HKCAS Supplementary Criteria No. 9

Accreditation Programme for Greenhouse Gas Validation and Verification – Validation and/or Verification of Greenhouse Gas Statements at Organisation Level, and Validation and/or Verification of Greenhouse Gas Statements at Project Level

1 Introduction

1.1 HKAS accreditation for Greenhouse Gas (GHG) Validation and Verification Bodies is provided under Hong Kong Certification Body Accreditation Scheme (HKCAS) and is open for voluntary application from any GHG V/VB[Note] that undertakes a third-party validation and/or verification of GHG statements at organisation level to ISO 14064-1: 2018, or validation and/or verification of GHG statements at project level to ISO 14064-2: 2019 for areas described in Appendix A.

Note: In this document, V/VB refers to 'validation body', 'verification body' or 'validation and verification body'.

1.2 HKAS may consider to provide accreditation for a GHG V/VB that undertakes a third-party validation and/or verification of GHG statements at organisation level or project level in respect of a specific GHG programme provided that the programme contains all applicable requirements of ISO 14064-1: 2018 (for organisation level) and ISO 14064-2: 2019 (for project level). The GHG programme may contain additional requirements provided that such requirements do not deviate ISO 14064-1: 2018 (for organisation level) and ISO 14064-2: 2019 (for project level). In addition, the GHG programme shall include one or more validation/verification programme(s) (i.e. rules, procedures and management for carrying out validation/verification) and such validation/verification programme(s) shall not contradict to the requirements specified in this document and shall satisfy the criteria set out in HKCAS SC-17. Before submitting an application for accreditation, the GHG V/VB shall provide details of the GHG programme and all relevant supporting information to HKAS Executive for consideration.

1.3 The accreditation criteria for GHG V/VB include HKAS 002, HKCAS SC-16,

ISO/IEC 17029: 2019, ISO 14065: 2020, ISO 14066: 2023, ISO 14064-3: 2019, the relevant HKAS and HKCAS Supplementary Criteria, relevant IAF requirements as specified in IAF documents including Mandatory Documents and Resolutions, relevant APAC requirements as specified in APAC documents including Technical Documents and Resolutions, and the current edition of this document.

1.4 The general accreditation procedures are provided in clause 2 of HKCAS SC-16. In selecting validation/verification activities to be witnessed, HKAS will consider the risks associated with the areas covered under the scope of accreditation. Normally, for an initial accreditation application or a major extension application to cover GHG validation and/or verification, the validation/verification activities to be witnessed shall be carried out at reasonable level of assurance. In case of a GHG V/VB also provide verification services at limited level of assurance, an additional witnessing assessment of limited level of assurance validation/verification shall be conducted. In a witnessing assessment, an HKAS assessment team will witness on-site and/or off-site verification activities carried out by the GHG V/VB's validation/verification team. The timing of the witnessing and the aspects to be witnessed will be determined by the assessment team. In addition, the assessment team will also review records associated with pre-engagement, engagement, planning, validation/verification execution, review, decision and review of the validation/verification opinion. GHG V/VB shall fully cooperate with HKAS and its assessment team during the accreditation process. GHG V/VB should also take note of the accreditation procedure stated in HKCAS IN001.

1.5 Details of the accreditation for an accredited GHG V/VB are given in its current scope of accreditation.

1.6 Some GHG programmes may request GHG V/VBs granting certifications to organisations for recognising their achievement of certain GHG performance. Such certification is not covered under this HKAS accreditation.

2 Terms and definitions

2.1 For the purposes of this document, the terms and definitions given in ISO 14064-1: 2018, ISO 14064-2: 2019, ISO/IEC 17029: 2019, ISO 14065: 2020, ISO 14066: 2023

and ISO 14064-3: 2019 apply.

2.2 The term ‘shall’ is used throughout this document to indicate those provisions which are mandatory. The term ‘should’ is used to indicate guidance which, although not mandatory, is provided by HKAS as a recognised mean of meeting the requirements.

3 Resource requirements

Validation/verification personnel

3.1 A GHG V/VB shall have sufficient validation/verification personnel and other resources (e.g. facilities, equipment, systems and support services) as appropriate in every area (classified in accordance with Appendix A) and for the GHG programme for which it has applied or is holding current accreditation.

