

Net zero guidelines (IWA 42: 2022) 要點解讀及詮釋

時間：2022年12月20日

地點：今周刊綫上論壇

講師：徐帥軍

(20餘年溫室氣體排放及減排認證、能力建設及輔導經驗)

International Workshop Agreement（國際研討會協議）

IWA 42 Net zero guidelines（2022年9月）

為了響應緊迫的市場需求，國際研討會協議是通過 ISO 委員會結構之外的研討會機制.按照程序準備確保世界範圍內最廣泛的相關利益方有機會參與，並經研討會的相關方認同並發佈。如果未來有 ISO 委員會，其範圍涵蓋該主題，即已發布的國際研討會協議自動分配給該委員會進行維護。國際研討會協議在發布三年後進行審查，可以進一步處理成為公開可用的規範、技術規範或國際標準，根據市場需求。國際研討會協議最多可存在六年，之後它要麼被撤回，要麼被轉換成另一個 ISO 文件。

特色：內容非常廣汎，集推動淨零主流相關方方法大成。但是嚴謹性、邏輯性及連貫性較差。指南性質，并非强制性的要求。

Net Zero Guidelines 提供指引給誰？ 治理組織及企業等

Introduction (簡介)

This document provides guiding principles and recommendations to enable a common approach with a high level of ambition, to drive organizations to achieve net zero GHGs as soon as possible and by 2050 at the latest. It is intended to be a common reference for governance organizations (including voluntary initiatives, adoption of standards, policy and national and international regulation), and can help organizations taking action to contribute to achieving global net zero.

Net Zero Guidelines 提供指引給誰？ 治理組織及企業等

章節1 Scope（範圍）

This document provides guidance on what governance organizations and other organizations can do to effectively contribute to global efforts to limit warming to 1,5 °C by achieving net zero no later than 2050. It provides guidance on a common and equitable contribution and recognizes the capability of individual organizations in contributing to achieving global net zero. This document, when used in combination with applicable science-based pathways, provides guidance for organizations seeking to set robust climate strategies.

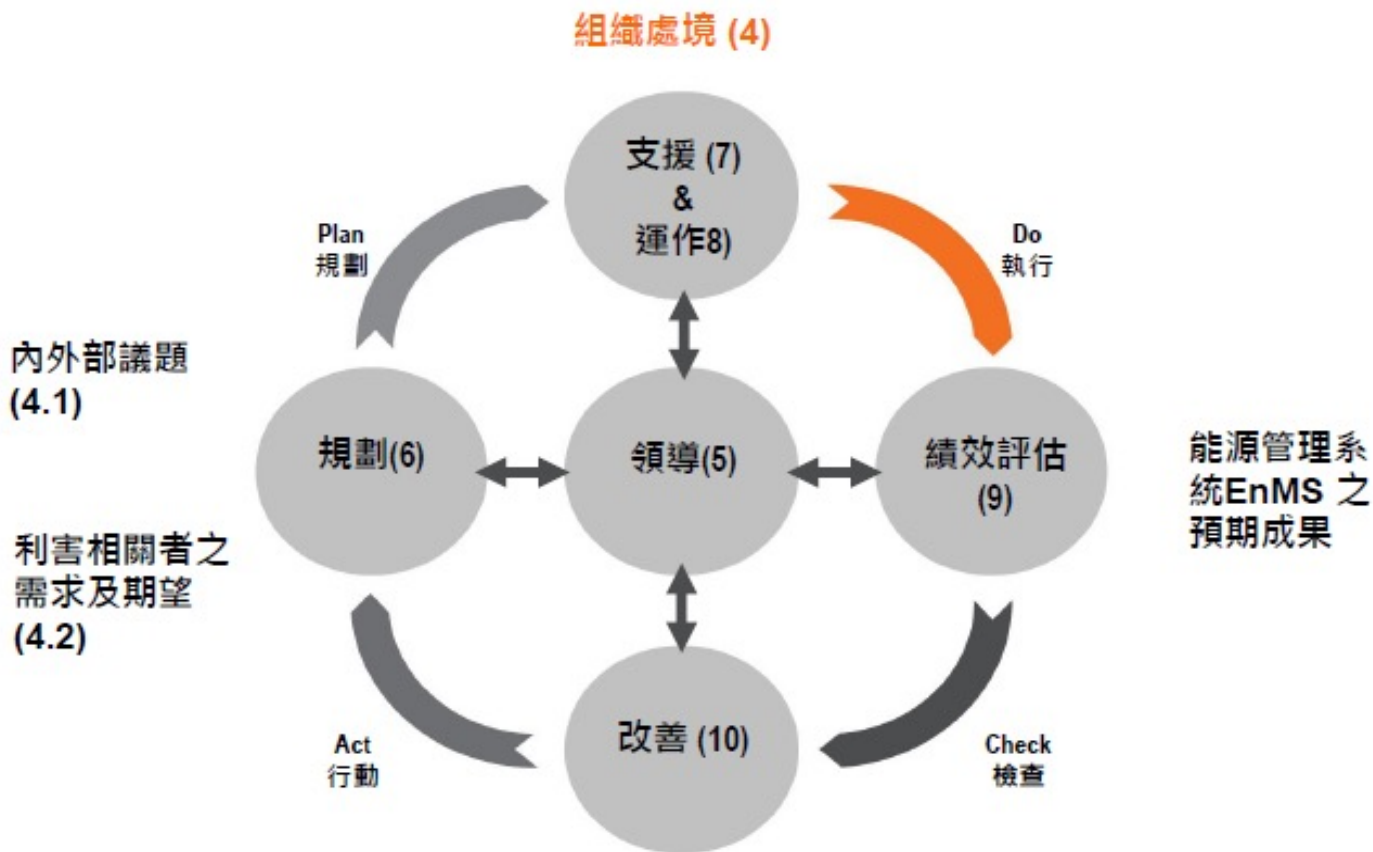
This document is intended to align territorial approaches to achieving net zero (e.g. by nations, regions, cities) and value chain approaches by organizations.

