ISO 14064 Series, GHG Quantification & Reporting, GHG Validation & Verification, and related Accreditation Services

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1 March 2017

Related ISO Standards and Technical Specification

- Greenhouse Gas (GHG) Quantification and Reporting (溫室氣體量化和報告)
  - ISO 14064-1, ISO 14064-2 and ISO/TS 14067
- GHG Validation and Verification (溫室氣體審定和核查)
  - ISO 14064-3, ISO 14065 and ISO 14066
- Accreditation (認可)
  - ISO/IEC 17011

GHG Quantification and Reporting

溫室氣體量化和報告

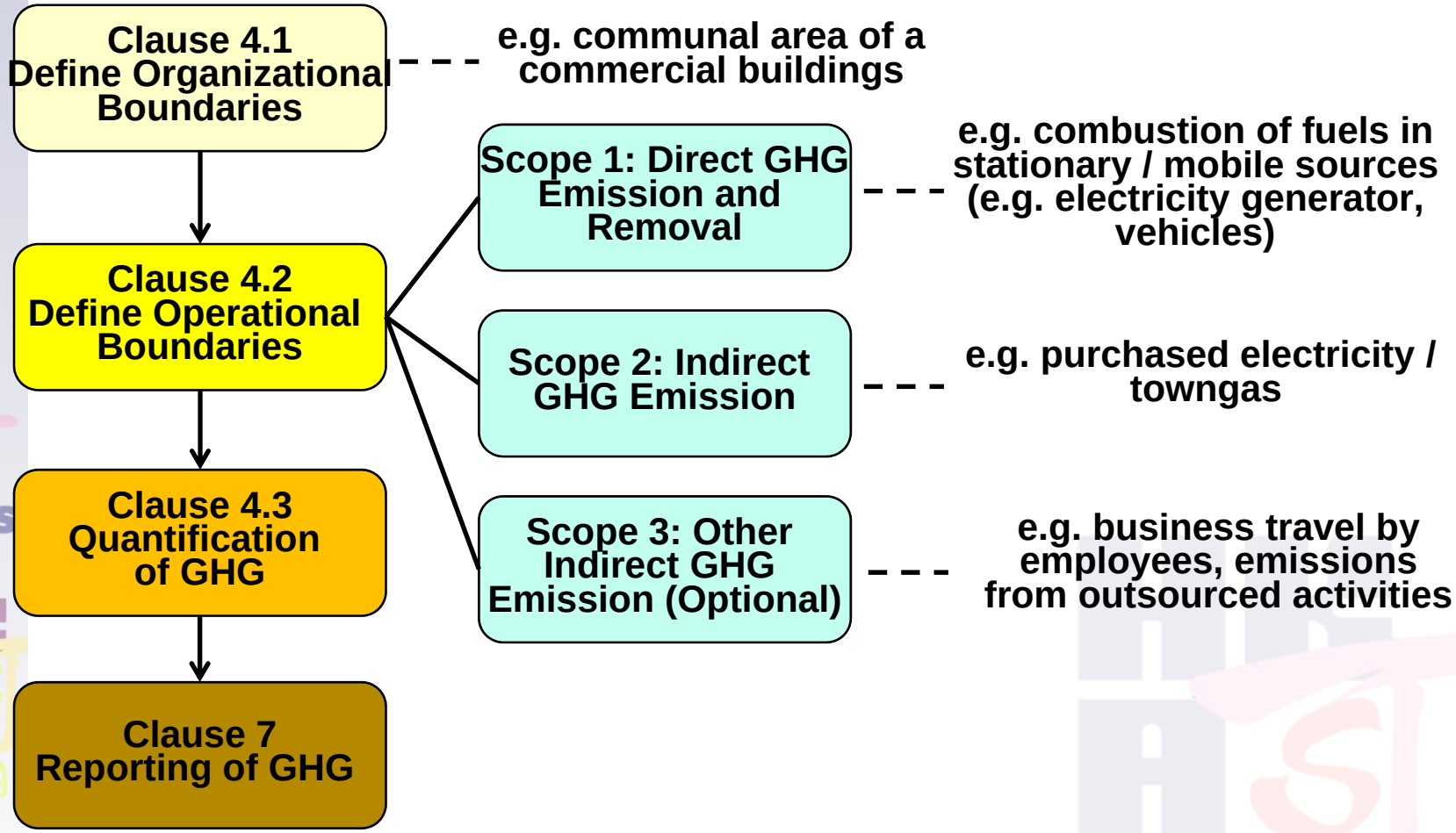
International Standards / Technical Specification

- ISO 14064-1: 2006
  - at the **organization level** for quantification and reporting of GHG emissions and removals
- ISO 14064-2: 2006
  - at the **project level** for quantification, monitoring and reporting of GHG emission reductions or removal enhancements
- ISO/TS 14067: 2013
  - for the quantification and communication of the **carbon footprint of a product (CFP)**

ISO 14064-1: 2006

- Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- Published in March 2006
- The organisation is allowed to select any GHGs to be quantified and reported.
  - Six common GHGs be quantified and reported: CO2, CH4, N2O, HFCs, PFCs, SF6

- Structure of ISO 14064-1: 2006
  - Clause 1: Scope
  - Clause 2: Terms and definitions
  - Clause 3: Principles
  - Clause 4: GHG inventory design and development
  - Clause 5: GHG inventory component
  - Clause 6: GHG information management
  - Clause 7: Reporting of GHG
  - Clause 8: Organisation's role in verification activities