3.2 A technical expert may be included in a validation or verification team. He/she may provide technical support to the team. A technical expert needs not be trained on validation or verification techniques but shall have sufficient knowledge in his/her technical area. During validation or verification, he/she shall work with a qualified validation/verification team leader or validator/verifier.

3.3 A GHG V/VB shall ensure that independent reviewers have all necessary competence including knowledge relevant to the specific areas described in Appendix A of this document and to the GHG programme for which it has applied or is holding current accreditation. If a GHG V/VB uses a committee to review the validation or verification activities and conclusions, it shall have documented procedures for the committee to make sound review conclusions and to ensure that the committee members are conversant with the reviewing criteria. It may be necessary to provide appropriate training to committee members. Performance of the committee shall be monitored.

4 Process requirements

Verification (reasonable level of assurance)

4.1 Reasonable level of assurance verifications provide a high level of confidence to intended users of verification opinions that the stated information is accurate and complete. For all new verification clients and existing verification clients with significant changes in organisational boundaries, reporting boundaries, data management system or controls, a GHG V/VB shall conduct verifications at reasonable level of assurance according to clause 9 of ISO/IEC 17029: 2019 and ISO 14065: 2020, clauses 5, 6, 8 and 9 of ISO 14064-3: 2019. In addition, considerations for verification are given in Annex B of ISO 14064-3: 2019. A GHG V/VB should follow the guidelines/considerations given in this Annex as appropriate. The GHG V/VB shall establish and document its verification process, and retain all relevant information and records to demonstrate that it fulfils this requirement.

Verification (limited level of assurance)

4.2 Limited level of assurance verifications provide a lower level of confidence to intended users of verification opinions. A GHG V/VB shall not accept an engagement at the limited level of assurance unless it is acceptable to the intended users and the GHG V/VB has a prior understanding of the client (to be verified) and its data management systems as well as controls enabling its verification team to plan the verification. In addition, when conducting the pre-engagement review, the GHG V/VB shall ensure that sufficient evidence is available to confirm the robustness of its client's data management systems and controls before accepting the engagement. In case of any doubts, the GHG V/VB shall decline to perform the verification or shall conduct the verification at reasonable level of assurance.

4.3 A GHG V/VB shall conduct verifications at limited level of assurance according to clause 9 of ISO/IEC 17029: 2019 and ISO 14065: 2020, and Annex A of ISO 14064-3: 2019. In addition, considerations for verification are given in Annex B of ISO 14064-3: 2019. A GHG V/VB should follow the guidelines/considerations given in this Annex as appropriate.

4.4 A GHG V/VB shall establish and document its verification process, and retain all relevant information and records to demonstrate that it fulfils the requirements of clause 4.2 and 4.3 of this document. The requirements of clause 4.2, 4.3 and 4.4 of this document does not apply to those GHG V/VB only providing verification services at reasonable level of assurance.

Validation

4.5 A GHG V/VB shall conduct validations according to clause 9 of ISO/IEC 17029: 2019 and ISO 14065: 2020, clauses 5, 6, 7 and 9 of ISO 14064-3: 2019. The GHG V/VB shall establish and document its validation process, and retain all relevant information and records to demonstrate that it fulfils this requirement.

5 Use of HKAS accreditation symbols and claims of accreditation status

5.1 An accredited GHG V/VB may issue HKCAS accredited validation/verification opinions in accordance with the applicable requirements specified in HKAS 002, HKAS SC-01 and HKCAS SC-16.

5.2 For limited level of assurance verifications, the verification opinion shall include a statement that the verification activities applied in a limited level of assurance verification are less extensive in nature, timing and extent than in a reasonable level of assurance verification. In addition, the conclusion shall be expressed in the negative form.

5.3 When issuing a HKCAS accredited validation/verification opinion, the distinctive HKCAS accreditation symbol of the accredited GHG V/VB and the associated statement as stipulated in clause 5.3 of HKCAS SC-16 shall only be displayed on the front page of the opinion. Except the front page of the validation/verification opinion, the distinctive HKCAS accreditation symbol and the associated statement shall not be displayed on any other parts of a validation/verification report.

Appendix A

(normative)

SCOPE OF ACCREDITATION

HKAS accreditation covers validation and/or verification of greenhouse gas statements at organisation level to ISO 14064-1, as well as validation and/or verification of greenhouse gas statements at project level to ISO 14064-2 for areas described in this Appendix only. In accordance with C.1 of Annex C of ISO 14064-3: 2019, an engagement type 'agreed-upon procedures (AUP)' shall not be used for GHG statements developed in accordance with ISO 14064-1 and ISO 14064-2. As such, HKAS does not accept any applications for accreditation from GHG V/VBs offering AUP services.

