

Seminar on Integrity and Professional Development in Testing and Certification Industry

檢測認證誠信及專業發展研討會



Carbon Auditing in ESG - Professional Development in Testing and Certification Industry

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香港專業審核師學會

18 September 2023

ESG stands for environmental, social and governance. These are three key criteria when measuring the sustainability development of an organization for disclosure in ESG reporting. The goal of ESG is to capture all the non-financial risks and opportunities inherent to a company's day to day activities, and promotes the unification of economic value and social value

Up to today, there is no international agreed ESG Disclosure guidelines. Most of the common ESG disclosure items set by some Stock Exchange, leading international NGOs or trade organizations includes corporate social responsibility, environmental standards and compliance with system or product liability and safety requirements.

ESG 是企業關於環境、社會和治理的信息披露體系。這是在ESG 報告中，衡量企業可持續發展的三個核心框架。ESG的目標是捕捉企業日常活動中的所有非財務風險和機遇，促進統一的經濟價值和社會價值。

迄今為止，國際尚無一致商定的 ESG 披露指南。一些證券交易所、領先的國際非政府組織或貿易組織製定的ESG披露項目，大多包括企業社會責任、環境標準、合規義務、體系或產品責任和安全要求。

HKEx ESG Disclosure

The Hong Kong Exchanges and Clearing Limited (HKEx) had launched a revised “Environmental, Social and Governance (ESG) Reporting Guide” in December 2019. The revised guidelines cover two levels of disclosure obligations: (a) mandatory disclosure requirements; and (b) “comply or explain” provisions. The disclosure responsibility for Scope KPIs has been raised to “comply or explain”, with the relevant amendments effective for fiscal years beginning on and after 1 July 2020. This means that listed companies in Hong Kong are required to disclose more about their ESG activities and results in their ESG reports.

香港交易所 ESG 披露

香港聯合交易所（港交所）於2019年12月修訂《環境、社會及管治（ESG）報告指引》。修訂後的指引涵蓋兩個層面的披露義務：(a) 強制披露規定；(b) “不遵守就解釋” 條文；範圍及關鍵績效指標的披露責任已提高為“不遵守就解釋”，相關修訂在2020年7月1日及之後開始的財政年度生效。這意味著香港上市公司需要在其ESG報告中披露更多有關其ESG活動和結果的信息。

HKEx ESG Disclosure

The new Guide concerns Environmental & Social subject areas, whereas the Governance section continues to be addressed in the separate Corporate Governance Code. For Environment and Social subject areas, there are 12 aspects and 36 Key Performance Indicators (“KPIs”) and for each, the Guide sets out ‘general disclosures’ and ‘KPIs’ to be reported in order for an issuer to demonstrate how they have performed.

香港交易所 ESG 披露

新指南涉及環境和社會主題領域，而管治部分繼續在單獨的《公司管治準則》中討論。環境和社會主題領域均包含 12 個層面和 36 個關鍵績效指標（“KPI”），指引針對每一個層面都規定了“一般披露”和需要報告的“KPI”，以便報告發行人展示其績效。

In Mainland

T/CERDS 2-2022: Guidance for enterprise ESG disclosure provides 4 levels of corporate ESG disclosure framework, comprise of disclosure principles; disclosure indicator system; disclosure requirements and application; responsibility and supervision. Level I indicator representing the 3 basic criteria of Environmental, Social and Corporate Governance, the Level II indicator (10 number) and Level III indicator (35 number) are based on ESG related theories, relevant laws, regulations and standards; and Level IV indicator (118 number) stating the corresponding measurement and evaluation methods.

在內地

T/CERDS 2-2022：企業ESG披露指南提供了4個級別的企業ESG披露框架，包括披露原則；披露指標體系；披露要求和應用；責任和監督。一級指標代表環境、社會和企業管治3項基本準則，第二級指標（10個）和第三級指標（35個）針對ESG相關理論、相關法律法規和標準；第四級指標（118個）說明相應的測量和評估方法。

KPIs in Part C “Subject Area A. **Environmental**”

Aspect (層面) A1: Emissions

KPI (關鍵績效指標)

HKEx ESG Disclosure

How to prepare an ESG Report

Appendix 2: Reporting Guidance on Environmental
KPIs (<https://www.hkex.com.hk>)

KPI A1.1 The types of emissions and respective emissions data.

KPI A1.2 Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).

KPIA1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).