Clause 4.1
Define Organizational Boundaries
e.g. communal area of a commercial buildings
Clause 4.2
Define Operational Boundaries
Scope 1: Direct GHG Emission and Removal
e.g. combustion of fuels in stationary / mobile sources (e.g. electricity generator, vehicles)
Scope 2: Indirect GHG Emission
e.g. purchased electricity / towngas
Scope 3: Other Indirect GHG Emission (Optional)
e.g. business travel by employees, emissions from outsourced activities
Clause 4.3
Quantification of GHG
Clause 7
Reporting of GHG

Published by EMSD and EPD

Applicable for buildings (commercial, residential or institutional purposes)

Benefits

- Improve awareness
- Create a baseline
- Identify area of high GHG emissions
- Implement **directed action(s)** to reduce GHG emissions / enhance GHG removals

ISO 14064-2: 2006

- Greenhouse gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements

- Published in March 2006

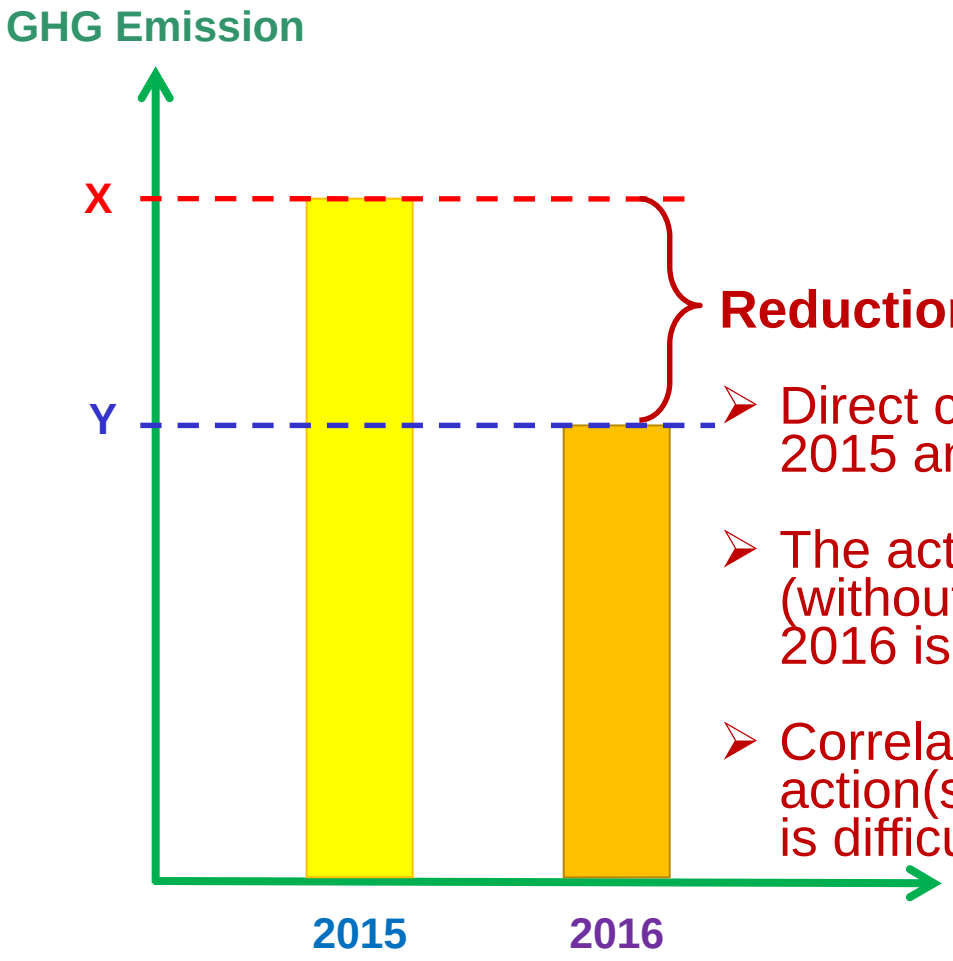
- Different from **directed action(s)** implemented by an organisation to reduce GHG emissions or increase GHG removals

Directed Action VS GHG Project

- Measurement of emission reductions / removal enhancement
  - Directed action: a prior point in time
  - GHG project: same point in time

- Correlation to emission reductions / removal enhancement
  - Directed action: difficult
  - GHG project: clearly defined

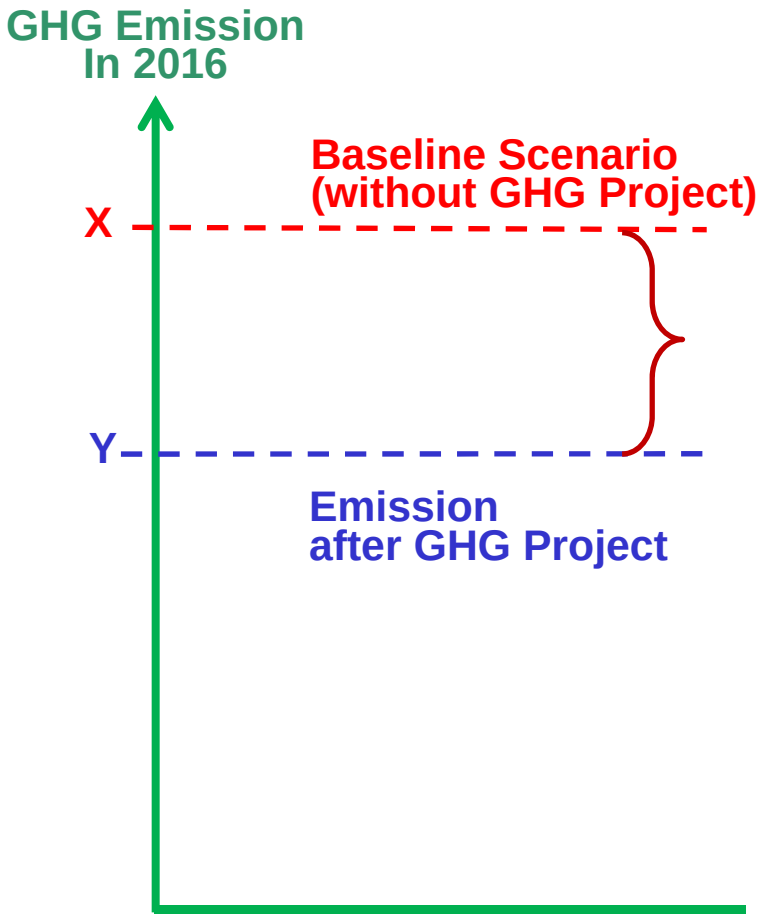
Directed Action



Reduction (X – Y)

- Direct comparison between 2015 and 2016
- The actual GHG emission (without any action taken) in 2016 is unknown.
- Correlation between direct action(s) taken and reduction is difficult to be found out.

