



Nanyang Technological University
50 Nanyang Ave
Singapore 639798

Attention: The Board of Trustees

1 September 2022

Our ref: ASR RA 1719670 / FEL / LBY (13)
(When Replying Please Quote Our Reference)

**INDEPENDENT PRACTITIONER'S LIMITED ASSURANCE REPORT ON
IDENTIFIED SUSTAINABILITY INFORMATION OF NANYANG
TECHNOLOGICAL UNIVERSITY FOR THE YEAR ENDED 31 DECEMBER 2021**

Dear Sirs

We have been engaged by Nanyang Technological University ("NTU") to undertake a limited assurance engagement in respect of selected sustainability information from the Sustainability-Linked Bond Performance Statement (the "Statement") of NTU for the year ended 31 December 2021 attached as Appendix II (hereon referred to as the "Identified Sustainability Information").

Reporting Criteria

The Identified Sustainability Information has been assessed against the Reporting Criteria as set out in Appendix I.

Management's Responsibility for the Identified Sustainability Information

Management of NTU is responsible for establishing the Reporting Criteria and for the preparation of the Identified Sustainability Information in accordance with the Reporting Criteria. The responsibility includes designing, implementing and maintaining internal control relevant to the preparation of Identified Sustainability Information that is free from material misstatement, whether due to fraud or error.

Practitioner'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 Standard on Quality Control 1 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.

Practitioner's Responsibility

Our responsibility is to express a limited assurance conclusion on the Identified Sustainability Information based on the procedures we have performed and the evidence we have obtained. We performed our limited assurance engagement in accordance with Singapore Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements other than Audits or Reviews of Historical Financial Information and, in respect of greenhouse gas emissions included in the Identified Sustainability Information, Singapore Standard on Assurance Engagements 3410 – Assurance Engagements on Greenhouse Gas Statements (collectively the “Standards”). These Standards requires that we plan and perform our work to form the conclusion about whether the Identified Sustainability Information is free from material misstatement. The extent of our procedures depends on our professional judgment and our assessment of the engagement risk.

A limited assurance engagement involves assessing the suitability in the circumstances of NTU's use of the Reporting Criteria as the basis for the preparation of the Identified Sustainability Information, assessing the risks of material misstatement of the Identified Sustainability Information whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the Identified Sustainability Information. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks

The procedures selected included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. Given the circumstances of the engagement, we also performed the following:

- evaluated the suitability of the Reporting Criteria as a basis to prepare the Identified Sustainability Information;
- interviewed management and related personnel responsible for the Identified Sustainability Information;
- obtained an understanding of how the Identified Sustainability Information is gathered, collated and aggregated internally;
- performed limited substantive testing, on a selective basis, of the Identified Sustainability Information (i) to verify the assumptions, estimations and computations made in relation to the Identified Sustainability Information; and (ii) to check that data had been appropriately measured, recorded, collated and reported, to the extent we considered necessary and appropriate to provide sufficient evidence for our conclusion; and
- considered the disclosure and presentation of the Identified Sustainability Information.



The 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. Accordingly, we do not express a reasonable assurance opinion about whether NTU's Identified Sustainability Information has been prepared, in all material respects, in accordance with the Reporting Criteria.

Inherent Limitations

The absence of a commonly used generally accepted reporting framework or a significant body of established practice on which to draw to evaluate and measure subject matter allows for different, but acceptable, measurement techniques that can affect comparability between entities and over time. As there are currently no legislative requirements or regulation prescribing the preparation, disclosure and verification of the Identified Sustainability Information, the Identified Sustainability Information needs to be read and understood together with the Reporting Criteria.

The quantification of the greenhouse gas emissions data underlying the Identified Sustainability Information is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases, and the estimation uncertainty from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge. This can affect the ability to draw meaningful comparison of NTU's greenhouse gas emissions over time.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Identified Sustainability Information for the year ended 31 December 2021 is not prepared, in all material respects, in accordance with the Reporting Criteria.

Purpose and Restriction on Distribution and Use

This report, including our conclusion, has been prepared solely for NTU in accordance with the letter of engagement between us. Save for the disclosure of our report on NTU's website, neither this report nor its contents or any part thereof may be distributed to, discussed with or otherwise disclosed to any third party without our prior written consent. NTU is responsible for all other information, other than our report, on NTU's website and our report does not cover this other information, and we do not express any form of assurance conclusion thereon. To the fullest extent permitted by law, we do not accept any liability or assume any responsibility to anyone else other than NTU for our work or this report. Any reliance placed on this report by any third party is entirely at its own risk. NTU is responsible for its website and that we do not accept responsibility for any changes that may have occurred to the Identified Sustainability Information or Reporting Criteria



since they were initially presented on the website.

