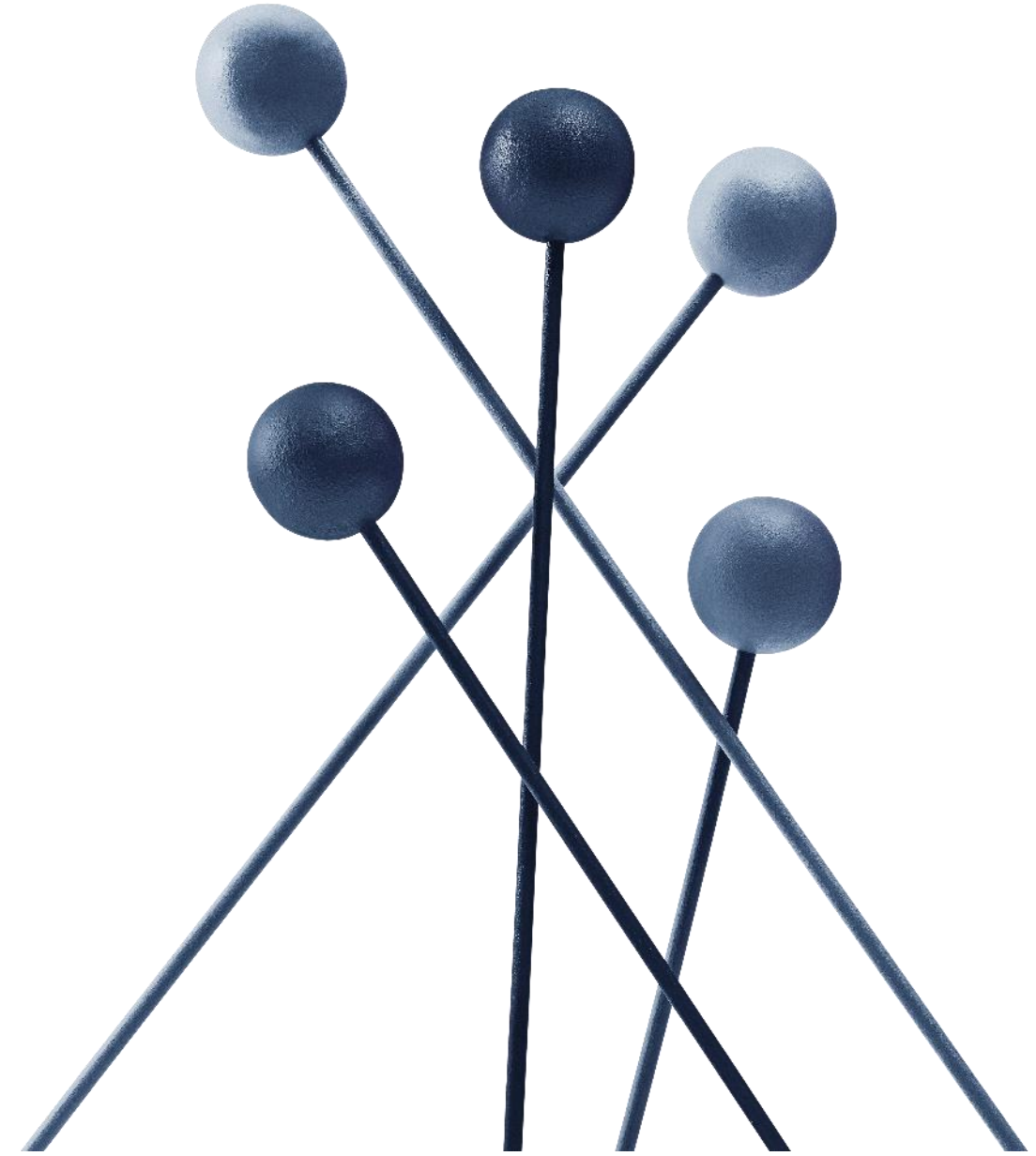


Taskforce on Scaling Voluntary Carbon Markets

Technical Appendix

July 8th, 2021

B | Governance

Case studies of related governance bodies

Relevant ISO standards for the VCM

C | Legal principles and contracts

D | Credit-level integrity

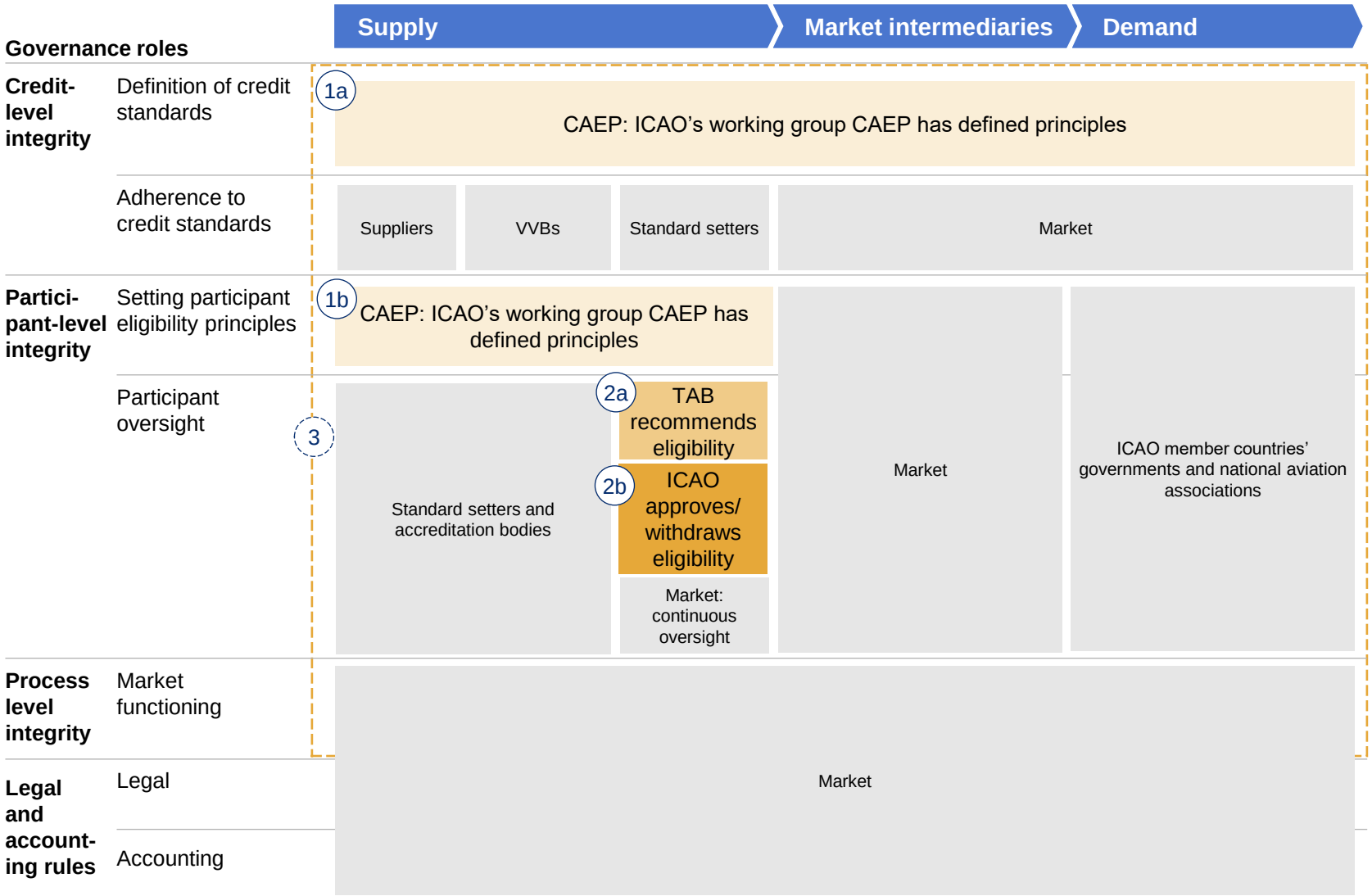
B | Proposed design of the new umbrella body is in line with related governance bodies; required resources strongly depend on type of organization

Dedicated leadership | Shared leadership | Technical experts | Secretariat | Members | # of people (FTEs)

Role	New umbrella body	Case studies: Carbon markets (deep dives next)			Others	
		1 ICAO	2 CDM	3 ICROA	4 The Green Bond Principles	IFRS
Supervise	Board of Directors	ICAO Council	CMP (UNFCCC) 192 countries	IETA Council 17	Executive Committee	Monitoring board 8
Decide	9-13	36	Executive Board 10 + 10 alternates	Executive Committee 7	24	Foundation Trustees 22
Recommend	Expert Panel (3x) 20-22 (4-6)[1]	Technical Advisory Body 19 (3)	Panels / Working Groups / Teams (6x) 7-23, 63 total (~4)	ICROA Working Groups (3x) 80+ (4-6)	Steering Committee; Working groups / Advisory bodies 200	International Accounting Standards Board (IASB) 14 (13)
Operate	Executive Secretariat 15-22 (15-22)[1]	ICAO Env. Dept. 5 (0.6)	UNFCCC Secretariat Total: 450 (450) CDM: 78 (78)	IETA Secretariat Total: 20 (20) ICROA: 2+ (3-5)	Steering Committee 3 (~0.5); ICMA Secretariat 4 (2)	Interpretations Committee 14 (~1); Secretariat TBD
Input	Member consultation group	ICAO Assembly 193 UN member countries	Public	Member organizations 17 institutions (IETA: 158)	Members; Observers	Advisory Council

1. Long-term need, for setup 8-12 FTE required for Expert Panel and 17-25 FTE for Secretariat to accelerate process

B.1 | ICAO Technical Advisor Body (TAB) – mandate



Governance role fulfilled by

- ICAO CAEP
- ICAO TAB
- ICAO
- ICAO – general oversight

Roles of ICAO / CAEP / TAB

1 **Establish**

Through CAEP working group, ICAO has:

a) Defined credit standards that are to be adhered to in Corsia program

b) Developed an assessment framework to set principles for suppliers and standard setters

2 **Recommend & approve**

a) TAB reviews applications of all interested programs and recommends approval of eligible applicants

b) ICAO approves programs' eligibility based on TAB's recommendation

3 **Oversee**

ICAO oversees CORSIA implementation, however weaker role than umbrella body as ICAO is not focusing on carbon markets/ general oversight

B.1 | ICAO Technical Advisor Body (TAB) – concrete tasks

✓ Similar to new governance body ✗ Different to new governance body ? Still to be decided

Body		Task	Description	How often/ updates	Comparison to umbrella body
ICAO CAEP	1a	**Define credit standards**	• CAEP Working Group defined credit standards (Emissions Units Criteria) that are to be adhered to in Corsia emissions reduction program	Trial period: **3 years**	✓ New governance body to define, curate and host CCPs
	1b	**Develop an assess-ment framework**	• CAEP Working Group developed an assessment framework to set principles for supplier and standard setters	Trial period: **3 years**	✓ In scope of the new governance umbrella body
ICAO TAB	2a	**Revise applications on eligibility of standards**	• All 19 body members individually revise applications of all interested programs, and discuss results – Review application documents, e.g., emissions reduction, legal status and existence, framework documents, methodologies, requirements on VVBs,… – Review public consultation inputs – Assess if applicants fulfil criteria defined in EUC based on finding detailed evidence in submitted materials – Align with other TAB members through calls, conferences and a quarterly week-long in-person meeting – Provide a report to ICAO outlining fulfillment of criteria and subsequent recommendation of elligibility – Reassess fulfillment of conditional criteria (where relevant)	Assessment: **Quarterly** Standard setters assessed upon (re-) application Full process: **1 year**	✓ Review process envisaged similar ? Specific steps TBD
ICAO	2b	**Approve programs eligibility**	• ICAO council approves programs eligibility based on TAB's recommendations – TAB not taking official decisions	**Semi-annually**	✗ Governance body to directly approve applications
ICAO	3	**Oversee CORSIA implementation**	• Oversight of five CORSIA Implementation Elements, e.g., CO_2 Estimation and Reporting tool, Eligible fuels, Eligible Emissions Units, Central Registry	-	✗ ***No management of interlinkages and general carbon market oversight***