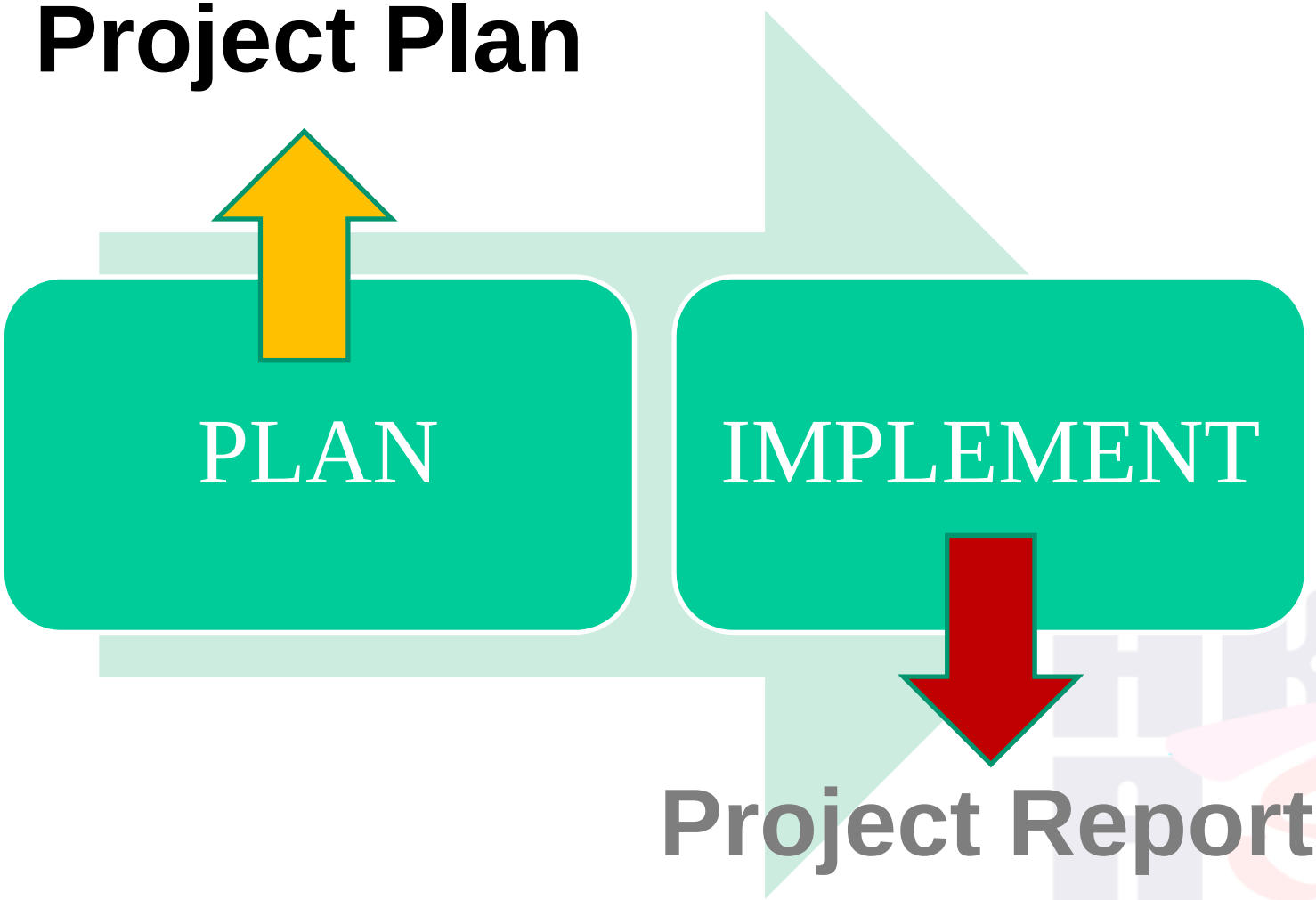
GHG Project



Reduction (X – Y)

- Comparison made in the same period of time
- The GHG emission (without GHG Project) is estimated as 'baseline Scenario'.
- Correlation between GHG project and reduction is clearly defined.