Area No.: 1

Description: Validation of Greenhouse Gas Statements at Organisation Level

Standard: ISO 14064-1

Sub-area under this area:

No.	Description	Examples of included activities
1.1	Power Generation and Electric Power Transactions	• Transmission of electricity • Generation of bulk electric power • Transmissions from generating facilities to distribution centres and/or distribution to end users • Renewable energy systems • Purchased electricity, steam
1.2	General Manufacturing (physical or chemical transformation of materials or substances into new products)	• Manufacturing – Electric and electronics equipment, industrial machinery • Manufacturing – Food processing Note: Civil engineering e.g. construction will be covered under this sector
1.3	Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals	• Conventional exploration and production • Oil sands and heavy oil upgrading • Coal bed methane production • Gas processing plants • Gas well completions • Transportation and distribution • Natural gas storage and LNG operations • Crude oil transportation • Refining

No.	Description	Examples of included activities
		• Petrochemical manufacturing • Emissions from process vents in oil and gas treatment • Process emissions (e.g. glycol dehydration, acid gas removal/sulphur recovery, hydrogen production, fluid catalytic cracker (FCC) catalyst regeneration) • Venting emissions (e.g. vessel loading, tank storage and flashing, and venting of associated gas) • Fugitive emissions (e.g. leaks from equipment and piping components) • Non-routine events (e.g. gas releases during planned pipeline and equipment maintenance, releases from unplanned events)
1.4	Metals Production	• Production of processing of ferrous metals • Production of secondary aluminium • Processing of non-ferrous metals, including production of alloys • Production of coke • Metal ore roasting or sintering, including pelletisation • Production of pig iron or steel including continuous casting
1.5	Aluminium Production	• Primary aluminium
1.6	Mining and Mineral Production	• Production of cement clinker and production of lime or calcinations of dolomite or magnetite • Glass and ceramic, mineral wool
1.7	Pulp, Paper and Print	
1.8	Chemical Production	• Production of carbon black • Production of ammonia • Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processe • Production of hydrogen and synthesised gas by reforming or partial oxidation • Production of soda ash and sodium bicarbonate • Production of nitric acid • Production of adipic acid • Production of glyoxal and glyoxylic acid

No.	Description	Examples of included activities
1.9	Carbon Capture Storage	• Capture and transport of GHG by pipelines for geological storage • Geological storage of GHG in a storage site
1.10	Transport	• Aviation • Other transportation
1.11	Waste handling and disposal	• Water and waste water treatment • Landfill and Composting Facilities
1.12	Agriculture, Forestry and Other Land Use (AFOLU)	
1.13	General	• Building Services / facilities management • Education • Hospital • Others

Area No.: 2

Description: Verification of Greenhouse Gas Statements at Organisation Level

Standard: ISO 14064-1

Sub-area under this area:

No.	Description	Examples of included activities
2.1	Power Generation and Electric Power Transactions	• Transmission of electricity • Generation of bulk electric power • Transmissions from generating facilities to distribution centres and/or distribution to end users • Renewable energy systems • Purchased electricity, steam
2.2	General Manufacturing (physical or chemical transformation of materials or substances into new products)	• Manufacturing – Electric and electronics equipment, industrial machinery • Manufacturing – Food processing Note: Civil engineering e.g. construction will be covered under this sector
2.3	Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals	• Conventional exploration and production • Oil sands and heavy oil upgrading • Coal bed methane production • Gas processing plants • Gas well completions • Transportation and distribution • Natural gas storage and LNG operations