Source: ICROA Web page, Expert interviews

B.1 | ICAO Technical Advisor Body (TAB) – organizational design

Dedicated leadership | Shared leadership | Members | Secretariat | Other technical experts

Role	Body	Tasks	Required resources: # of people	Required resources: Time commitment	Required resources: FTEs
Super-vise & Decide	**ICAO Council**	**Approves** which standard setters are eligible to issue CCPs, based on recommendations from Technical Advisory Board (TAB) and prepared by Executive Secretariat **Oversees** five CORSIA Implementation Elements, e.g., CO_2 Estimation and Reporting tool, Eligible fuels, Eligible Emissions Units, Central Registry	**36** elected members	**3** sessions per year, ca. **9** meetings over 3 weeks each + **4** additional informal briefings	n/a
Recom-mend	**Technical Advisory Body (TAB)**	**Makes proposals** for standard setters' eligibility for approval by ICAO Council (i.e., assess if applicants fulfil criteria defined in EUC based on evidence in submitted materials)	**19** elected members	**40 days** per year per member	**3**
Operate	**ICAO Env Dept** **Secretariat for TAB**	**Carries out operational tasks** of governance body (e.g., coordinate work, organize meetings)	**5** people (ICAO Environmental Department secretariat staff)	1 person (Env Dept Head) – **15 to 20 days** per year 4 people (ICAO Env Dept staff) – **30-35 days** per year each	**0.6**
Input	**ICAO Assembly** 193 UN member countries	**Provide input and set priorities**	**193** UN member countries	n/a	n/a

B.2 | ICAO Technical Advisor Body (TAB) – discussion with experts on mandate and lessons learned

Mandate	• TAB **advises ICAO Council on the assessment of CORSIA eligibility** for standards • Overarching carbon-level principles, in the form of Emissions Units Criteria applicable to programs and credits, were established by **ICAO's working group CAEP** to guide TAB's assessment
Founding Sponsor(s) and Executive Secretariat Host	**ICAO/ UN:** action call for emissions reduction and compensation in civil aviation, TAB in charge of eligibility assessment
Composition	**Selected representatives of ICAO member countries.** Countries submit profiles of experts, **19 experts chosen to be members of TAB**
Decision rights	• TAB provides recommendations to **ICAO Council that acts as a decision making body** • **No direct enforcement power**, enforcement through ICAO membership
Lessons learned	• **Emissions Units Criteria** to define **high quality programs and credits** serve as clear guidance, recommendations on eligibility are thus made on an evidence, fact-finding basis. • Introduced a very **structured process to review methodologies** and assess their eligibility • Best practice has been to **open application** for eligibility assessment **to all emissions units programs** who believe they may be eligible • Market participants provide input to ICAO through industry associations (e.g., IATA for airlines), which **funnels the decision process** as sectors first go through an internal process to come up with a common opinion

Experts

Juan Carlos Arredondo

Vivid Economics, member of ICAO TAB)

Source: icao.int, expert interviews

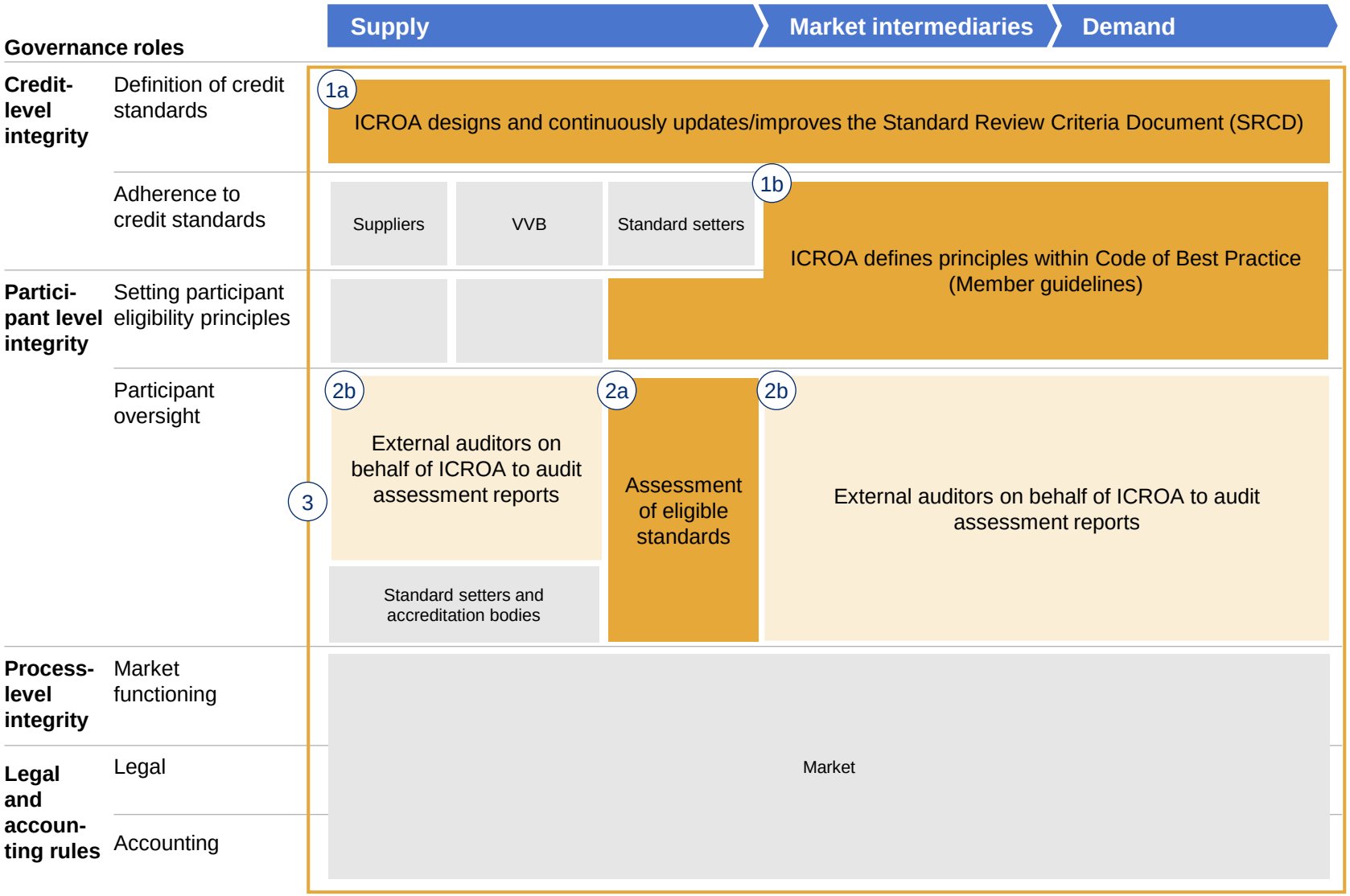
B.2 | CDM – organizational design

Dedicated leadership | Shared leadership | Members | Secretariat | Other technical experts

Role	Body	Tasks	Required resources: # of people	Required resources: Time commitment	Required resources: FTEs
Super-vise	**CMP[1] (UNFCCC)**	**Oversee** the implementation of the Kyoto Protocol, takes decisions to promote its effective implementation **Supervise** the Executive Board	**192** Countries (Parties to the Kyoto Protocol)	COP and intersessional sessions (**2 weeks per session**) plus 2-3 days long preparatory meetings before each session	n/a
Decide	**Executive Board (EB)**	**Supervise** CDM **Decide** on recommendations provided by Panels / Working Groups / Teams	**10** members with 10 alternates	**12 to 28** meeting days per year per member: 4 to 7 meetings per year, 3 to 4 days per meeting (up to 20 members plus UNFCCC staff per meeting)	n/a
Recom-mend	**Panels / Working Groups / Teams (6x)**	**Develop** recommendations to the EB on guidelines, proposals for new baseline and monitoring methodologies **Prepare** EB decisions in line with accreditation entities **Assist** with registration and issuance	**6** panels / working groups / teams with total **63** members: 4 x 7, 13 and 23 members per group	**3 to 6** meetings per year per panel, with 3 to 5 days per meeting	**~4**
Operate	**UNFCCC Secretariat**	**Covers all aspects of CDM**, e.g., negotiations, support to panels work and meetings, etc. **Handle** process and non-process queries	Whole UNFCCC secretariat comprises of 450 members, out of which **78** dedicated to CDM	**Full-time** employees	**78**
Input	**Public**	**Provide input** for the work of Panels / Working Groups / Teams	n/a	n/a	n/a

1. Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol

B.3 | ICROA – mandate



Source: ICROA Web page, ICROA Expert interviews

Governance role fulfilled by

- External auditors
- ICROA
- ICROA – general oversight

Roles of ICROA

The ICROA Code aims to define international best practice for offset-inclusive carbon management

1. a) Define Standard Review Criteria for independent standards and Government/UN-approved standards

   b) Host and curate a Code of Best Practice in the use of market-based instruments and climate finance

2. a) Periodically review standard setters compliant with Code of Best Practice (quarterly reviews for 'new' Standards, currently annual review for 'endorsed' Standards)

   b) Check the outcome of external audit assessment reports of members and new applicants, approve membership

3. Represent its members as the voice of the voluntary carbon market and promote collaboration across key stakeholders

B.3 | ICROA – concrete tasks

✓ Similar to new governance body ✗ Different to new governance body ? Still to be decided

Tasks	Description	How often/ updates	Comparison to umbrella body
1a **Define Standard Review Criteria Document**	• Define Standard Review Criteria for credit standards • Ensure credibility and quality of the standards	Quarterly[1]	✓ New governance body to define, curate and host CCPs
1b **Host and curate a Code of Best Practice**	• Host and curate a Code of Best Practice w.r.t. voluntary climate action	Annually[1]	✓ Umbrella body also to develop CCP assessment framework, however not only for supplier but also for VVB and standard setter eligibility In contrast, ICROA's Code of Best Practice also sets eligibility principles for intermediaries and buyers (not in scope for umbrella body)
2a **Assessment of eligible standards**	• Periodically review standard setters compliant with Code of Best Practice in four areas: Carbon Footprinting, Carbon reduction advice, Carbon offsetting, Communication	Quarterly for 'new' standards; annually for 'endorsed' standards[1]	✓ Aligned with/ similar to scope of new governance umbrella body
2b **Ensure compliance with the ICROA Code of Best Practice**	• Check that members commit to submitting externally audited assessment reports on an annual basis • Sanction members for non-compliance	Annually	✗ Participant oversight of intermediaries and buyers is not in scope of umbrella body
3 **Represent members and promote collaboration**	• Represent its members across VCM ecosystem and provide an unified voice • Promote collaboration across key stakeholders in VCM	Ongoing	✓ Same overarching goal

1. Frequency subject to change and always reviewed for improvement

Source: ICROA Web page, ICROA Expert interviews

B.3 | ICROA – organizational design

Dedicated leadership | Shared leadership | Members | Secretariat | Other technical experts