This document is intended to enable and support all organizations, including governance organizations developing policies, frameworks, standards or other initiatives on net zero for use by others.

閱讀指南時請注意：指南有大部分的內容是針對治理組織的（尤其是章節7 Leadership and commitment）。企業不要誤讀往自身加碼。

15個章節安排仍然具有ISO 管理體系標準 PDCA 的架構？

ISO 50001新版架構圖



ISO Net Zero Guidelines 章節分解
7. Leadership and commitment
是核心，推動Net Zero。

Plan: 6. Establishing levels and boundaries; 8. Targets

Do: 9. Mitigation;
10. Counterbalancing residual emissions.

Check: 11. Measurement and Monitoring; 12. Wider impact
13. Communication, reporting

Action: 14 Improvement

GHG Protocol 成爲主流， ISO 14064-1邊緣化？

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

NOTE The Terms and definitions clause provides definitions necessary for the understanding of certain terms used in the document. Some definitions have been drafted specifically for this document, others are based on existing terminological entries from International Standards and from documents published by the Intergovernmental Panel on Climate Change (IPCC), the Greenhouse Gas Protocol (GHGP) and United Nations Framework Convention on Climate Change (UNFCCC).

- 依據GHG Protocol 定義的有： 3.3.6 Baseline， 3.4.3 Value Chain， 3.2.3 Scope 1， 3.2.4 Scope 2， 3.2.5 Scope 3 (關鍵術語定義)
- 依據14064-1 定義的又： 3.2.8 Source， 3.2.8 GHG Inventory, 3.4.1 Organization
- 指南未提到14064-1， Cat.1 – Cat. 6 對排放源的定義。

如何抵消剩餘排放量完成淨零？

3.3.3

removal

詳細的定義了GHG移除的方法有那些

GHG removal

withdrawal of a *greenhouse gas* (3.2.1) from the atmosphere as a result of deliberate human activities

Note 1 to entry: Types of removals include afforestation, building with biomass (plant-based material used in construction), direct air carbon capture and storage, habitat restoration, soil carbon capture, enhanced weathering (mixing soil with crushed rock), bioenergy with carbon capture and storage.