KPIA1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).

KPI A1.5 Description of emissions target(s) set and steps taken to achieve them.

KPI A1.6 Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them.

KPIs in Part C “Subject Area A. Environmental”

Aspect (層面) A2: Use of Resources

KPI (關鍵績效指標)

- KPIA2.1 Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).
- KPIA2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).
- KPIA2.3 Description of energy use efficiency target(s) set and steps taken to achieve them.
- KPIA2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them.
- KPIA2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.

KPIs in Part C “Subject Area A. Environmental”

Aspect (層面) A3: The Environment and Natural Resources

KPI (關鍵績效指標)

KPI A3.1 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.

Aspect (層面) A4: Climate Change

KPI (關鍵績效指標)

KPI A4.1 Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them.

KPIs in Part C “Subject Area A. Environmental”

Aspect (層面) A1: Emissions

KPI A1.1 The types of emissions and respective emissions data.

This KPI is concerned with air pollution produced by the issuer. The issuer needs to identify operational activities that give rise to emissions of air pollutants. In Hong Kong and the Pearl River Delta, for example, key air pollutants are nitrogen oxides (“NOX”), sulphur oxides (“SOX”) and respiratory suspended particles (“RSP”, also known as Particulate Matter (“PM”)) produced locally by motor vehicles, marine vessels, power plants, and industrial and commercial processes. NOX and SOX emissions are also generated from cement, construction and textiles industries.

What to report

Emissions data from gaseous fuel consumption; and
Emissions data from vehicles.

KPIs in Part C “Subject Area A. Environmental”

Aspect (層面) A1: Emissions

KPI A1.2 Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).

This KPI is concerned with the global warming effect of **greenhouse gas (“GHG”) emissions**. The issuer needs to **identify operational activities that give rise to GHG emissions**. This KPI will be most relevant to issuers with high energy use and those involved in industrial processes such as manufacture of cement, glass, chemicals, etc.

GHG emissions can be **classified into three scopes**:

- **Scope 1** – Direct emissions from operations that are owned or controlled by the company;
- **Scope 2** – “Energy indirect” emissions resulting from the generation of purchased or acquired electricity, heating, cooling and steam consumed within the company; and
- **Scope 3** – All other indirect emissions that occur outside the company, including both upstream and downstream emissions.
(Reporting on Scope 3 emissions is not required as part of this KPI)

Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).

Note: Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

What to report

- ✧ **Scope 1** – Direct emissions by equipment that is controlled by the issuer and/ or located within the physical boundary of its operations. These principally result from the following activities:
 - Combustion of fuels in stationary sources (excluding electrical equipment) to generate electricity, heat, or steam. For example: electricity generators, boilers, gas cooking stoves, etc.;
 - Combustion of fuels in mobile sources (e.g. motor vehicles and ships) controlled by the reporting entity;
 - Intentional or unintentional GHG releases from equipment and systems. For example: Hydrofluorocarbons (“HFC”) and perfluorocarbons (“PFC”) emissions during the use of refrigeration and air conditioning equipment and other fugitive emissions; and
 - Issuers may also report GHG emissions reductions/ removals such as through assimilation of carbon dioxide into biomass through tree planting.

What to report

- ✧ **Scope 2** – Energy indirect emissions. The issuer should quantify and report GHG emissions associated with consumption of purchased electricity and / or gas that is consumed by its controlled equipment or its operations within the physical building boundary. The two main sources of Scope 2 emissions are:
 - Electricity purchased from power companies; and
 - Gas purchased from Towngas (for companies with operations in Hong Kong); and

- ✧ **Scope 3** – Other indirect emissions (optional). The issuer may choose to quantify and report other indirect GHG emissions that are relevant to their activities and goals. Scope 3 GHG emissions may include:
 - Methane gas generation at landfill in Hong Kong due to disposal of paper waste;
 - GHG emissions due to electricity used for fresh water processing by the Water Services Department;
 - GHG emissions due to electricity used for sewage processing by the Drainage Services Department;
 - Business travel by employees;
 - Emissions from outsourced activities or other contractual arrangements;
 - Use of sold products and services; and
 - Waste disposal other than those covered in the above list.

Question:

What should an issuer disclose for the purpose of KPI A1.2?

Answer:

Scopes of emissions are defined in accordance with the international reporting framework published by the World Resources Institute / World Business Council for Sustainable Development, as reported in *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*. Also see the Hong Kong Government's "Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong" (https://www.epd.gov.hk/epd/sites/default/files/epd/english/climate_change/files/Guidelines_English_2010.pdf).