Role	Body	Tasks	Required resources: # of people	Required resources: Time commitment	Required resources: FTEs[3]
Oversee	**IETA Council** 3 Committees: Finance, Governance, Membership	**Oversees** activities of ICROA ICROA integrated within IETA as a 'semi-autonomous' self-regulating organization since 2011 (independent 2009-2011)	**1** Chair, **1** Vice-Chair, **15** elected Council members	5 - 6 Council Meetings per year, incl. the General Meeting of the Association (AGM)	n/a
Decide	**Executive Committee (EC)** Delegated authority from the council	**Sets the strategy** for the three Working Groups **Hosts and curates** the Code of Best Practice **Makes decisions** on membership, potentially sanctions members for non-compliance **Represents** its members across VCM ecosystem and promotes best practice & collaboration	**7** elected EC members, including 2 Co-Chairs	5 - 6 EC Meetings, weekly Co-Chair Meetings	**1.5-2**
Recom-mend	**ICROA Working Groups (WG)** Technical WG; Communica-tions WG; Policy & Advocacy WG	**3 Working Groups** look into various market issues, e.g., Technical WG recommends updates to the ICROA Code of Best Practice, recommends 'new' standards for endorsement, reviews endorsed standards, and is responsible for the third-party audit process	**3** WG with **1** or **2** Co-Chairs and **20-40+** WG members from the membership each[2]	Members: **7-10 h / month** (monthly WG Meetings, preparation) Chair/Co-Chair**: 10-14 h/month** (Weekly or Bi-Weekly Meetings)	**4-6**
Operate	**IETA Secretariat**	**Supports** the Executive Committee with implementation of the overall strategy, and the Working Groups with operationalization of the work program priorities and decisions (includes positions, reports, recommendations, key deliverables,…). **Represents** the voice of the membership	**IETA: 20** **ICROA: 2**, support from other staff on, e.g., admin, events, supervision, accounting,…	**2**: Full-time **Support**: Part-time	ICROA: **3-5** FTE
Input	**Member organizations**	**Provide** knowledge, guidance & expertise within Working Groups, provide annual third-party audit reports (ICROA).	**IETA: 158+** [1] **ICROA: 17** [1]	*Members provide their time and expertise as parts of Working Groups*	

1. Expected growth in 2021 2. Members volunteer to join (suggested by member organizations for expertise) and volunteer their time 3. Full-time equivalent as per est. time commitment, both allocated & non-allocated resources

B.3 | ICROA – discussion with experts on mandate and lessons learned

Mandate	• ICROA is a self-governing body that **protects and enhances the reputation and integrity of the voluntary market** and brings market recognition to its members • It defines **credit integrity guidelines**, checks adherence to them and defines **participant eligibility** within its Code of Best Practice • It **assesses standards** eligibility and ensures compliance through **third party audits** • It uses a **self-regulating framework** based on transparent mechanisms and strong principles • It represents members as the voice of VCMs, promoting **collaboration, innovation & high quality**
Founding Sponsor(s) and Executive Secretariat Host	• ICROA was initiated in 2008 by **eight service providers**, incubated within the Climate Group, and was integrated within IETA in 2011 as a 'semi-autonomous' self-regulating organization • **Secretariat** under IETA
Composition	• **Membership** of organizations **after application, approval and successful completion of a third-party audit**, e.g. service providers, project developers, market intermediaries, consultants, traders • **Executive Committee**: **elected representatives** from the ICROA membership
Decision rights	• Decisions on membership, the Code of Best Practice, and the strategy for the three working groups are made by **the Executive Committee, with support from the Secretariat** for their implementation • Member organizations to provide **externally audited assessment reports**
Lessons learned	• **Self-regulation** of the body with clear mandate that opens itself to scrutiny and public review has worked, now needs deeper resourcing to keep pace with increasing complexity and market developments • ICROA is evolving towards a **more adapted and effective review of standards** to tackle increasing complexities and faster evolution of the market over the last 3-5 years • ICROA considers creating an independent **Advisory Board** to provide critical review and direction • **Assessing standards** is the key to drive quality up. **High-level assessment of eligibility** will be maintained and may proactively go deeper when needed. Certain methodology standards have been excluded at times (e.g. industrial gas and large hydro), however, thorough examination of all methodologies and projects would require enormous resources • **Auditing compliance** to a recognized voluntary Code is effective, especially when supported by sanctions for non-compliance

Experts

Jonathan Shopley

ICROA (Chair), Natural Capital Partners (Managing Director)

Jeremy Manion

ICROA Technical Working Group Co-Chair

Arbor Day Foundation, Carbon Markets & Natural Climate Solutions

Claire Mizutani

ICROA Secretariat (Programme Director)

Source: icroa.org, expert interviews

B.4 | Green Bond Principles – discussion with experts on mandate and lessons learned

Mandate	The GBPs provide **voluntary process guidelines** for issuing **credible green bonds,** aid investors by ensuring **availability of information** to evaluate environmental impact and assist underwriters by moving the market towards **standard disclosures. > 95% of international GBs aligned with GBP**
Founding Sponsor(s) and Executive Secretariat Host	• **Endorsed in 2014 by 13 investment banks**[1]. Development of guidelines has since been coordinated by ICMA through a dedicated Secretariat • **ICMA serves as Secretariat to the Principles**, backed by market participants and stakeholders from the private and official sectors
Composition	• Members consist of **issuers, investors, intermediaries** • Members are **equally represented by category in both Executive and Steering Committee**
Decision rights	• **Members (issuers, investors and underwriters)** elect Executive Committee • **Observers (other stakeholders incl. NGOs)** are consulted on GBP updates • **Executive Committee** makes decisions, 24 members • **Steering Committee** EC elects 3 of its members to coordinate and prepare its deliberations • **Secretariat** hosts the principles and advises the EC
Lessons learned	• **Important to identify and rank stakeholder groups to ease decision taking**, with each group providing input in their field of expertise and with a core group underpinning the governance • **GBP made conscious choice to set the focus on market functioning**, hence membership consists of issuers, investors, intermediaries • **Definition of quality standards (what is green?) is informed by experts** (e.g., from MDBs, market, official sector and civil society), NGOs are observers whose input is taken in formalized dialogue process • **Funding provided by ICMA** and supplemented by members & observers when not ICMA members

1. BAML, Citi, Crédit Agricole, JPMC, BNP Paribas, Daiwa, DB, GS, HSBC, Mizuho, MS, Rabobank and SEB

Source: imcagroup.org, expert interviews

Expert

Nicholas Pfaff

International Capital Market Association (Managing Director, Member of the Executive Committee and Head of Sustainable Finance)

B | Lessons learned from case studies and implications for our Working Group

	Lessons learned	Implications for us
Mandate	**Eligibility of standard setters is assessed** against defined credit standards in a structured review process by expert group to continuously drive quality forward (e.g., ICAO TAB, ICROA) **Eligibility guidelines are defined on methodology type level** (e.g., ICAO TAB – project-based REDD+, ICROA – industrial gas / large hydro). Thorough examination of all methodologies and projects would require enormous resources **Participant eligibility** is defined within a Code of Best Practice (e.g., ICROA)	Governance body needs to **establish, host and continuously adapt CCPs** A combination of **assessment of Standards** as well as **targeted eligibility criteria** for most important methodology types is critical. Going deeper is too resource intensive, while more high-level assessment would not sufficiently ensure quality.
Founding Sponsor(s) and Executive Secretariat Host	**Formed by group of institutions** that shared the same goal (e.g., to improve market functioning and ensure integrity), without a formal public selection process **Secretariat run by industry associations** (e.g., ICROA, GBP)	Umbrella body to be formed by organizations that provide a **high legitimacy and authority** as Founding Sponsors **Suitably resourced Secretariat** should coordinate work and manage processes
Composition	**Expert panels develop assessments and recommendations** for standards eligibility (e.g., ICAO TAB) **Members consultation groups include representatives from all stakeholders** including market participants, often through industry associations (e.g., ICROA, Corsia, GBP) **Board** formed by representatives from Founding Sponsors, experts and / or members (e.g., ICROA, GBP)	**Need to assemble suitable expert panel(s)** with expertise to assess standards and methodology types **Need to ensure representation of all market participants** in member consultation group (e.g., suppliers, standard setters, intermediaries, buyers, etc.)
Decision rights	**Dedicated Board takes decisions based on input from expert panels**, (e.g., ICAO TAB)	Board needs to have the **right experience to make well-informed judgments** informed by experts

B | Other relevant case studies: Climate examples

Best-in-class / main achievements | Challenges faced

Archetype	Governance bodies/ standard setters	Establishment and legitimacy	Decision rights	Organizational design and funding
Private	Chicago Climate Exchange (CCX)	Established **in 2003 by Richard Sandor**, creator of the Sustainable Performance Group. Design was funded by grants from the Chicago-based Joyce Foundation	Internally **governed by the charter and board / technical committees**; externally governed by FINRA and NASD. Membership and transaction based fee model	Trading operations launched with **13 charter members such as City of Chicago, Ford or Motorola**. Membership and transaction based fee model
Public	Executive Board (EB) of the Clean Development Mechanism (CDM)	Board developed under **the authority and guidance of the Conference of the Parties** serving as the Meeting of the Parties to the Kyoto Protocol (CMP)	**Centralized governance structure** (e.g., EB responsible for defining credit standards, appointing auditors, defining country claims, etc.). EB is composed of **10 elected member country reps serving 2-year terms**; accountable to the CMP	**Recommendations to the board are prepared by 5 working groups/ panels**, such as the Methodologies Panel, Accreditation Panel, Registration and Issuance Team, Afforestation and Reforestation WG and CO2 Capture and Storage WG. UN funded via member countries
	Technical Advisory Board (TAB) of ICAO	**ICAO/ UN: action call for emissions reduction and compensation in civil aviation**, with TAB in charge of assessing eligibility. ICAO is the front face of TAB, setting principles and ensuring their adoption	**UN member countries are taking decisions**. TAB provides recommendations to ICAO Council that acts as a decision making body. **TAB does not have direct enforcement power.**	**Selected representatives of ICAO member countries.** Countries submit profiles of experts, 19 experts were chosen to be members of TAB. **Very limited funding** – no remuneration. ICAO provides secretariat services
	Network for Greening the Financial System (NGFS)	Network established by **eight central banks and supervisors** at the Paris One Planet Summit in 2017	Governed by **11 permanent members of the Steering Committee plus any additional members or observers** selected to join	**Consists of 87 members and 13 observers**. Supported by voluntary contributions from members
	The World Bank Group	Bank created at the **1944 Bretton Woods Conference, led by the US and the UK**	Member countries are **represented by a Board of Governors, each with a different share of voting power**. Duties are delegated to 25 Executive Directors	Governed by member countries - **generally, ministers of finance or ministers of development who form the Board of Governors**, Funded via country commitments
Hybrid (public/ private)	Science-Based Targets Initiative (SBTi)	Joint initiative developed by **CDP, the World Resources Institute (WRI), WWF and the UN Global Compact[1] (UNGC)**	**Executive board provides strategic input** and mobilizes resources. **Steering Committee takes day-to-day decisions** and oversees implementation of strategy, delivered by the Core team and advised by the Technical Advisory Group	**Governed by board and steering committee, each of 1 rep from each partner (i.e. CDP, WRI, WWF, UN Global Compact),** and donor organization. Mixed donor and user fee funding

1. The UNGC is a voluntary initiative based on CEO commitments to implement universal sustainability principles and to take steps to support UN goals