Note 2 to entry: In this document, the term “removal” includes storage, including the durable storage of CO₂, which is referred to as “carbon dioxide removal” by the IPCC.

[SOURCE: IPCC AR6 WGIII Annex-I Glossary]

3.3.4

offset

emissions reduction (3.3.2) or *removal* (3.3.3) resulting from an action outside the *organization's* (3.4.1) boundaries used to counterbalance the organization's *residual emissions* (3.2.9)

Note 1 to entry: Offsets are usually represented by a *credit* (3.3.7) that has been retired or cancelled in a registry by or on behalf of the organization that is seeking to counterbalance residual GHG emissions. A registry is a platform that allows organizations to track, manage and trade GHG emissions.

Note 2 to entry: Only offsets that are removals can be used to counterbalance residual emissions to achieve *net zero* (3.1.1).

只有移除（removal）方法產生的碳權才可以抵消剩餘排放量完成淨零。減少（reduction）方法產生的碳權價值下跌？

新增定義- 治理組織及價值鏈

3.4.2

governance organization 汎指有治理權力的組織- 政府、立法機構、自願性倡議組織、NGO等 *organization* ([3.4.1](#)) that decides, manages, implements and/or monitors policies, requirements, legislation or guidelines

Note 1 to entry: Governance organizations include various levels of government (global, international, regional, sub-national and local) intergovernmental organizations, private sector and nongovernmental organizations and voluntary initiatives of all types, including community initiatives.

(包括SBTi, CDP, WRI, WBCSD)

3.4.3

value chain

all upstream and downstream activities associated with the operations of the *organization* ([3.4.1](#))

Note 1 to entry: Value chain *greenhouse gas emissions* ([3.2.2](#)) include *Scope 1 emissions* ([3.2.3](#)), *Scope 2 emissions* ([3.2.4](#)) and *Scope 3 emissions* ([3.2.5](#)).

Note 2 to entry: The value chain includes other organizations (e.g. suppliers, retailers, service providers) as well as end-users of products and services such as customers or the public.

[SOURCE: GHGP *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*]

指南從頭到尾說到的**GHG emission, mitigation, targets** 都是指全價值鏈範圍。拜托不要以“台灣淨零行動聯盟”的要求規劃減排目標。

章節6. Establishing levels and boundaries for net zero 將邊界分爲5種類別

Boundaries at different levels can include:

- a) territorial level: a physically defined territory, such as a country, region, county, city or other administrative unit; 有管轄屬地的政府組織
- b) sectoral level: a commercial or industrial sector, such as the retail or steel industry; 行業組織
- c) organizational level: a legally defined entity, such as a company or non-governmental organization;
- d) portfolio level: a financial activity, such as investments made or held by a bank, pension fund or trust; 企業及公司投資項目類別
- e) asset level: related to the life-cycle emissions of a physically defined unit, such as a building. 資產類別

When establishing the boundaries, the organization should consider the need to ensure all relevant GHG emissions are covered.

不同類別邊界使用不同的**GHG** 會計準則

NOTE 2 The GHGP *Corporate Accounting and Reporting Standard*^[21] and the GHGP *Value Chain (Scope 3) Accounting and Reporting Standard*^[24] provide guidance on boundary setting at the organizational level.

NOTE 3 The UNFCCC provides reporting guidelines on annual GHG inventories for countries^[25].

NOTE 4 The GHGP *Global Protocol for Community-Scale Greenhouse Gas Inventories*^[26] provides guidance on GHG inventories for cities.

企業機構使用- **GHG Protocol for Corporate**

國家級別機構使用- **United Nations Climate Change Reporting guidelines**

非國家政府機構使用- **GHG Protocol for cities**

UN Guideline 自 2014生效，體系 完整

[UNFCCC Process](#) > [Reporting requirements](#)



United Nations



Framework Convention on
Climate Change

FCCC/CP/2013/10/Add.3

Distr.: General
31 January 2014

Original: English

Reporting requirements.