Project Plan

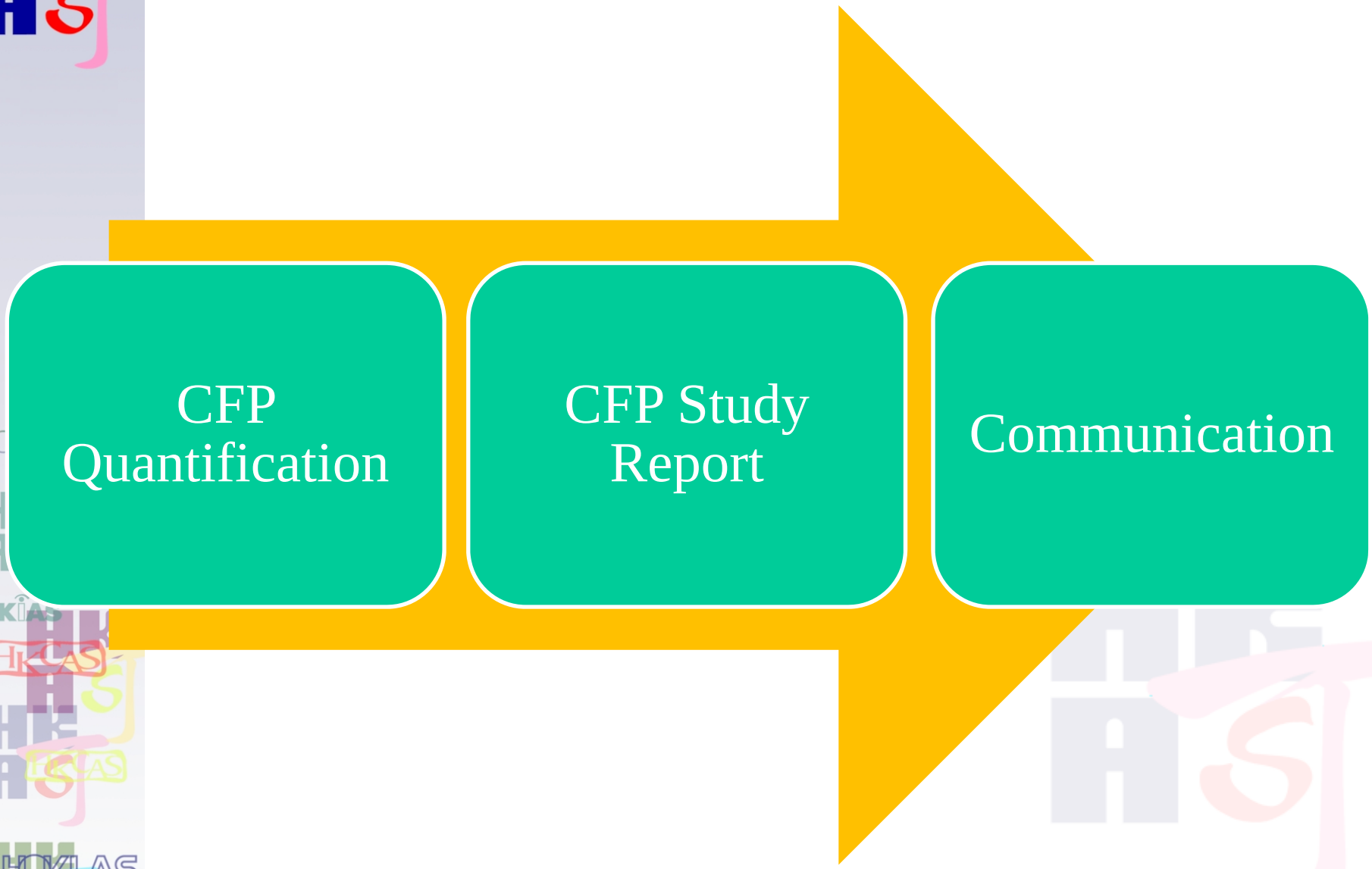


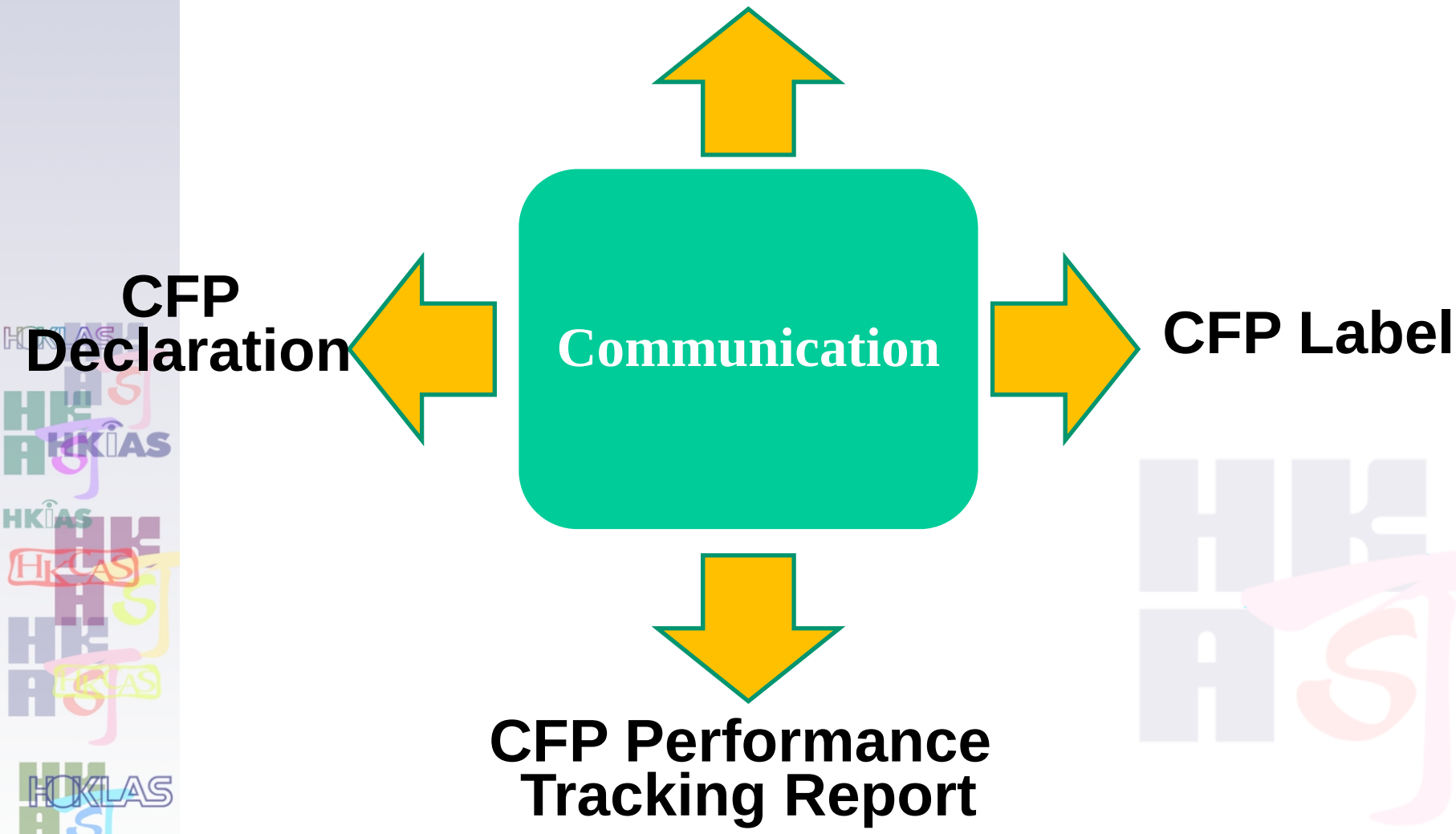
Benefits

- Systematic
- GHG markets: crediting and trade of GHG emission reductions or removal enhancements

ISO/TS 14067: 2013

- Greenhouse gases - Carbon footprint of products -- Requirements and guidelines for quantification and communication
- Published in May 2013