B | Other relevant case studies: Non-climate examples

Deep dives next

Best-in-class / main achievements

Archetype	Governance bodies/ standard setters	Establishment and legitimacy	Decision rights	Organizational design and funding
Private	**International Swaps and Derivatives Association (ISDA)**	Founded in 1985 **by members of OTC derivatives trading markets** to build robust, stable financial markets and a strong financial regulatory framework	Governed by **a board of directors who are ISDA primary members** elected according to internal bylaws	Board of directors formed by **30 senior executives of primary member institutions** (vs. 925 total member institutions worldwide). ISDA is funded by a membership fee
	Fairtrade International	Organization **established by charities** CAFOD, Christian Aid, Oxfam, Traidcraft, World Development Movement, and the National Federation of Women's Institutes	**Annual general assembly of representatives across the Fairtrade system** makes key decisions and ratifies the Board of Directors	The Board is elected by the General Assembly, incl. **4 members nominated by three producer networks, 4 members nominated by national Fairtrade organizations, and 3 independent members**. Organization is funded by a membership fee
Public	**Financial Action Task Force (FATF)**	Task Force **established by a Group of Seven (G-7) Summit**, included as part of the G-7's Economic Declaration. Fast ramp-up: published initial set of 40 recommendations 1 year after	**Led by FATF Plenary appointed President, who oversees the FATF Secretariat** (Secretary, 5 working groups, support staff) and chairs all meetings	President and secretary recruited **from high governmental figures/ advisors of member countries.** Funded by annual membership fee as well as voluntary contributions
	Global System for Mobile Communi-cations (GSM)	First **developed out of the European Conference of Postal and Telecommunications Administration (CEPT)**, adopted by the EU as a mandatory standard	**Hosted by an independent nonprofit** that is officially recognized by the EU as a European Standards Organization (ESO); oversight provided via ESO status	Mixed funding: EU funding, membership fee, revenue generated from services
Hybrid (public/ private)	**International Standards Organization (ISO)**	**Union of 2 organizations: Int. Federation of the National Standardizing Associations (ISA) and the UN Standards Coordinating Committee**. Establishment process: 1st 5 yrs: 5 standards, next 5 yrs: 100 standards, next 10 yrs: 1400 standards. By now recognized as most important standard setting body, very strong brand	**Governance provided via the ISO Council**, a selection of 20 members that rotates to ensure representation	Membership in ISO Council open to **all member bodies, ISO officers and the Chairs of the Policy Development Committees**. Mixed funding: membership fee & revenue generated from standard provision
	International Accreditation Forum (IAF)	Formed at meeting of **"Organisations that Accredit Quality System Registrars and Certification programs" with national accreditation networks** present	**All decisions finalized by the IAF member forums** with oversight provided by specific committees	**Governed with MoU/by-laws**. Funded by a membership fee

B | Deep dive: International Accreditation Forum (IAF) (1/2)

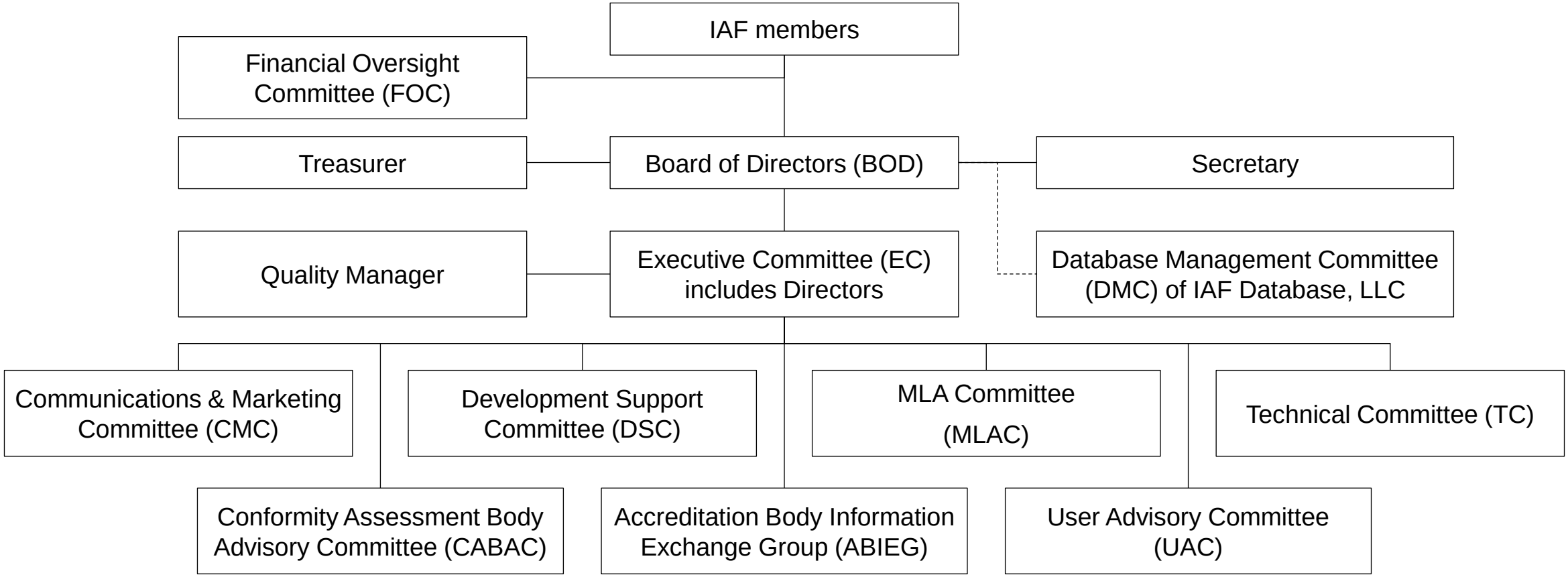
The IAF is the **world association of Conformity Assessment Accreditation Bodies** and other bodies interested in **conformity assessment in the fields of management systems, products, services, personnel and other similar programs** of conformity assessment

Topic		Description
Establishment and legitimacy	Founding Sponsors	Formed at meeting of Organizations that Accredit Quality System Registrars and Certification programs with **five different Accreditation Bodies**, as well as representatives of industry and Certification Bodies present
Decision rights	Decision mechanism	**All decisions finalized by the IAF member forums** with oversight provided by specific committees. Each Accreditation Body Member and Association Member entitled to one vote on any matter put to Members for resolution. The total number of eligible votes cast by Association Members' Representatives must not exceed 3/7 of the eligible votes cast
	Enforcement mechanism	**Membership tied to signing memorandum upon entry**, cancelled if a member not compliant, not paying membership fees etc.
Organizational design	Membership	**Includes Accreditation Bodies** (88 currently), Association Members (23 currently, including Conformity Assessment Body Associations and Industry Associations), Regional Accreditation Groups of Accreditation Bodies (6 currently) and Observers
	Executive Secretariat	**7 Decision Making Committees**, e.g., Technical Committee (documents and norms for the IAF), MLA Committee (peer auditing), Development Support Committee (develops capacity and awareness in developing economies to get more accreditation bodies throughout the world) or Communications and Marketing Committee
	Executive Board	All members of the **Board**, the **Permanent Committee Chairs**, and **Chairs of those Regional Accreditation Groups** which have been granted special status. Guests may be invited to attend meetings as observers
	Board of Directors	**6 Directors**, includes a Chairperson and Vice Chairperson, and two Members elected from each of the Accreditation Body Members and Association Members, term of appointment 3 years
Funding	Funding	Funded by a **membership fee**

Lessons learnt: Inclusivity and balance, peer review process that is credible
Pain points: Ensuring all members that want to be active are active (documents have to be sent very early, language requirements, …) bringing logistics challenges

B | Deep dive: International Accreditation Forum (IAF) (2/2)

International Accreditation Forum Body Structure



Source: IAF website

B | Governance

Case studies of related governance bodies

Relevant ISO standards for the VCM

C | Legal principles and contracts

D | Credit-level integrity

B | Relevant ISO International Standards for VCM (1/3)

Standards for support of CCP principles (assessment framework for standard setters) and governance

TSVCM language	CCP for suppliers and VVBs		Standard setters / CCP assessment framework for standard setters				Governance
	Suppliers	VVBs					
ISO language	Project level - Project proponent in ISO standards	Validation and verification process only	Schemes / programs				Conformity assessment (part of)
Link to ISO terminology			Drafting normative documents for schemes etc	Schemes / programme[1]	Mutual recognition between schemes	Bodies performing VV	Accreditation bodies
Standard reference[2]	ISO 14064-2 link to CCP eligibility guidance	ISO 14064-3	ISO/IEC 17007	ISO/IEC 17029 Annex A[3]	ISO Guide 68 and ISO/IEC 17040	ISO 14065	ISO 14066
Principles or key re-quirement as applicable in the referenced standards	Principles to ensure that GHG-related information is a true and fair account. • Relevance • Completeness • Consistency • Accuracy • Transparency	Principles for the validation and verification Impartiality Evidence based approach. Fair presentation Documentation Conservativeness	Principles for drafting documents • separation of specified requirements for the object of conformity assessment from specified requirements related to conformity assessment activities • neutrality towards parties performing conformity assessment activities • functional approach to conformity assessment – see ISO/IEC 17000:2020 Annex A • comparability of conformity assessment results • good practice in conformity assessment	Scheme principles • confirmation of the ownership, • confirmation of the governance and decision making mechanisms • confirmation of the underlying business and funding model, and • definition of the claim/statement being made • impartiality and competency requirements • conflicts of interest and consultancy • sampling and V/V process definition • reporting requirements • Level of assurance and materiality definition • training requirements • providing an outline for monitoring and periodic review of the scheme. • information about the scheme is made publicly available to ensure transparency, understanding and acceptance. • regularly reviewed, including confirmation that it is fulfilling its objectives	• Establishment of an ‘agreement group’ amongst standards setters • Confirmation of the criteria that will be selected to be the basis of equivalence and mutual recognition between the standards • Define process of peer assessment to check each other’s standards, V/V processes, outcomes to determine equivalence • Implement the process of peer assessment • Results of peer assessment process reviewed by the agreement group, and if accepted then equivalence and mutual recognition of each other’s results	Principles for the validation/verification process • Evidence-based approach to decision making. • Documentation • Fair presentation Principles for validation/verification bodies • Impartiality • Competence • Confidentiality • Openness • Responsibility • Responsiveness to complaints • Risk-based approach • Conservativeness Professional scepticism	

1. Scheme / programme in ISO are defined as: conformity assessment scheme / programme (*set of rules and procedures that describes the objects of conformity assessment, identifies the specified requirements and provides the methodology for performing conformity assessment*)
2. See table at end for details about standards and their titles
3. ISO CASCO guidance on scheme development: https://www.iso.org/publication/PUB100439.html

B | Relevant ISO International Standards for VCM (2/3)

Standards related to Credit integrity / “adherence to the CCP for suppliers and VVBs”

TSVCM language	Standard setters / CCP for suppliers and VVBs	Supplier / CCP for suppliers and VVBs	VVB / CCP for suppliers and VVBs			
Link to ISO terminology	Standards *Term relates to the standards that support the work of suppliers and standard setters.* *Hence standards would provide basis on which additions necessary for a functioning VCM and as defined by Governance / credit integrity in TSVCM work would be built*	Project level - Project pro-ponent in ISO standards	Conformity Assessment in ISO			
ISO language and reference	Project based – ISO 14064-2 *E.g., projects against a base-line – some used in carbon credits / offsetting*	Project quantification, monitoring and reporting design document (proposed)	Validation	Validation and verification body (VVB) governance and operational requirements and process for validation and verifications – ISO 14065 Details of how to carry out validation and verification engagements– ISO 14064-3 Competence of VVB teams - ISO 14066	Oversight of VVB – i.e. accreditation body AB Accreditation body governance and operational requirements – ISO /IEC 17011 Note there are as-sociations of AB such as IAF at international level	Peer evaluation among accreditation bodies to ensure the same approach – ISO/IEC 17040 Peer evaluations sup-ports the multilateral recognition agreements (MLA) between AB IAF has an MLA related to the application of ISO 14065
		Project monitoring and reporting (historical)	Verification			