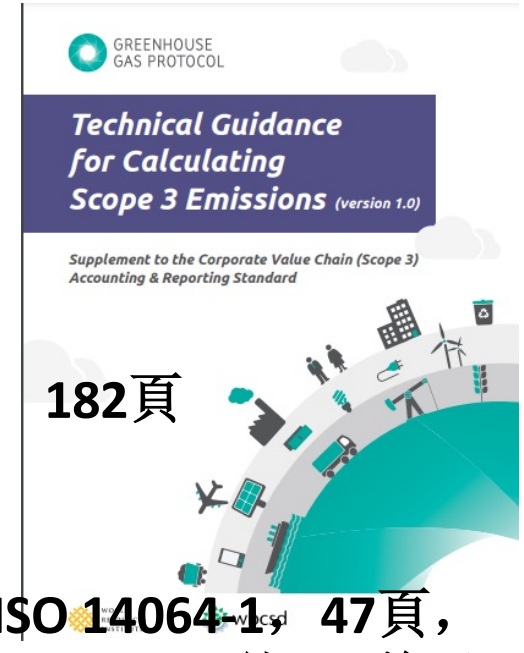
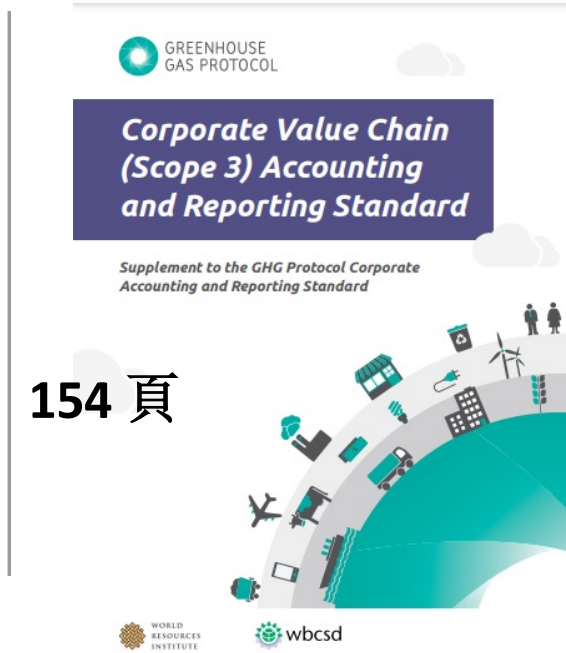
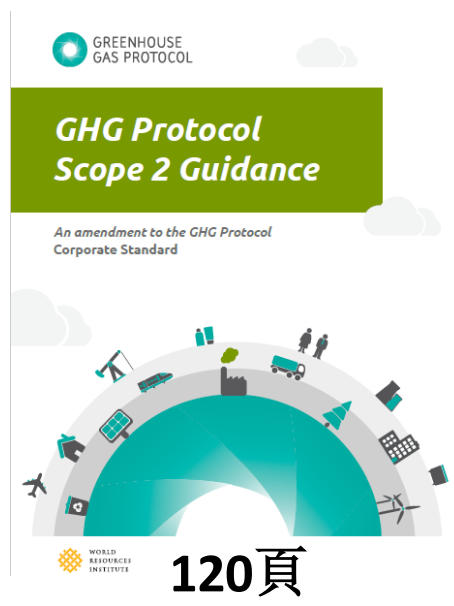
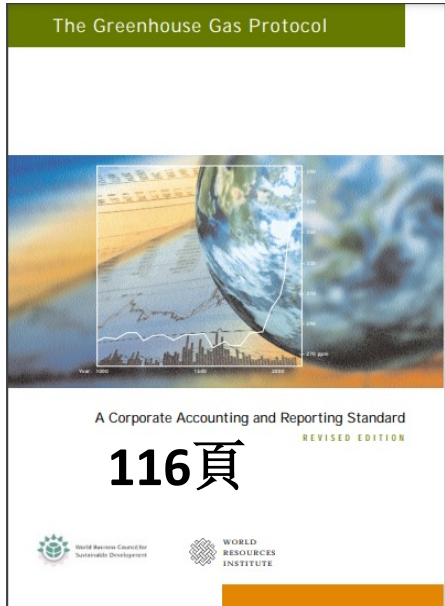
The quality of greenhouse gas (GHG) inventories relies on the integrity of the methodologies used, the completeness of reporting, and the procedures for compilation of data. To this end, the Conference of the Parties (COP) has developed standardized requirements for reporting national inventories.