Issuers are required to report on both Scope 1 and Scope 2 GHG emissions on a "comply or explain" basis “不遵守就解釋”, and are encouraged to report on Scope 3 GHG emissions.

T&C's Contribution in Supply Chain

As companies increasingly seek to promote their ESG credentials, avoid accusations of greenwashing, and meet fast changing incoming international regulations, the T&C sector is playing a crucial role, not only in verifying ESG standards or regulations but also in providing guidance to help companies navigate these often-complex ESG issues. These companies entrust the testing and certification sector to conduct product or material testing, supplier audits and/or different types of verifications/certifications on their behalf either voluntarily or under existing sectorial rules and international regulations that are applicable worldwide. They can make **appropriate decision based on details, impartial and reliable results.**

T & C 對供應鏈的貢獻

隨著越來越多這些公司尋求提升其 ESG 資質、避免被指控漂綠，並且滿足快速變化的國際法規，T&C行業正在發揮著至關重要的作用，不僅在驗證 ESG 標準或法規方面，而且還提供指導以幫助企業應對這些通常很複雜的 ESG 問題。這些企業自願性或者根據環球適用的現有行業規則和國際法規，委託檢測和認證機構代表他們進行產品或材料測試、供應商審核和/或不同類型的驗證/認證。他們可以**根據詳盡、公正和可靠的檢查審核結果做出適當的決定。**

T&C's Role in Investment Sector

Besides assisting different stakeholders in supply chain, T&C bodies also have various roles in investment sector. First, in the environmental area, it can define and measure a company's carbon footprint. Second, it can help companies offset their carbon emissions through carbon credits and then verify those. Third, they can help companies define and disclose all their ESG activities. And, finally, they can help investors verify the ESG claims of target companies in which they may invest or have invested in.

T&C 在投資領域的作用

除了協助供應鏈中的不同持份者外，T&C 機構還在投資行業上發揮各種作用。首先，在環境領域，它可以定義和衡量企業的碳足跡。其次，它可以幫助企業通過碳信用額抵消其碳排放，然後進行驗證。第三，它們可以幫助企業定義和披露所有 ESG 活動。最後，他們可以幫助投資者驗證他們可能投資或已經投資的目標企業的 ESG 宣稱聲明。

T&C's Role in Investment Sector

Due to regulation, institutional and individual investors demand for ESG investments worldwide, asset managers need to verify the ESG claims of the companies whose securities they own is growing. As ESG investing has become a significant and seemingly permanent force, so too has corporate “greenwashing“, or the putting of the best possible spin on ESG claims. Much to the chagrin of investors, some of those claims have turned out to be wildly inflated and, sometimes, totally fictitious. As a result, investors more than ever feel compelled to verify corporate methodologies and results, relying on T&C sector companies and professional auditors for that service.

T&C 在投資領域的作用

基於法規，機構和個人投資者對全球 ESG 投資有所需求，資產管理企業對驗證其所持有證券的公司 ESG 聲明，需求不斷增長。隨著 ESG 投資已成為一股重要且看似永久的動力，企業“漂綠”也已經成為一股趨勢。令投資者大為懊惱的是，其中一些企業 ESG 宣稱被證明是嚴重誇大，有時甚至完全是虛構的。因此，投資者比以往任何時候都更需要依賴 T&C 提供的服務來驗證企業的方法和結果。

There were 228 accredited laboratories, 26 accredited certification bodies and professional auditor certification body in Hong Kong. Other than traditional system certification services of ISO9001 Quality management system, ISO14001 Environmental management system, ISO45001 Occupational health and safety, ISO50001 Energy management, ISO37301 Compliance management systems, and ISO 14064 Greenhouse gas validation and verification etc, **the involvement of T&C in ESG includes measuring carbon footprints, verifying carbon credits, and verifying the ESG claims of companies for their potential investors. Multi-national corporations may make reasonable ESG claims based on the results provided by an independent 3rd party T&C body; the integrity and professionalism of auditor safeguard the credibility in sustainability reporting.**

