use

This report is intended solely for the information and use of the Management of NUS and is not intended to be and should not be used by anyone other than those specified parties.

Observations on particular aspects of our engagement

We provide selected observations aligning to NUS' Green Finance Framework and the GBP core components, to enable the reader to gain an understanding on how the relevant post-issuance processes meet the Criteria.

These observations are not intended to detract from our conclusion provided above.

Use of Proceeds:

- ▶ Proceeds from the Green Bond were used for financing and refinancing purposes
- ▶ The use of proceeds of the Green Bond aligns with the NUS Green Finance Framework and the GBP's indicative list of project categories. Specifically, the eligible project category relevant for the Green Bond must attain a minimum of "Singapore Building and Construction Authority ("BCA") Green Mark: BCA Green Mark Gold^{plus} rating and/or an equivalent"

Process for Project Evaluation and Selection:

- ▶ NUS has implemented the necessary processes and procedures for project evaluation and selection as stated in the Green Finance Framework which outlines the environmental objective of the proposed Green Bond, eligibility criteria for determining green projects and the process for project selection and evaluation.
- ▶ As part of NUS' annual review of the Green Project Register, it was presented to Sustainability Steering Committee only as the role of Deputy President of Admin and Finance is no longer in existence. Role has been succeeded respectively by Deputy President of Administration and Chief Financial Officer to oversee the different functions.

Management of Proceeds:

- ▶ NUS has implemented processes to manage initial funds received from the Green Bond and to monitor the ongoing use of proceeds. These processes include:
 - ▶ An ear-marking process through existing internal systems to designate the proceeds received
 - ▶ A process for deploying any unallocated proceeds to temporary cash equivalent investments
 - ▶ A process for monitoring the on-going use of proceeds
- ▶ NUS has fully allocated proceeds of the Green Bond

Reporting:

- ▶ NUS will report on allocation and the environmental impacts of the Green Bond in the Report to be published on NUS' website
- ▶ This Report includes a list of eligible assets to which proceeds of the Green Bond have been allocated, the total amount of Green Bond allocated, and the environmental performance and impacts attributed to the eligible assets.
- ▶ NUS has sought independent limited assurance post-issuance of its first annual Green Bond report

Ernst & Young LLP



Signed for Ernst & Young LLP by
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25 June 2021