The [UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention](#) (Annex I Parties) require each Annex I Party, by 15 April each year, to provide its annual GHG inventory covering emissions and removals of direct GHGs (carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃)) from five sectors (energy; industrial processes and product use; agriculture; land use, land-use change and forestry (LULUCF); and waste), and for all years from the base year (or period) to two years before the inventory is due (e.g. the inventories due 15 April 2016 cover emissions and removals for all years from the base year to 2014).

[CRF tables](#)



WRI GHG Protocol 全面的碳排放會計準則、計算方法及工具公眾免費使用



ISO 14064-1, 47頁, CHF 158, 約160美元。



Calculation Tools
The GHG Emissions Calculation Tool

Frequently Asked Questions
Third Party Life Cycle Databases

Scope 3 Evaluator
Tools Built on GHG Protocol

Calculation Tools



原則上ISO 的機制僵化、效率差、局限性大無法引領或支持企業如何應對氣候變化。

非國家級別政府組織使用的GHG會計準則



Global Protocol for Community-Scale Greenhouse Gas Inventories

*An Accounting and Reporting Standard for Cities
Version 1.1*

PART II: CALCULATION GUIDANCE BY EMISSION SOURCE

- 5** Overview of Calculating GHG Emissions
- 6** Stationary Energy
- 7** Transportation
- 8** Waste
- 9** Industrial Processes and Product Use
- 10** Agriculture, Forestry and Other Land Use

學校及社會團體應該使用什麼GHG會計職責呢？

不同類別企業有不同的指引及要求。
例如：

- 12.3 Empowerment (只適用於政府機構)
 - a) training and capacity building events;
 - b) transfer of resources;
 - c) supporting access to financial support;
 - d) knowledge sharing;
 - e) representation of member organizations and under-represented groups in decision-making.

如何設置淨零目標？

8.2 Target setting

8.2.1 General

The organization should set targets consistent with 50 % global GHG emissions reductions by 2030 (from a 2018 global baseline), achieving net zero by 2050 at the latest, and supporting global efforts to limit global warming to 1,5 °C above pre-industrial temperatures.

Net zero targets should include emissions related to all relevant GHGs and all Scope 1, Scope 2 and Scope 3 emissions, as appropriate.

The organization should ensure targets are set separately for Scope 1, Scope 2 and Scope 3.

If the organization has limited Scope 1 emissions, it may combine Scope 1 and Scope 2 targets.

Table 1 — Examples of sector-specific targets

Sector	2050 emissions reduction target	
		%
Forest, land and agriculture		72
Power		100
Cement		95
Iron and steel		93
Service buildings		99,6
Residential buildings		97,9

一般企業的方法和要求基本和 **SBTi** 一致。

行業目標採用 **SBTi** 的定義。

採購自願碳權的考慮- 品質保證及貢獻7%的可能性

章節10.2 Credits

If the organization purchases credits in the voluntary carbon market, a share of proceeds from the sale of the credits should go towards the Adaptation Fund of the UNFCCC to finance adaptation projects in developing countries that are particularly vulnerable to the adverse effects of climate change, and a share of credits should be cancelled as a contribution to an overall mitigation in global emissions.

NOTE 1 The Integrity Council Voluntary Carbon Market *Core Carbon Principles*^[40] set out the basis for identifying high-quality carbon credits. The *Core Carbon Principles* form the basis of the ICVCM Assessment Framework, which provides criteria for evaluating whether carbon credits and carbon-crediting programmes reach a high-quality threshold.