- Quantification of the carbon footprint of a product (CFP) based on life cycle assessment


CFP Quantification
CFP Study Report
Communication


CFP External Communication Report
CFP Declaration
Communication
CFP Label
CFP Performance Tracking Report

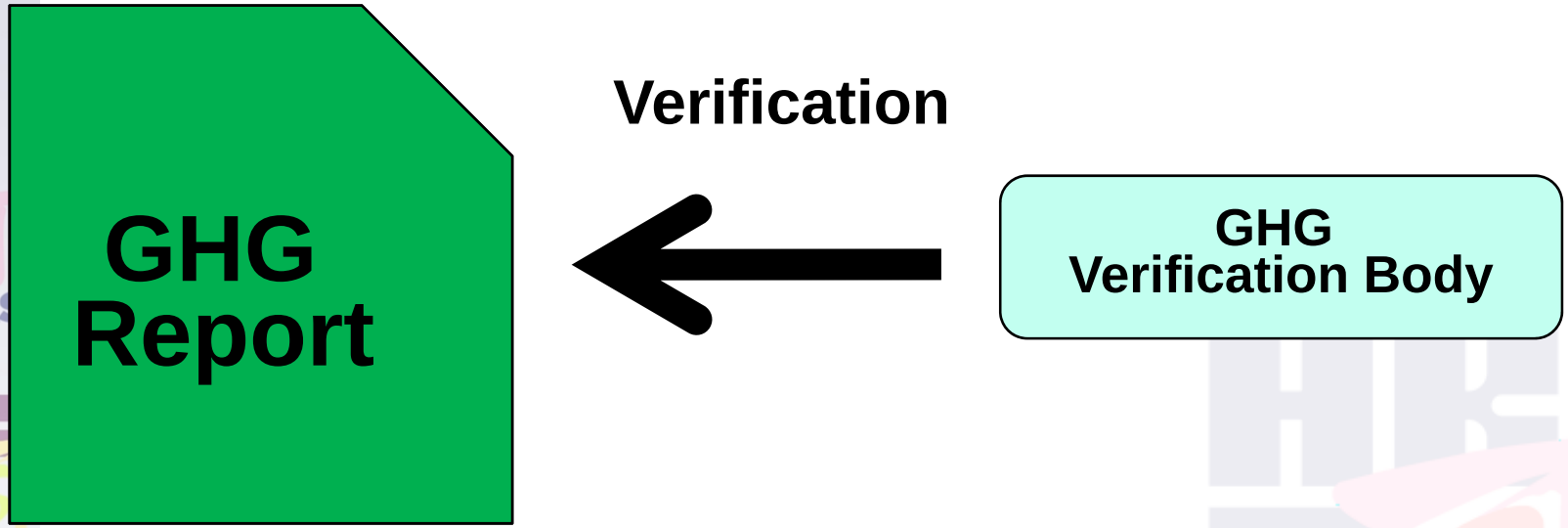
http://www.cic.hk/eng/main/zcb/carbon_labelling_scheme/about_the_scheme/overview/index.html