Yours faithfully

PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Public Accountants and Chartered Accountants

Singapore



Reg. No. 200604393R

Appendix I

Reporting Criteria

This Reporting Criteria document sets out the principles, criteria and scope used to report the Identified Sustainability Information of Nanyang Technological University ("NTU" or the "University") in connection with its sustainability Key Performance Indicators under the NTU Sustainability-Linked Bond Framework (October 2021).

NTU's management is responsible for having appropriate controls and procedures in place to prepare the Identified Sustainability Information in accordance with these Reporting Criteria. The Identified Sustainability Information relates to the period for the calendar year ended 31 December 2021.

I. General reporting principles

In preparing these reporting criteria, we have considered the following principles:

- Data is as accurate and complete as practical and feasible.
- Assumptions or estimations are used where actual data is unavailable or unreliable.
- Consistent boundaries and methodologies are used wherever possible to allow comparison over time.

II. Organisational boundary for the Identified Sustainability Information

The Identified Sustainability Information covers NTU's operations in the NTU Yunnan Campus in Singapore only.

Unless otherwise stated, the Identified Sustainability Information covers the period from 1 January 2021 to 31 December 2021.

III. Scope of reporting

Our Identified Sustainability Information, which comprises our gross carbon emissions from electricity consumption (Scope 2) and gross carbon emissions intensity from electricity consumption, covers our operations in the NTU Yunnan Campus in Singapore only. NTU Yunnan Campus is defined as the main campus located at 50 Nanyang Ave, 639798. Under the operational control approach, a company accounts for 100% of emissions from operations over which it has operational control. Our data is presented on this basis, unless otherwise stated.

The gross carbon emissions and intensity data is collected and aggregated based on the following data sources:

- Electricity: invoices from electricity suppliers
- Gross floor area: The GFA data source is collected and aggregated through approval granted in Written Permissions issued by the Urban Redevelopment Authority.

Office of Finance

76 Nanyang Drive, Block N2.1, Basement 3, Singapore 637331, www.ntu.edu.sg



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We use third party data where possible, to promote data accuracy and consistency, and only use internal data, proxy data, assumptions or extrapolation in the absence of third party data.

IV. Scope 2 gross carbon emissions from electricity consumption

We report our carbon emissions with reference to the Greenhouse Gas Protocol:

- Scope 2 – Indirect GHG emissions from purchased electricity consumed. Energy / electricity consumed is measured in kWh.

All our emissions data from electricity is measured in kilograms of carbon dioxide equivalent (kgCO₂e) unless otherwise stated.

We use the Singapore Energy Market Authority (EMA) Grid Emission Factor (GEF) that is annually revised for our emissions factor.

V. Scope 2 gross carbon emissions intensity from electricity consumption

Gross carbon emissions intensity is measured in kilograms of carbon dioxide equivalent per square metre (kgCO₂e/m²), defined as follows:

$\text{Gross carbon emissions intensity (kgCO}_2\text{e/m}^2\text{)} = \frac{\text{(Energy Consumed (kWh) x Grid Emission Factor)}}{\text{Gross Floor Area (m}^2\text{)}}$
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Gross floor area is defined the total area of the covered floor space measured between the centre line of party walls, including the thickness of external walls but excluding voids. It relates to completed projects and buildings in operation located in the NTU Yunnan Campus as reflected in Written Permissions issued by the Urban Redevelopment Authority. Gross floor area is taken at a point time at the end of the reporting period.



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Appendix II

**Nanyang Technological University
Sustainability-Linked Bond Performance Statement
For the year ended 31 December 2021**

Identified Sustainability Information

Key Performance Indicator	Unit	For the year ended 31 December 2021
Scope 2 gross carbon emissions – electricity consumption	kgCO ₂ e	75,120,856
Scope 2 gross carbon emissions intensity – electricity consumption	kgCO ₂ e/m ²	54*

*Rounded to the nearest whole number

The Identified Sustainability Information is prepared in accordance with the Reporting Criteria as set out in Appendix I.

Signed: 

Name and position: Ong Eng Hock (Chief Financial Officer)

On behalf of Nanyang Technological University