B | Relevant ISO International Standards for VCM (3/3)

Standards related to Standard setters for corporate claims

TSVCM language	Standard setters for corporate claims						
TSVCM language revised for understanding	**Standard setters**			**Organization**	**VVBs**		
Link to ISO terminology	**Standards** *Term relates to the standards that support the work of standard setters in the claims area. It sets out the various standard elements involved in making a claim from quantification to communication*				**Conformity assessment in ISO**		
	If third party verification is a requirement						
ISO language	Measure (quantify) - Organizational inventory requirements: ISO 14064-1 Reduce - Organizational inhouse project reductions – ISO 14064-1 Offset - see above	How to determine carbon neutrality - ISO 14068 (in development) How to determine carbon footprint of a product – ISO 14067	Criteria for making a claim Self-declaration - ISO 14021 Ecolabels - ISO 14024 Environmental product declaration – ISO 14025 Environmental footprints – ISO 14026	Carry out determination and write claim based on ISO 14064-1, 14064-2, ISO 14064-3, ISO 14067, ISO 14068 and ISO 14021, 14024, 14025 or ISO 14026	Validation and verification body (VVB) governance and operational requirements and process for validation and verifications – ISO 14065 Competence of VVB teams - ISO 14066	Oversight of VVB – i.e. accreditation body AB Accreditation body governance and operational requirements – ISO /IEC 17011 Note there are associations of AB such as IAF at international level	Peer evaluation among accreditation bodies to ensure the same approach – ISO/IEC 17040 Peer evaluations supports the multilateral recognition agreements (MLA) between AB IAF has an MLA related to the application of ISO 14065

B | Claims: Example of principle topics included in standards (1/3)

Main focus	Principles	ISO standard reference
Measure Development of the GHG inventory	Principles for the quantification and reporting of greenhouse gas (GHG) emissions and removals: • Relevance • Completeness • Consistency • Accuracy • Transparency	ISO 14064-1 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
Reduce Reductions associated with the GHG inventory	Principles for the quantification and reporting of greenhouse gas (GHG) emissions and removals: • Relevance • Completeness • Consistency • Accuracy • Transparency	ISO 14064-1 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
Offset Project	Principles to ensure that GHG-related information is a true and fair account. • Relevance • Completeness • Consistency • Accuracy • Transparency	ISO 14064-2 Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements
How to determine carbon neutrality – ISO 14068 (in development) **How to determine** carbon footprint of a product – ISO 14067		

B | Claims: Example of principle topics included in standards (2/3)

Main focus	Principles	ISO standard reference
Criteria for making a claim Self-declaration – ISO 14021 Ecolabels - ISO 14024 Environmental product declaration — ISO 14025 Environmental footprints – ISO 14026	Principles for communication of environmental aspects of products (including climate related claims) • Evidence based methodology • Transparency and availability • Confidentiality • Life cycle perspective • Environmental performance improvement and innovation • Accessibility and avoidance of unnecessary information and administrative demand • Interested parties and consultation • Conformity assessment (including certification, validation and verification) • Comparability • Voluntary • Regionality • Carbon footprints • Carbon neutrality	ISO 14020 Environmental labels and declarations — General principles
Carry out determination and criteria for making a claim based on ISO 14064-1, 14064-2, ISO 14064-3, ISO 14067, ISO 14068 and ISO 14021, 14024, 14025 or ISO 14026		

B | Claims: Example of principle topics included in standards (3/3)

Main focus	Principles	ISO standard reference
Validation and verification body (VVB) governance and operational requirements and process for validation and verifications – ISO 14065	Validation and verification process for GHG- Principles for the validation and verification • Impartiality • Evidence based approach • Fair presentation • Documentation • Conservativeness	ISO 14064-3 – Greenhouse gases — Part 3: Specification with guidance for the verification and vali-dation of greenhouse gas statements
Process as set out in ISO 14064-3	Validation and verification body principles: Principles for the validation/verification process • Evidence-based approach to decision making. • Documentation • Fair presentation Principles for validation/verification bodies • Impartiality • Competence • Confidentiality • Openness • Responsibility • Responsiveness to complaints • Risk-based approach • Conservativeness • Professional scepticism	ISO 14065 General principles and requirements for bodies vali-dating and verifying environmental information
Accreditation body governance and operational requirements		ISO/IEC 17011 Conformity assessment — Requirements for accreditation bodies accrediting conformity assessment bodies

B | Short summary of the various standards (1/6)

Standard reference	Aim of the document as public available on ISO website
ISO/IEC Guide 60:2004 Conformity assessment — Code of good practice	ISO/IEC Guide 60:2004 recommends good practices for all elements of conformity assessment, including normative documents, bodies, systems, schemes, and results. It is intended for use by individuals and bodies who wish to provide, promote, or use ethical and reliable conformity assessment services. These include, as appropriate, regulators, trade officials, calibration laboratories, testing laboratories, inspection bodies, product certification bodies, management system certification/registration bodies, personnel certification bodies, accreditation bodies, organizations providing declarations of conformity, and designers and administrators of conformity assessment systems and schemes, and users of conformity assessment. ISO/IEC Guide 60:2004 is designed to facilitate trade at the international, regional, national, and sub-national level.
ISO/IEC 17011:2017 Conformity assessment — Requirements for accreditation bodies accrediting conformity assessment bodies	ISO/IEC 17011:2017 specifies requirements for the competence, consistent operation and impartiality of accreditation bodies assessing and accrediting conformity assessment bodies.
ISO/IEC 17029:2019 Conformity assessment — General principles and requirements for validation and verification bodies	This document contains general principles and requirements for the competence, consistent operation and impartiality of bodies performing validation/verification as conformity assessment activities. Bodies operating according to this document can provide validation/verification as a first-party, second-party or third-party activity. Bodies can be validation bodies on-ly, verification bodies only, or provide both activities. This document is applicable to validation/verification bodies in any sector, providing confirmation that claims are either plausible with regards to the intended future use (validation) or truthfully stated (verification). However, results of other conformity assessment activities (e.g. testing, inspection and certification) are not considered to be subject to validation/verification according to this document. Neither are situa-tions where validation/verification activities are performed as steps within another conformity assessment process. This document is applicable to any sector, in conjunction with sector specific pro-grammes that contain requirements for validation/verification processes and procedures. This document can be used as a basis for accreditation by accreditation bodies, peer assessment within peer assessment groups, or other forms of recognition of validation/verification bodies by international or regional organizations, governments, regulatory authorities, programme owners, industry bodies, companies, clients or consumers. NOTE This document contains generic requirements and is neutral with regard to the validation/verification programme in operation. Requirements of the applicable programmes are additional to the requirements of this document.

B | Short summary of the various standards (2/6)

Standard reference	Aim of the document as public available on ISO website
ISO 14065:2020 General principles and requirements for bodies validating and verifying environmental information	This document specifies principles and requirements for bodies performing validation and verification of environmental information statements. Any programme requirements related to bodies are additional to the requirements of this document. This document is a sector application of ISO/IEC 17029:2019, which contains general principles and requirements for the competence, consistent operation and impartiality of bodies performing validation/verification as conformity assessment activities. This document includes sector-specific requirements in addition to the requirements of ISO/IEC 17029:2019.
ISO 14064-3:2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements	This document specifies principles and requirements and provides guidance for verifying and validating greenhouse gas (GHG) statements. It is applicable to organization, project, and product GHG statements. The ISO 14060 family of standards is GHG programme neutral. If a GHG pro-gramme is applicable, requirements of that GHG programme are additional to the requirements of the ISO 14060 family of standards.
ISO/IEC Guide 68:2002 Arrangements for the recognition and acceptance of conformity assessment results	ISO/IEC Guide 68:2002 provides an introduction to the development, issuance and operation of arrangements for the recognition and acceptance of results produced by bodies undertaking similar conformity assessment and related activities. The activities to which this guidance is intended to apply are those related to the conduct of unregulated marketplace transactions extending across borders from one country to another. While agreements among governments pertaining to transactions of regulated goods and services can take into account the agreements addressed by this Guide, the guidance provided here is introductory and general in nature and does not specifically address any special requirements that governmental agreements might generate. Some countries may be concerned about having the necessary human and institutional resources with respect to conformity assessment infrastructures which would permit them to participate in such arrangements. Guidance on the acquisition and development of the resources required is beyond the scope of this Guide.

B | Short summary of the various standards (3/6)

Standard reference	Aim of the document as public available on ISO website
ISO/IEC 17040:2005 Conformity assessment — General requirements for peer assessment of conformity assessment bodies and accreditation bodies	ISO/IEC 17040:2005 specifies the general requirements for the peer assessment process to be carried out by agreement groups of accreditation bodies or conformity assessment bodies. It addresses the structure and operation of the agreement group only insofar as they relate to the peer assessment process. ISO/IEC 17040:2005 is not concerned with the wider issues of the arrangements for the formation, organization and management of the agreement group, and does not cover how the group will use peer assessment in deciding membership of the group. Such matters, which could for example include a procedure for applicants to appeal against decisions of the agreement group, are outside the scope of ISO/IEC 17040:2005. More than one type of activity can be included in a peer assessment process. This can be considered particularly appropriate when the body under assessment conducts combined assessments of multiple conformity assessment activities. ISO/IEC 17040:2005 is also applicable to peer assessment amongst accreditation bodies, which is also known as peer evaluation.
ISO/IEC 17007:2009 Conformity assessment — Guidance for drafting normative documents suitable for use for conformity assessment	ISO/IEC 17007:2009 provides principles and guidance for developing normative documents that contain: • specified requirements for objects of conformity assessment to fulfil; • specified requirements for conformity assessment systems that can be employed when demonstrating whether an object of conformity assessment fulfils specified requirements. ISO/IEC 17007:2009 is intended for use by standards developers not applying the ISO/IEC Directives, industry associations and consortia, purchasers, regulators, consumers and non-government groups, accreditation bodies, conformity assessment bodies, conformity assessment scheme owners, and other interested parties, such as insurance organizations.
ISO/IEC 17000:2020 Conformity assessment — Vocabulary and general principles	This document specifies general terms and definitions relating to conformity assessment (including the accreditation of conformity assessment bodies) and to the use of conformity assessment to facilitate trade. The general principles of conformity assessment and a description of the functional approach to conformity assessment are provided in Annex A. Conformity assessment interacts with other fields such as management systems, metrology, standardization, and statistics. The boundaries of conformity assessment are not defined in this document.