Benefits

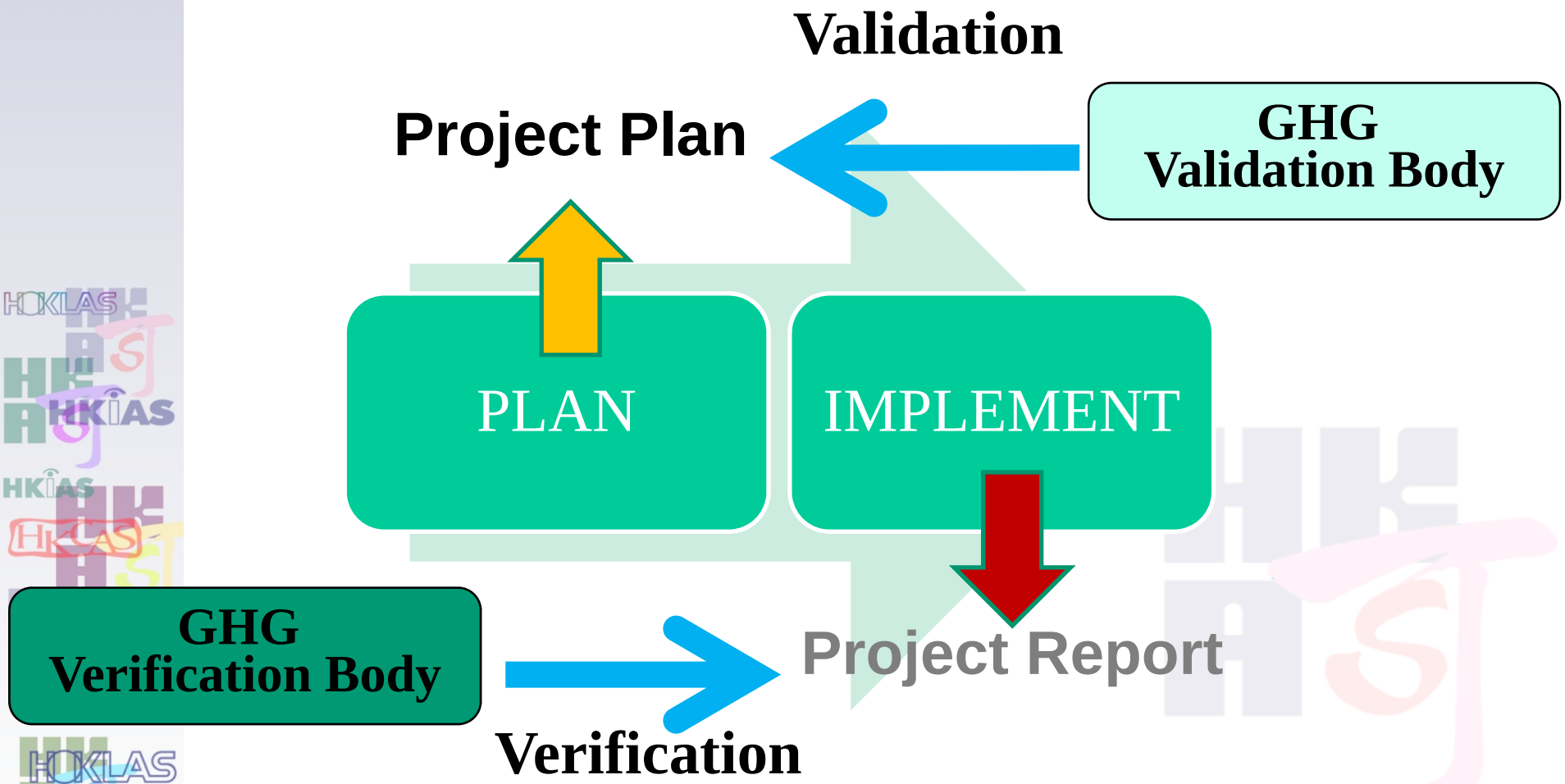
- Facilitate the evaluation of alternative product design, sourcing options, production process, raw material choices, recycling and other end-of-life processes
- Change consumer behavior