香港共有228家認可實驗室、26家認可認證機構和專業審核人員認證機構。除傳統的ISO9001質量管理體系、ISO14001環境管理體系、ISO45001職業健康安全、ISO 50001能源管理、ISO 37301合規管理等體系認證、及ISO 14064 溫室氣體排放查證服務外，**T&C 在 ESG 有多方面的參與，包括測量碳足跡、驗證碳信用額以及驗證公司其潛在投資者的 ESG 宣稱。跨國企業可以根據獨立的第三方 T&C 機構提供的結果提出合理的 ESG 宣稱。審核師的誠信和專業保障了可持續發展報告的可信度。**

Hong Kong Institution of Certified Auditors (HKICA)

- HKICA was set up in 2006, a learnt society and professional body
- In May 2016, the HKICA certified by China National Accreditation Service for Conformity Assessment (CNAS) to ISO/IEC 17024: Certification for Person



- In August 2016, HKICA reached Mutual Recognition with China Certification and Accreditation Association (CCAA)



- In June 2018, HKICA joins International Personnel Certification Association (IPC) as Full Member



- In October 2018, HKICA becomes MLA Signatory of IPC



International Personnel Certification Body

2016年5月，獲得中國合格評定國家認可委員會（CNAS）依據ISO17024的認可，成為人員驗證機構。

HKICA system bench marking to ISO17024 certified by China National Accreditation Service for Conformity Assessment (CNAS). (5/2016)



2016年8月，與中國認證認可協會(CCAA)達成互認協議。

HKICA reached MRA agreement with China Certification and Accreditation Association (CCAA). (8/2016)



International Personnel Certification Body



中国认证认可协会



中国认证认可协会
CHINA CERTIFICATION & ACCREDITATION ASSOCIATION
CCAA

温室气体核查员
注册准则
(第1版)

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HKICA
Hong Kong Institution of Certified Auditors
香港專業審核師學會

HKICA-CC801E

Personnel Certification Scheme of GHG Carbon Auditors
Certification Criteria

The Secretary, Room 108, 1/F Sun Ling Plaza, 30 On Kui Street,
Fanling, New Territories

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INTERNATIONAL PERSONNEL CERTIFICATION ASSOCIATION



INTERNATIONAL PERSONNEL CERTIFICATION ASSOCIATION
IPC
International Personnel Certification Association

CERTIFICATION SCHEME
"IPC VVB Verifier/validator"

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IPC 7/2023



Greenhouse Gases GHG Carbon Auditor Training

on

13 and 27 May 2023 (two-day)

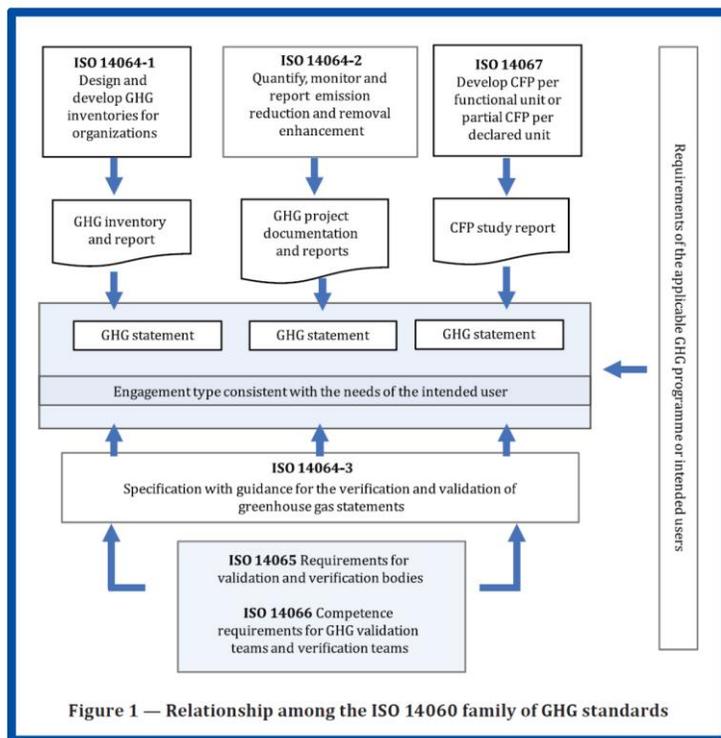


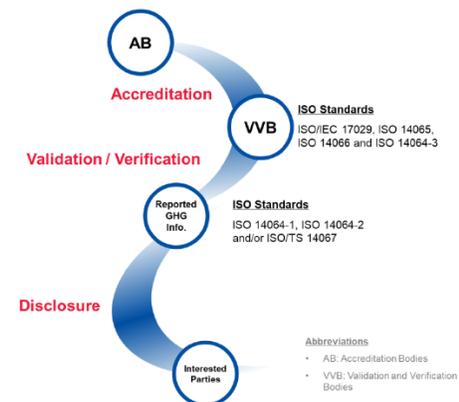
Figure 1 — Relationship among the ISO 14060 family of GHG standards