B | Short summary of the various standards (4/6)

Standard reference	Aim of the document as public available on ISO website
ISO 14064-1 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and re-porting of greenhouse gas emissions and removals	This document specifies principles and requirements at the organization level for the quantification and reporting of greenhouse gas (GHG) emissions and removals. It includes requirements for the design, development, management, reporting and verification of an organization's GHG inventory. The ISO 14064 series is GHG programme neutral. If a GHG programme is applicable, requirements of that GHG programme are additional to the requirements of the ISO 14064 series.
ISO 14064-2 Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements	This document specifies principles and requirements and provides guidance at the project level for the quantification, monitoring and reporting of activities intended to cause greenhouse gas (GHG) emission reductions or removal enhancements. It includes requirements for planning a GHG project, identifying and selecting GHG sources, sinks and reservoirs (SSRs) relevant to the project and baseline scenario, monitoring, quantifying, documenting and reporting GHG project performance and managing data quality. The ISO 14060 family of standards is GHG programme neutral. If a GHG pro-gramme is applicable, the requirements of that GHG programme are additional to the requirements of the ISO 14060 family of standards.
ISO 14067 Greenhouse gases — Carbon footprint of products — Require-ments and guidelines for quantification	This International Standard specifies principles, requirements and guidelines for the quantification and reporting of the carbon footprint of a product (CFP), in a manner consistent with International Standards on life cycle assessment (LCA).
ISO 14068 Carbon Neutrality (in development)	This International Standard will specify the requirements and principles to be met when seeking to pursue, demonstrate or potentially exceed greenhouse gas, carbon or climate neutrality through the quantification, management, avoidance, reduction, substitution, compensation and sequestration of GHG emissions

B | Short summary of the various standards (5/6)

Standard reference	Aim of the document as public available on ISO website
ISO 14020 Environmental labels and declarations — General principles	This International Standard establishes guiding principles for the development and use of environmental labels and declarations. It is intended that other applicable standards in the ISO 14020 series be used in conjunction with this International Standard.
ISO 14021 Environmental labels and declarations — Self-declared environmental claims (Type II environmental label-ling)	The International Standard specifies requirements for self-declared environmental claims, including statements, symbols and graphics, regarding products. It further describes selected terms commonly used in environmental claims and gives qualifications for their use. This International Standard also describes a general evaluation and verification methodology for self-declared environmental claims and specific evaluation and verification methods for the selected claims in this International Standard.
ISO 14024 Environmental labels and declarations — Type I environmental labelling — Principles and procedures	This International Standard establishes the principles and procedures for developing environmental labelling programmes, including the selection of product categories, product environmental criteria and product function characteristics, and for assessing and demonstrating compliance. ISO 14024 also establishes the certification procedures for awarding the label.
ISO 14025 Environmental labels and declarations — Type III environmental declarations — Principles and procedures	This International Standard establishes the principles and specifies the procedures for developing environmental declaration programmes and declarations. It specifically establishes the use of life cycle assessment. Environmental declarations as de-scribed in ISO 14025 are primarily intended for use in business-to-business communication, but their use in business-to-consumer communication under certain conditions is not precluded.
ISO 14026 Environmental labels and declarations — Principles, requirements and guidelines for communication of footprint information	This International Standard provides principles, requirements and guidelines for footprint communications for products addressing areas of concern relating to the environment. ISO 14026 also provides requirements and guidelines for footprint communication programmes, as well as requirements for verification procedures.

B | Short summary of the various standards (6/6)

Standard reference	Aim of the document as publicly available on ISO website
ISO GUIDE 84:2020 Guidelines for addressing climate change in standards	This document gives guidance to standards writers on how to take account of cli-mate change in the planning, drafting, revision and updating of ISO standards and other deliverables. It outlines a framework and general principles that ISO standards writers can use to develop their own approach to addressing climate change on a subject-specific basis. It aims to enable standards developers to include adaptation to climate change (ACC) and climate change mitigation (CCM) considerations in their standardization work. Considerations related to ACC are intended to contribute to increasing preparedness and disaster reduction as well as impacting the resilience of organizations and their technologies, activities, or products (TAPs). Considerations related to CCM consist primarily of approaches that seek to avoid, reduce or limit the release of GHG emissions and/or increase GHG removals.

ISO is an independent, non-governmental international organization established in 1946 with a membership of 165 nation state standards bodies. It is dedicated to the development and publication of international standards (over 23,500 standards to date). ISO covers technical and management standards relevant to all sectors of the economy. Work is progressed through technical committees in defined fields. About 4000 standards are currently in preparation and around 768 international organizations are in liaison with this work. At the organization level, increased co-operation across the technical international standard setters (ISO, IEC and ITU-T) through The World Standards Cooperation (WSC), and The Standardization Program Coordination Group (SPCG) has also been enhanced through an imperative issued on 13th January 2021.

In addition to ISO's Committee on Conformity Assessment (CASCO), ISO operates many relevant Technical Committees including TC207, Environmental Management, TC309 Governance of Organizations, TC322 Sustainable Finance. ISO has also established a Climate Change Co-ordination Committee (CCCC) that has internal and external facing mandates.

This document considers the ISO standards landscape and focuses on common under-pinning content relevant to TSVCM current work and focus. It has been drafted to help those engaged in the TSVCM work. The ISO standards referenced have wide use and recognition in the global economy and consideration of synergy with these standards could be beneficial.

Document compiled 29 April 2021.

Dr Anne-Marie Warris – on behalf of ISO CASCO

Nick Blyth - Convener of ISO Climate Change Coordination Committee

B | Governance

C | Legal principles and contracts

I | Use cases and underlying contract mechanics

II | Operational requirements for Standards' Terms of Use

III | Key general trading terms

D | Credit-level integrity

C.I | Consumer foods player wants to fulfil a Net Zero pledge through spot contracts

A consumer foods corporate makes a commitment to Net Zero for 2025

In order to remain on the Net Zero pathway it needs to compensate **1MT of CO_2eq** from emissions it is unable to abate this year

- It will seek **removal credits**, in line with its Net Zero claim
- In line with CSR activities in nature conservation, they would like to pursue **nature-based credits**
- Due to legal concerns in it jurisdiction, it chooses **delivery by supplier**

The ultimate goal of the company is to **retire the credits every year along the pathway to Net Zero 2025**

Delivery method: physical delivery to buyer

	Prior to trade	Initial contract agreement	Delivery	Retirement
Buyer 	Opens an account with a spot exchange Opens accounts with three registries (as required by the exchange)	Selects 1MT of carbon spots (removal; nature-based) to purchase	Pays the commodity exchange Receives credits in relevant registry account	Retires credits at his convenience
Spot Exchange 	Vets buyers and suppliers to ensure compliance with KYC	Matches the buyer to a seller on the opposite side of the transaction (removal; nature-based)	Orders transfer from supplier to buyers account through API	
Standards 	Issues credits from suppliers it has vetted Validates projects and tags them as CCP compliant Tags credits with additional attributes (in this case removal / nature)	Automatically updates through APIs linked to Standards to confirm availability of credits	Automatically updated through APIs linked to the Standards	
Supplier 	Has accounts with a Standard and with an exchange		Moves credit into escrow of exchange	

Note: This is an example use case which does not suggest endorsement of any specific approaches. The types of claims mentioned refer to external standards that were not developed by the TSVCM.

C.I | Integrated contract mechanics enable additional use cases for future delivery

Upfront project funding through an offtake agreement with a fixed price to hedge price risk for the supplier

Delivery method: physical delivery

An Asian forestry project developer requires the future returns from its removal credits upfront, to fund saplings.
A large international **O&G company funds 50% upfront** and commits to buy the CCP removal credits over the next 10 years at a fixed price via an ERPA. Based on this agreement a **bank funds the other 50% via a loan**.
The Parties use the **price signals from long-term meta-future removal contracts** which they use for **hedging their price risks** and for yearly valuation of their agreements.

Intermediary hedging against price risk

Delivery method: physical delivery

A global retailer wants to compensate its carbon footprint by **retiring CCP credits via an intermediary every quarter** of the year.
The retailer requires in its RfP that the intermediary guarantee a fixed price over the course of the year. The intermediary **hedges the price risk via the meta-future contract** and retires the CCP credits in the name of the retailer in its meta-registry account.

End-user hedging against price risk through a call option

Delivery method: physical delivery

A large international bank wants to compensate its carbon footprint for the first time for the upcoming year.
Due to large uncertainty in the volume and rising prices for CCP credits it decides to buy the minimum number of credits needed in Q1 via a **spot exchange**.
For the uncertain amount their commodity trading desk is able to price a call option and **hedge the underlying risk via the liquid December meta-future contract**.

Swapping a futures contract into spot contracts close to the retirement date

Delivery method: cash delivery of futures followed by physical delivery of spots

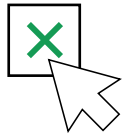
Due to fluctuating utilization of its fleet in the course of the year, an airline decides to buy CCP credits via the **meta-future contract maturing in December** regularly based on its monthly MRV numbers.
Close to delivery of the contract in December it **swaps its future position into different spot contracts** representing projects in regions where it is active in.

Note: These are example use cases which do not suggest endorsement of any specific approaches.

C.I | Point of Sale Use Case: Airline offers carbon neutral flight options to customers upon ticket sale

An airline offers its customers the possibility to compensate the trip they are purchasing

Would you like to compensate the emissions from your flight?



The airline moreover offers two possibilities for compensation:

- Industry-relevant compensation via SAF
- Compensation via nature-based carbon removal

Customers have agency in how they compensate

On a daily basis, the airline goes to the Exchange to purchase the mix of credits selected by their clients

In order to buy high-quality credits over the exchange, the airline purchases CCPs tagged with a methodology type attribute

In anticipation of a busy summer-season, the airline can hedge against price risk by purchasing CCP futures contracts

Purchasing large quantities of high-quality credits is straightforward with low-transaction costs

The airline receives and retires CCP credits from several different Standards in its meta-registry account

Delivery and retirement occur at the meta-registry within 1 day of the purchase

The airline is able to email the client a reservation update specifying the projects that have supplied their credits

Credits remain fully traceable and the end-consumer has visibility of the projects they support

Source: Adapted from Airline website, mechanics are hypothetical.
Note: This is an example use case which does not suggest endorsement of any specific approaches.

C.I | Carbon Index Fund through an Asset Manager: Clothes retailer buys carbon index fund to fulfil its Carbon Neutral pledge in 2022

Delivery method: cash delivery to buyer

A leading clothes retailer makes a commitment to be Carbon Neutral in 2022

To achieve this, it will need to compensate **3MT of CO_2eq** from emissions it is unable to abate

- In order to efficiently purchase 3MT CO_2eq, it will seek **exchange-traded contracts**
- It wishes to **hedge against price risk** and purchase credits in 2022 through its **different subsidiary brands** so that each can be Carbon neutral
- It will hence **purchase a carbon credit index fund centrally** then trade its stake for cash delivery and purchase credits with physical delivery through the subsidiaries

	Prior to trade	Initial contract agreement	Delivery	Retirement
Buyer	Opens an account with an asset manager who runs a CCP index fund	Purchases 3MT from a carbon index fund through the Asset Manager Holds its stake in the index fund until 2022 The index fund's price fluctuates – so the value of the buyer's share varies	In 2022, sells its stake in the index fund and receives the cost of 3MT carbon credits at the index fund's current price	In a separate transaction, uses the cash obtained from the transaction to purchase credits with physical delivery through its different subsidiaries
Asset manager	Purchases CCP credits with methodology, region and vintage diversification into an index fund through an exchange	Periodically updates the CCP credit portfolio in the fund to match how much cash has been invested in it As the CCP credits in the index fund were selected to represent the CCP market, the index fund's price tracks the overall price of CCP credits		
Exchange	Carries out the Asset Manager's trades as it buys and sells credits in and out of the index fund		Matches the buyer's sale transaction with a player who wants to buy into the Index fund and carries out the exchange	

Note: This is an example use case which does not suggest endorsement of any specific approaches. The types of claims mentioned refer to external standards that were not developed by the TSVCM.

C.I | Carbon Index Fund through an Exchange: Advanced electronics player wants to fulfil a Net Zero pledge through an initial contract for removal

An advanced electronics corporate makes a commitment to Net Zero for 2030

In order to remain on the Net Zero pathway it needs to compensate decreasing amounts every year from emissions it is unable to abate this year

- It will seek **removal credits**, in line with its Net Zero claim
- They will require **fewer credits as time passes**
- They prefer to **subscribe to a carbon credit index fund** and manage position size smaller as required

The ultimate goal of the company is to **beat its predicted need for CCP credits** and reduce size of exposure periodically into secondary market.