GHG Validation and Verification
溫室氣體審定和核查

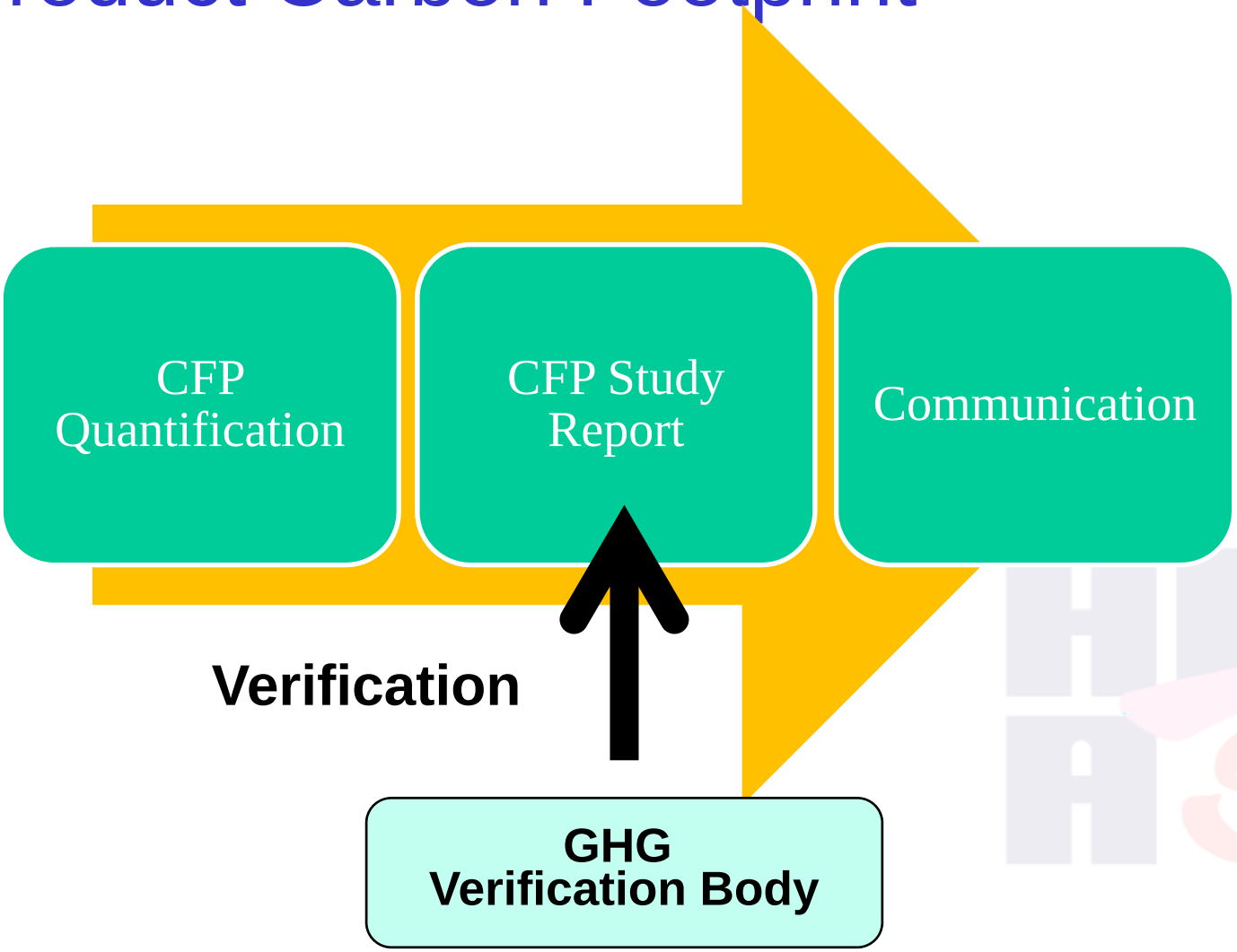
Organisation Level



GHG Project


Validation
Project Plan
GHG
Validation Body
PLAN
IMPLEMENT
GHG
Verification Body
Project Report
Verification

Product Carbon Footprint

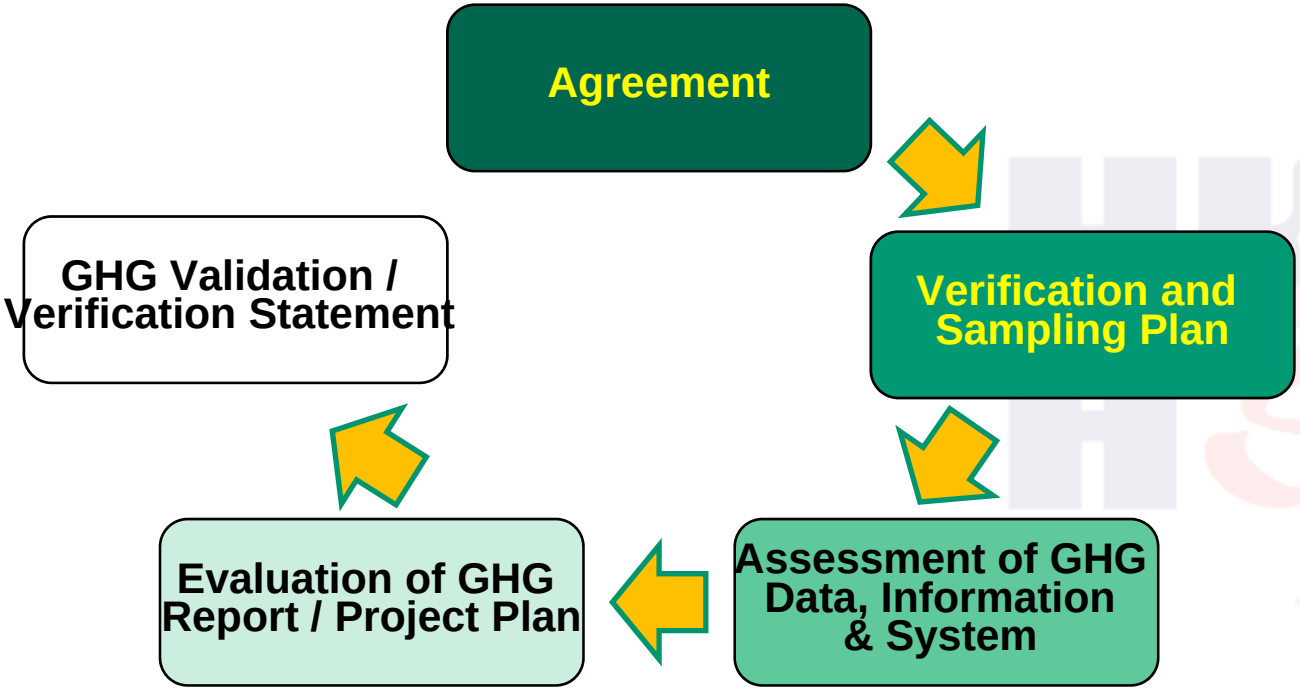


International Standards

- ISO 14064-3: 2006
  - conducting or managing the validation and/or verification of GHG assertions
- ISO 14065: 2013
  - specifies principles and requirements for bodies that undertake validation or verification of GHG assertions
- ISO 14066: 2011
  - specifies competence requirements for validation teams and verification teams

ISO 14064-3: 2006

- Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions
- Published in March 2006



ISO 14065: 2013

- Greenhouse gases - Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
- Published in April 2013
- Requirements including
  - legal status, governance and management commitment, impartiality, competences, verification process, management system……

ISO 14066: 2011

- Greenhouse gases - Competence requirements for greenhouse gas validation teams and verification teams
- Published in April 2011
- This International Standard complements the implementation of ISO 14065.

Benefits

- Increase credibility of the reported GHG information
- Provide assurance to intended users of the reported information

What is the competences of GHG validation and verification bodies?

Accreditation

Accreditation Body

↓ **Accreditation**

GHG Validation/ Verification Body

Standards:
ISO 14064-3, ISO 14065, ISO 14066

↓ **Validation / Verification**

Reported GHG Information

Standards:
ISO 14064-1 / ISO 14064-2 / ISO/TS 14067

Hong Kong Accreditation Service
香港認可處

Hong Kong Accreditation Service
香港認可處

- Hong Kong Accreditation Service (HKAS) is part of Innovation and Technology Commission of the Hong Kong Special Administrative Region (HKSAR) Government.