碳權設計、產生方法及監管機制仍不夠嚴謹，必須加強。

NOTE 2 The trading mechanism defined in Article 6.4 of the Paris Agreement^[12] requires 5 % share of proceeds to be given to the Adaptation Fund^[39] and that a minimum of 2 % of credits should be cancelled.

7% 公益基金。

目前碳權機制源自UN CDM（清潔發展機制），其實是比較完整及嚴謹的體系。第三方機構執行認證時水準參差不齊是遭相關方質疑的主要原因之一。在企業被要求自身要深度減排完成淨零的背景下，額外性的要求會越來越嚴格，開發的成本（包括現有方法學及新方法學）也越來越高。對是否投入開發碳權的項目宜非常謹慎！

指南推薦使用ICVCM工具評估碳權品質

Who We Are >

The Integrity Council for the Voluntary Carbon Market (Integrity Council) is an independent governance body for the voluntary carbon market. Our purpose is to ensure the voluntary carbon market accelerates a just transition to 1.5°C.

What We Do >

We will set and enforce definitive global threshold standards, drawing on the best science and expertise available, so high-quality carbon credits efficiently mobilize finance towards urgent mitigation and climate resilient development.

2023年中旬發佈正式版本

CORE CARBON PRINCIPLES, ASSESSMENT FRAMEWORK AND ASSESSMENT PROCEDURE

Draft for public consultation

July 2022

ICVCM 評估基於以下10個原則



WHAT ARE THE CORE CARBON PRINCIPLES?

The CCPs are designed to establish interlinked, fundamental principles for high-quality carbon credits that create real, additional and verifiable climate impact with high environmental and social integrity.

01. ADDITIONALITY

02. MITIGATION ACTIVITY INFORMATION

03. NO DOUBLE COUNTING

04. PERMANENCE

05. PROGRAM GOVERNANCE

06. REGISTRY

07. ROBUST INDEPENDENT THIRD-PARTY VALIDATION AND VERIFICATION

08. ROBUST QUANTIFICATION OF EMISSION REDUCTIONS AND REMOVALS

09. SUSTAINABLE DEVELOPMENT IMPACTS AND SAFEGUARDS

10. TRANSITION TOWARDS NET-ZERO EMISSIONS

正視Scope 3 GHG 核算不確定性的問題-推論數據proxies

13.2.3 Limitations of reporting

The organization should communicate the limitations of reports, including:

- a) any sources of GHG emissions which are excluded and quantify their significance;
- b) use of GHG emissions proxies, averages, or gaps in knowledge within value chains;
- c) methods used to estimate, and proportion of total disclosed data estimated when proxies are used to cover lack of data;
- d) limitations of an achievement claim about a product or service being climate or carbon neutral.

NOTE A GHG emissions proxy uses aggregated data from a range of sectors and sources to estimate GHG emissions from a complex process. Proxies usually relate to Scope 3 emissions.

典型使用討論數據是在估算類別11（產品使用階段排放）及類別12（產品生命周期排放）。根據合理的情景分析建立合適的模型，再通過調研一步一步的改進數據品質。不要套用PCR（產品類別規則），把減排的路徑及空間都斷絕了。

PAS 2060, SBTi, ISO Net Zero Guidelines 比較

標準/指南	應用目的及範圍	是否包括範疇三	減排目標期限	減排目標值	抵消方法
PAS 2060 碳中和	組織、活動、 家庭、個人、 產品、服務 (無所不包)	非強制性(技術、成本等因素導致量化不易時可排除), 沒價值鏈概念。	自定周期	自定	符合標準要求的碳權 (相對寬鬆)
SBTi 碳淨零	企業	必須	短期：2030 終期：2050	45%- 50% 90%-95%	短期不能抵消， 終期只能用移除型碳權抵消
ISO Guidelines 碳淨零	組織	必須	同SBTi	同SBTi	同SBTi

PAS 2060 (碳中和)的需求會降低？ 將於2023發佈的ISO 14068不那麼令人期待？

盤查是完成科學減碳目標的起點
依據ISO Net Guidelines實實在在做減碳！

感謝今周刊提供此次交流機會！