Delivery method: physical delivery to custodian

	Prior to trade	Initial contract agreement	Delivery	Retirement
Buyer	Opens an account with a broker dealer who has access to meta registry	Buys into a carbon index fund that retires a share of its credits daily through their broker dealer Pays the Exchange for the share of the index fund it will receive at its current price	Every day until 2030 receives a subset of credits from the index fund to be retired	Daily retirement is automatic and overall retirement is related to the number of days CC is owned
Spot Exchange	Vets buyers and suppliers to ensure compliance with KYC	Apportions subscription in conjunction with broker dealers.	Orders transfer from supplier to buyers account through API records	Exchange can offer remaining credits on secondary market as spot or FRA
Standards	Issues credits from suppliers it has vetted Validates projects and tags them as CCP compliant Tags credits with additional attributes (in this case removal / nature)	Automatically updates through APIs linked to Standards to confirm quality of credits supporting valuation	Automatically updated through APIs to confirm how well CCP credits are performing against predicted creation.	
Supplier	Has accounts with a Standard and with an exchange		Moves credit into escrow of exchange	

Note: This is an example use case which does not suggest endorsement of any specific approaches. The types of claims mentioned refer to external standards that were not developed by the TSVCM.

C.I | CCPs enable innovative approaches to collectivizing risk and streamlining how credits are created, transferred, and used

Prior to project development

Developers

Commits to delivering **12** MT of credits

Receives initial project funding

Commits to delivering **10** MT of credits

Receives initial project funding

Commits to delivering **8** MT of credits

Receives initial project funding

Financial intermediary

Collective portfolio

(Tranches of the portfolio could be traded through OTC or Exchanges)

Investors

Invests x USD upfront, gets to own **20%** or portfolio

Invests xx USD upfront, gets to own **30%** of portfolio

Invests xxx USD upfront, gets to own **40%** of portfolio

Invests xxxx USD upfront, gets to own **10%** of portfolio

As projects are issuing credits

Developers

Delivers **12** MT of credits

Receives performance payment

Delivers **9** MT of credits

Receives performance payment

Defaults, **does not** deliver credits

Financial intermediary

Collective portfolio

(Tranches of the portfolio could be traded through OTC or Exchanges)

Investors

Receives **20%** of credits

Receives **30%** of credits, retires them

Receives **40%** of credits

Receives **10%** of credits

Buyers

Sells credits on the **secondary market**

Sells credits on the **secondary market**

Sells credits on the **secondary market**

Different developers **apply to the financial intermediary**

Submit **project proposals** for reforestation, committing to deliver specific amounts of credits in the future

The financial intermediary **vets** developers, verifies projects proposed through **Partner Standards**, and funds **upfront project costs**

Insures projects through **third-party insurers**

The collective portfolio is a **regulated financial product**

Investors invest into the collective portfolio, getting to hold a certain percentage of it

Once the trees are grown, **credits are issued** and go to the account of the financial intermediary

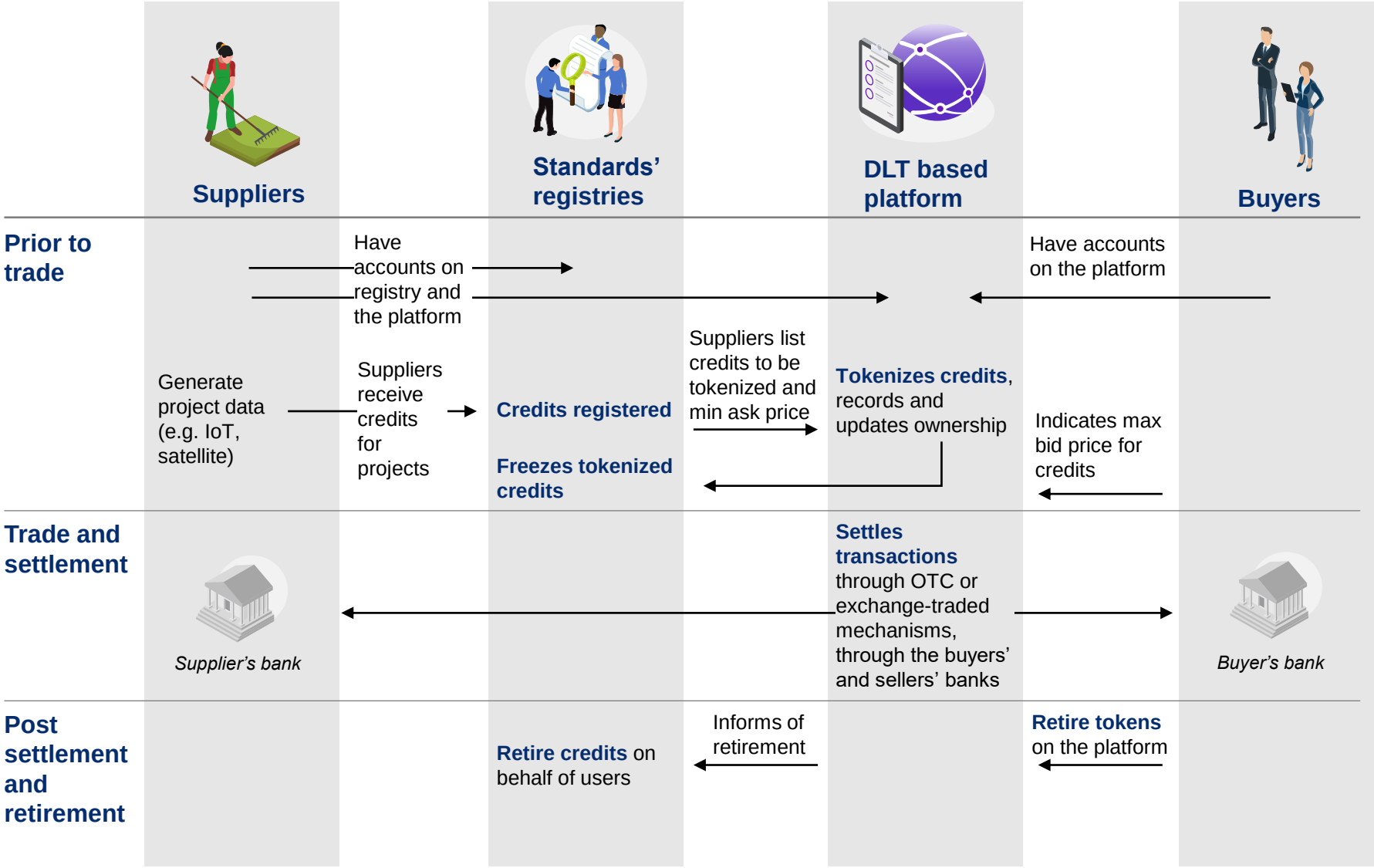
The financial intermediary **transfers credits** to the investors' accounts

Investors **receive credits into their accounts**, pro rata according to their upfront investment

Can **retire** the credits or **sell** them on the secondary market

Buyers **receive credits into their accounts**, **retire** them

C.I | In the long run, the market could move towards end-to-end DLT[1] based models



Intermediary platforms can help facilitate and streamline carbon trading by combining an array of functions:

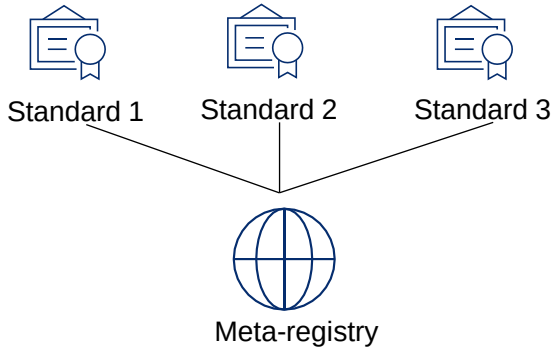
- **Tokenization of credits:** Parties trade tokens (claims on a credit in an source registry) rather than actual credits
- **Acting as an intermediary for different Standards, recording ownership of tokens, and mediating retirement**: Buyers no longer have to have accounts in multiple Standards
- **Transaction and price transparency:** the intermediary publishes details of past transactions and indicates max bid price publicly
- **Facilitating access for and to smaller players**: administrative complexity for both suppliers and buyers is minimized

Such future use cases can be further enhanced through **technology solutions** like smart contracts

1. Distributed legder technology

C.I | Key enabler: potential evolution of meta-registry services to consider in Taskforce recommendations

Short term (pilot stage)



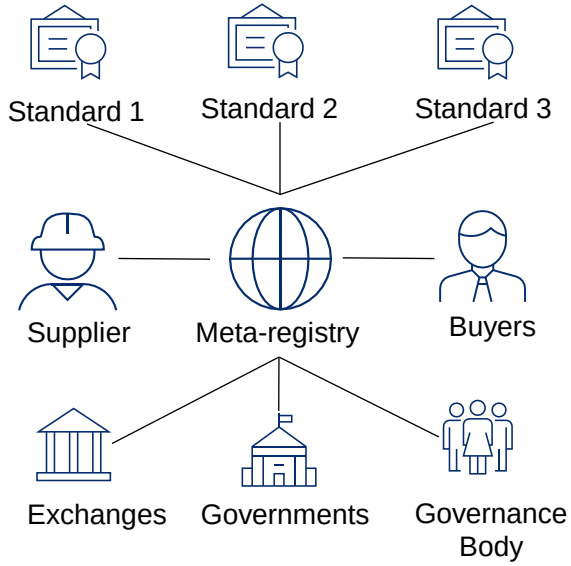
Role: Data display

Functions:

- Aggregates and displays **registry data**
- Allows standards / the public to check for **double counting**
- **Hosts standard clauses** and Terms of Use

Potential candidates: IHS, World Bank

Mid-term (<5 years)

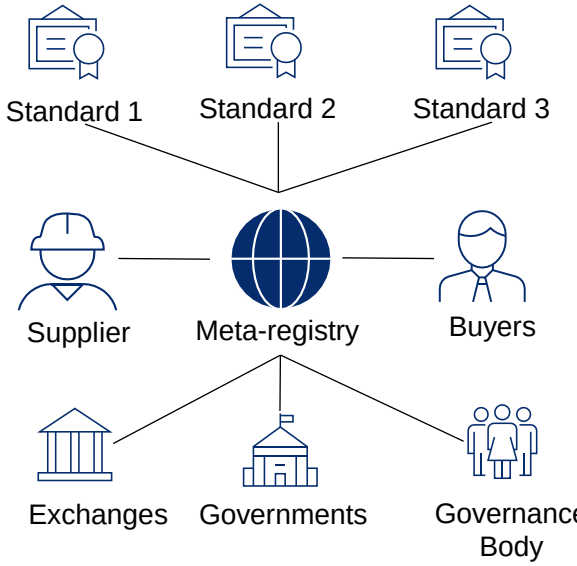


Role: Market infrastructure provider

Additional functions:

- Allows for **transfers and retirements** between accounts in different Standards
- Connects to **Exchanges** through an API allowing secure trading of credits
- Connects to governments and national accounting, tracks **corresponding adjustments**
- Connects to the future **Governance Body**, monitors and validates **Standards' compliance** with Governance Body guidelines

Long term (>5 years)



Role: Market intermediary

Additional functions:

- Allows **end-to-end trading** and setting of transactions
- Holds **physical ownership** while credits are being traded
- Holds **collective buffer pools** backed by governments, insurers or other relevant institutions
- Integrates with **NDCs** to ensure that credits are not only associated to CAs but to countries' achieving they NDCs

B | Governance

C | Legal principles and contracts

I | Use cases and underlying contract mechanics

II | Operational requirements for Standards' Terms of Use

III | Key general trading terms

D | Credit-level integrity

C.II | Operational requirements for Standards' Terms of Use

The **Governance Body** will outline the requirements in further detail and update them on a regular basis; Standards will have to adhere to them in order to issue CCP credits