No.	Description	Examples of included activities
		• Crude oil transportation • Refining • Petrochemical manufacturing • Emissions from process vents in oil and gas treatment • Process emissions (e.g. glycol dehydration, acid gas removal/sulphur recovery, hydrogen production, fluid catalytic cracker (FCC) catalyst regeneration) • Venting emissions (e.g. vessel loading, tank storage and flashing, and venting of associated gas) • Fugitive emissions (e.g. leaks from equipment and piping components) • Non-routine events (e.g. gas releases during planned pipeline and equipment maintenance, releases from unplanned events)
2.4	Metals Production	• Production of processing of ferrous metals • Production of secondary aluminium • Processing of non-ferrous metals, including production of alloys • Production of coke • Metal ore roasting or sintering, including pelletisation • Production of pig iron or steel including continuous casting
2.5	Aluminium Production	• Primary aluminium
2.6	Mining and Mineral Production	• Production of cement clinker and production of lime or calcinations of dolomite or magnetite • Glass and ceramic, mineral wool
2.7	Pulp, Paper and Print	
2.8	Chemical Production	• Production of carbon black • Production of ammonia • Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processe • Production of hydrogen and synthesised gas by reforming or partial oxidation • Production of soda ash and sodium bicarbonate • Production of nitric acid

No.	Description	Examples of included activities
		• Production of adipic acid • Production of glyoxal and glyoxylic acid
2.9	Carbon Capture Storage	• Capture and transport of GHG by pipelines for geological storage • Geological storage of GHG in a storage site
2.10	Transport	• Aviation • Other transportation
2.11	Waste handling and disposal	• Water and waste water treatment • Landfill and Composting Facilities
2.12	Agriculture, Forestry and Other Land Use (AFOLU)	
2.13	General	• Building Services / facilities management • Education • Hospital • Others

Area No.: 3

Description: Validation of Greenhouse Gas Statements at Project Level

Standard: ISO 14064-2

Sub-area under this area:

No.	Description	Technical area covered by this sub-areas
3.1	Energy Industries (renewable/non-renewable sources)	Thermal energy generation from fossil fuels and biomass including thermal electricity from solar
		Energy generation from renewable energy sources
3.2	Energy Distribution	Electricity distribution
		Heat distribution
3.3	Energy Demand	Energy demand
3.4	Manufacturing Industries	Cement sector
		Aluminium
		Iron and steel
		Refinery
3.5	Chemical Industry	Chemical process industries
3.6	Construction	Construction
3.7	Transport	Transport
3.8	Mining/Mineral Production	Mining and mineral processes, excluding oil and gas

No.	Description	Technical area covered by this sub-areas
		industry, coal mine methane recovery and use
		Oil and gas industry, coal mine methane recovery and use
3.9	Metal Production	Metal production
3.10	Fugitive Emissions from Fuels (solid, oil and gas)	Mining and mineral processes, excluding oil and gas industry, coal mine methane recovery and use
		Oil and gas industry, coal mine methane recovery and use
3.11	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	Chemical process industries
		GHG capture and destruction
3.12	Solvents Use	Chemical process industries
3.13	Waste Handling and Disposal	Waste handling and disposal
		Animal waste management
3.14	Afforestation and Reforestation	
3.15	Agriculture	Agriculture
3.16	Carbon Capture and Storage of CO_2 in Geological Formations	Carbon capture and storage of CO_2 in geological formations

Area No.: 4

Description: Verification of Greenhouse Gas Statements at Project Level

Standard: ISO 14064-2

Sub-area under this area:

No.	Description	Technical area covered by this sub-areas
4.1	Energy Industries (renewable/non-renewable sources)	Thermal energy generation from fossil fuels and biomass including thermal electricity from solar
		Energy generation from renewable energy sources
4.2	Energy Distribution	Electricity distribution
		Heat distribution
4.3	Energy Demand	Energy demand

No.	Description	Technical area covered by this sub-areas
4.4	Manufacturing Industries	Cement sector
		Aluminium
		Iron and steel
		Refinery
4.5	Chemical Industry	Chemical process industries
4.6	Construction	Construction
4.7	Transport	Transport
4.8	Mining/Mineral Production	Mining and mineral processes, excluding oil and gas industry, coal mine methane recovery and use
		Oil and gas industry, coal mine methane recovery and use
4.9	Metal Production	Metal production
4.10	Fugitive Emissions from Fuels (solid, oil and gas)	Mining and mineral processes, excluding oil and gas industry, coal mine methane recovery and use
		Oil and gas industry, coal mine methane recovery and use
4.11	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	Chemical process industries
		GHG capture and destruction
4.12	Solvents Use	Chemical process industries
4.13	Waste Handling and Disposal	Waste handling and disposal
		Animal waste management
4.14	Afforestation and Reforestation	
4.15	Agriculture	Agriculture
4.16	Carbon Capture and Storage of CO_2 in Geological Formations	Carbon capture and storage of CO_2 in geological formations