Course Highlights

This two-day course covers major ISO standards associated with conformity assessments of the validation and verification systems of the GHG. An overview of the requirements and general guidelines in applying and implementing of the GHG verification & validation standards is provided. Participants who work in certification bodies, consultancy firms, testing laboratories, factories, product suppliers, building contractors and governmental organizations are highly recommended.

- ISO 14064-1:2018** Part 1: Specification with guidance at the organization level for quantification & reporting of GHG emissions & removal
- ISO 14064-2:2019** Part 2: Specification with guidance at the project level for quantification, monitoring & reporting of GHG emission reductions or removal enhancement
- ISO 14064-3:2019** Part 3: Specification with guidance for the verification & validation of GHG statements
- ISO 14066:2011** Greenhouse gases — Competence requirements for greenhouse gas validation teams and verification teams
- ISO 14067:2018** Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification
- ISO 14065:2020** General principles and requirements for bodies validating and verifying environmental information
- ISO/IEC 17029:2019** Conformity assessment — General principles and requirements for validation and verification bodies

Validation and Verification Systems of the GHG



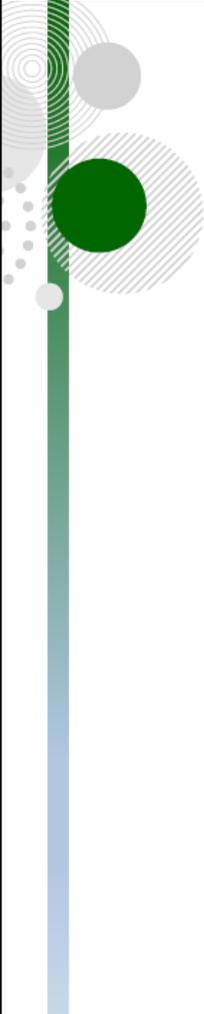
4. GRADES OF GHG CARBON AUDITOR

4.1. Certified GHG Carbon Auditor

HKICA Certified GHG Carbon Auditors are certified to possess the knowledge, skill and competence in taking the role as GHG auditor and capable of detailing the carbon footprint of the studied product for a particular product category throughout the designated life cycle stages. As stated in ISO/TS 14067 (2013), the Carbon Footprint of Product (CFP) study shall include the four phases of life cycle assessment (LCA), i.e. goal and scope definition, life cycle inventory (LCI) analysis, life cycle impact assessment (LCIA), and life cycle interpretation. The Certified GHG auditor may be a member or lead an audit team in accordance with ISO 14066, ISO 19011 and ISO/IEC 17029. Certified GHG carbon auditor are able to initiate, plan, execute and report of first, second and third party GHG audit.

4.2. Registered GHG Carbon Auditor

HKICA Registered GHG Carbon Auditors are known to possess the training, knowledge in taking the role as auditor and skill of detailing the carbon footprint of the studied product for a particular product category throughout the designated life cycle stages. As stated in ISO/TS 14067 (2013), the Carbon Footprint of Product (CFP) study shall include the four phases of life cycle assessment (LCA), i.e. goal and scope definition, life cycle inventory (LCI) analysis, life cycle impact assessment (LCIA), and life cycle interpretation. The Registered GHG auditors are able to initiate, plan, execute and report a GHG audit.



**Master of Science in
Sustainable Technology for
Carbon Neutrality**
碳中和可持續科技理學碩士學位

Programme code: 12060

2023/24 Intake cohort

This Programme Requirement Document is subject to review and changes, which the Department of Applied Biology and Chemical Technology can decide to make from time to time. Students will be informed of the changes as and when appropriate.

This document contains information known as of October 2022.

“Graduates of this MSc programme meet the academic and working experience, training and examination requirements for registration as Registered GHG Carbon auditors of the Hong Kong Institution of Certified Auditors (HKICA).”

Seminar on Integrity and Professional Development in Testing and Certification Industry

檢測認證誠信及專業發展研討會



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18 September 2023

**Thank You
多謝！**