香港特別行政區政府
創新科技署

- Established in 1985 (formerly named as HOKLAS), HKAS is the official accreditation body (認可資格頒授機構) in Hong Kong

- Support the Hong Kong testing and certification industry, provide accreditation services under 3 schemes:
  - HOKLAS (香港實驗所認可計劃)
  - HKCAS (香港認證機構認可計劃)
  - HKIAS (香港檢驗機構認可計劃)

Accreditation Programme for GHG Validation & Verification Bodies

- Under Hong Kong Certification Body Accreditation Scheme (HKCAS)

- For GHG validation/verification bodies (V/VBs) providing third-party GHG validation/verification services
  - at organisation and project levels (launched in Dec 2012)
  - for carbon footprint of a product (CFP) study report (launched in Jun 2014)

- One accredited GHG verification body (at organisation level)

- Some GHG programmes may require certification by GHG V/VB of the greenhouse gas performance achieved by responsible parties over a specified period of time. Such certification activities are not covered under this HKAS accreditation.

- HKAS accredited GHG V/VBs are allowed to issue accredited GHG verification/validation statements.

Features of HKAS Accreditation

- Voluntary
- Rigorous assessment and monitoring (through surveillance and reassessment) based on international standards
- Independent and impartial
- International recognition

International Recognition

- HKAS is a signatory to
  - Mutual Recognition Arrangement (MRA) of International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ALPAC)
  - Multilateral Recognition Arrangement (MLA) of International Accreditation Forum (IAF) and Pacific Accreditation Cooperation (PAC)

- 95 MRA/MLA partners in 94 economies
  (as at February 2017)

- HKAS' PAC MLA extended to GHG Validation and Verification in June 2015.

- HKAS is the 5th PAC MLA signatory in GHG. The first batch signatories are TAF (Chinese Taipei), JAB (Japan), Ema (Mexico) and ANSI (USA). The 6th signatory is SLAB (Sri Lanka).

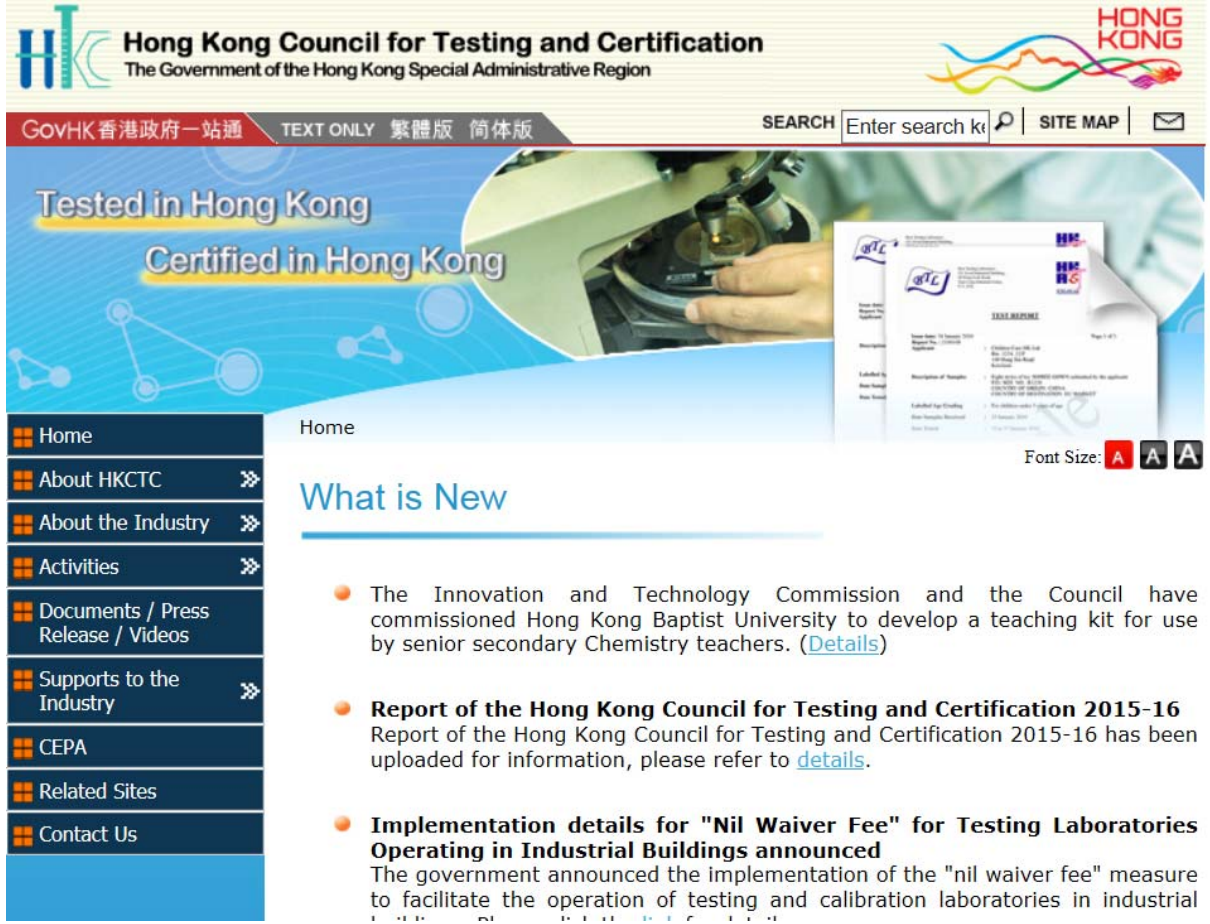
How to identify accredited GHG validation / verification statement?

For more information on HKAS ...

Please visit HKAS website at
<u>http: www.hkas.gov.hk</u>

For more information on testing and certification industry …

Please visit HKCTC website at http: www.hkctc.gov.hk



Thank You