Topic	Proposal
Uniform onboarding procedures	Standards will have in place rigorous onboarding procedures that Users undergo upon registration, in order to identify fraudulent actors. Periodic checks will be performed on a regular basis thereafter. Standards may collaborate with and/or seek support from third parties (e.g. banks) in complying with requirements on onboarding procedures. The Governance Body will have the mandate to define minimum documentation required by the Standards.
Force Majeure	Standards will not be held liable for losses incurred under Force Majeure. The Taskforce recommends that Standards' certification and registration contracts include provisions that specify the nature of events covered under Force Majeure, contract termination under Force Majeure and reimbursement processes.
Limitation of liability	Registry Users will assume full responsibility and risk of loss resulting from their use of the registry and will have no claim against the Standard or any of its contractors.
Prohibited practices and suspension of service	Standards shall suspend services and/or close the User's account with immediate effect if they reasonably suspect that the User has engaged in fraudulent, unethical or illegal activity, including but not limited to corruption, bribery, slavery, or child labor. The Governance Body will define a minimum threshold of practices all Standards must prohibit. Standards commit to making all reasonable efforts to ensure that neither developers nor their subcontractors engage in such practices, e.g. through onboarding due diligence and periodic spot checks.
Auditable logs	Standards commit to keeping auditable transaction logs and secure transfer procedures. The Governance Body may specify best practices and/or adopt internationally recognized security standards and update them going forward (e.g. in the future potentially mainstreaming blockchain-based logs).
Dispute resolution	The TSVCM recommends Standards require arbitration.
Tax compliance	Standards ensure to the maximum degree possible that developers pay all taxes and charges imposed by governmental authorities related to the use of the Standard.
Cyber-security	Standards should have in place cybersecurity systems adequate to minimize risks related to hacking and fraud. The Governance Body may specify best practices and/or adopt internationally recognized security standards and update them going forward.
Termination	The Governance Body will specify a minimum period of notice Parties will give each other before terminating the Agreement. Standards will exclude Users who don't comply with their obligations, double claim or otherwise engage with other Users in bad faith.

Note: Reversal events, buffer pools, invalidation and insurance are addressed by the Credit-level integrity Working Group

B | Governance

C | Legal principles and contracts

I | Use cases and underlying contract mechanics

II | Operational requirements for Standards' Terms of Use

III | Key general trading terms

D | Credit-level integrity

C.III | Key general trading terms (1/7)

Topic	Proposal
Definition of the products	**Product 1:** "CCP credit" means a **carbon removal credit** that has been issued by one of the Standards approved under the Governance Body and that meets all of the requirements of and has been certified and verified in accordance with the Core Carbon Principles and with [* insert additional attributes], as amended from time to time, and is equal to one (1) metric ton of carbon dioxide equivalent removed, and which includes any and all rights that may be created under any regulatory or legal regime as a result of the greenhouse gas removal (e.g., any right, interest, credit, entitlement, or benefit arising from or in connection with the greenhouse gas removal). **Product 2:** "CCP credit" means a **carbon avoidance/reduction credit** that has been issued by one of the Standards approved under the Governance Body and that meets all of the requirements of and has been certified and verified in accordance with the Core Carbon Principles and with [* insert additional attributes], as amended from time to time, and is equal to one (1) metric ton of carbon dioxide equivalent avoided/reduced, and which includes any and all rights that may be created under any regulatory or legal regime as a result of the greenhouse gas avoidance/reduction (e.g., any right, interest, credit, entitlement, or benefit arising from or in connection with the greenhouse gas avoidance/reduction). **Product 3[1]:** "CCP credit" means a **either a carbon avoidance/reduction or a carbon removal credit** that has been issued by one of the Standards approved under the Governance Body and that meets all of the requirements of and has been certified and verified in accordance with the Core Carbon Principles and with [* insert additional attributes], as amended from time to time, and is equal to one (1) metric ton of carbon dioxide equivalent removed or avoided/reduced, and which includes any and all rights that may be created under any regulatory or legal regime as a result of the greenhouse gas avoidance/reduction (e.g., any right, interest, credit, entitlement, or benefit arising from or in connection with the greenhouse gas avoidance/reduction).
Avoidance of double counting / claiming / use	The Seller represents and warrants to the Buyer with respect to each CCP transaction, as of the Trade Date and as of each date that the Seller initiates a transfer and delivers any CCP credit under such CCP transaction, that the Seller has not and will not use or make any claims with respect to, and has not sold, transferred, assigned, licensed, retired, disposed of, granted or otherwise created any interest in the CCP credit other than as contemplated by this Agreement. In a primary sale, the Seller commits not to double count, i.e. not to have registered CCP credits in more than one Standard. Upon being transferred the CCP credit, the Buyer commits to use, make claims with respect to, or further sell the credit exclusively one time on behalf of either themselves or subsequent Buyers. *The Taskforce recommends that potential technology solutions be explored and considered which can help avoid double counting / claiming / use (e.g. blockchain-based logs; reference number systems similar to ISIN as laid out in the TSVCM Phase I report).*

1. For projects issuing both removal / sequestration and avoidance / reduction credits project developers specify a respective ratio (see section on Credit-level integrity)

C.III | Key general trading terms (2/7)

Topic	Proposal
Settlement and delivery	**For OTC**: Parties hold accounts in [* insert Standard]. **For Exchange-traded contracts**: Parties hold accounts in all Standards that the Exchange shall transfer them credits from. The Parties should consider the technical, legal and regulatory implications of the chosen delivery mechanism in their jurisdiction, i.e. physical, financial, or deemed delivery and/or retirement without deemed delivery. **Option 1:** The contract is settled through physical or deemed delivery, i.e. transfer of title from the Seller's account to the Buyer's account and subsequent retirement by the Buyer. **Option 2:** The contract is settled financially or through retirement without deemed delivery. Upon retirement, the Buyer shall be provided with written evidence of the retirement either by the Standard or by the relevant intermediary which retires the credits in their account on behalf of the Buyer (Broker, Exchange, or Meta-registry, as the case may be).
Failure to deliver	**Where credits have been issued**, the sole and exclusive remedy of the Parties in the event of the breach of an obligation to deliver or receive credits shall be recovery of the following: i. In the event of a breach by the Seller, payment by the Seller to the Buyer in an amount equal to the difference between the contract quantity and the actual quantity delivered by the Seller for such day, multiplied by the positive difference, if any, obtained by subtracting the contract price from the replacement price; or ii. In the event of a breach by the Buyer, payment by the Buyer to the Seller in an amount equal to the difference between the contract quantity and the actual quantity delivered by the Seller and received by the Buyer for such day, multiplied by the positive difference, if any, obtained by subtracting the applicable replacement price from the contract price. The amount of such unfavorable difference shall be payable [two (2)] business days after presentation of the performing Party's invoice. The contract will specify the replacement cost calculation methodology which may be based on a floating reference price. *Alternatively, the Parties may agree upfront on non-cash remedies for potential shortfall, e.g. replacement through equivalent CCP credits with acceptance of a longer delay.* **Where credits are in development**, the Buyer and the Seller may decide to apply the same provisions as where the credits have been issued. Otherwise, they may negotiate appropriate remedies for non-delivery.
Force Majeure[1]	**Force Majeure** means, in respect of either Party, any occurrence of one or more of the following event(s) or circumstance(s) (only) which are beyond the reasonable control of the affected Party acting (and having acted) in accordance with prudent operating practice and which results in or causes the failure of the affected Party to perform any of its obligations under this Agreement: strike, natural physical disaster (including hurricanes, earthquakes, flooding, drought, natural fires, cyclones, tornados), pandemic, act of the public enemy, war declared or undeclared, threat of war, terrorist act, blockade, revolution, riot, insurrection, civil commotion or public demonstration, or expropriation by the Government, provided that neither a lack of funds nor disturbances in the operation of the Project shall be treated as an event of Force Majeure.

1. This term applies primarily to trading; reversal events are addressed by the Credit-level integrity Working Group

C.III | Key general trading terms (3/7)

Topic	Proposal
Force Majeure	1. If a Party (the Affected Party) is, or anticipates that it will be, unable to perform an obligation under this Agreement due to the occurrence of a Force Majeure Event, it shall provide the other Party (the Non-Affected Party) with written notice providing details of the Force Majeure Event (the Force Majeure Notice) within three (3) Business Days of becoming aware of such Force Majeure Event. 2. If the Affected Party is unable to perform an obligation under this Agreement due to the occurrence of a Force Majeure Event, such non-performance: (i) shall be permitted during the time and to the extent that performance is prevented by the Force Majeure Event, but only during that time and to that extent; and (ii) shall not give rise to any liability to the Non-Affected Party for any losses or damages arising out of, or in any way connected with, such non-performance during the occurrence of the Force Majeure Event. 3. The Affected Party shall use all reasonable efforts to remove or mitigate the relevant effects of the Force Majeure Event. 4. No Party shall be relieved by a Force Majeure Event from any obligation under this Agreement which it remains able to fulfil notwithstanding the occurrence of such Force Majeure Event, including any obligation to provide any notice pursuant to this Agreement. 5. If, by reason of a Force Majeure Event, the Affected Party is unable to perform an obligation under this Agreement (including an obligation to deliver the CCPs), and that non-performance continues for a period of [six (6)] months after the date that the Force Majeure Notice is received by the Non-Affected Party without the Parties being able to negotiate a mutually acceptable alternative means of carrying out the intention of this Agreement by the end of such period, the Non-Affected Party may terminate this Agreement by written notice to the Affected Party. 6. If the Agreement is terminated in accordance with clause [1.5], the Parties obligations under the Agreement (except those specified to survive termination) will be released and discharged and the Force Majeure termination payment to be made between the Parties (if any) shall be calculated in accordance with [sub-paragraph (a), (b) or (c) below (as selected by the Parties) (i) No Termination Payment: No Force Majeure termination shall be made between the Parties; provided, however, that the obligation to pay any amounts accrued but unpaid at the termination Date shall survive the termination of the Agreement. (ii) Partial Termination Payment: In respect of any scheduled delivery dates affected by the Force Majeure, the Force Majeure Affected Party shall pay the other Party Buyer's Market Damages or Seller's Market Damages, as the case may be. (iii) Full Termination Payment: the Force Majeure Affected Party shall pay the other Party Buyer's Market Damages or Seller's Market Damages, as the case may be. 7. Reversal events will not lead to any liability between Buyer and Seller.

C.III | Key general trading terms (4/7)

Topic	Proposal
Limitation of liability	**Option 1:** Except to the extent expressly provided for in this Agreement, neither Party is liable to the other, whether in contract, tort (including negligence and breach of duty) or otherwise at law, for any business interruption or loss of use, profits, contracts, production, or revenue or for any consequential or indirect loss or damage of any kind however arising. **Option 2:** Neither party shall be liable to the other party or any third party under any circumstances arising from contract (including under any indemnity), in tort (including negligence), under any warranty (express or implied) under statute or otherwise in each case for any indirect, incidental, exemplary, special or consequential punitive losses or damages arising under this Agreement, including loss of profits, regardless of whether such damages could have been foreseen or prevented. **Option 3:** Except as specifically provided in the Agreement, in no event, including the negligent act or omission on its part, shall either party be liable to the other, whether under the Agreement or otherwise in connection with it, in contract, tort, statutory duty or otherwise, in respect of any indirect or consequential losses or expenses including if and to the extent that they might otherwise not constitute indirect or consequential losses or expenses, loss of profits, goodwill, reputation, business receipts or commercial opportunities, whether or not foreseeable.
Compensation	Each party shall compensate the other party, and each of the other party's affiliates, directors, officers, employees, agents and permitted assigns, for any and all claims, losses, liabilities, damages, judgments, awards, fines, penalties, costs and expenses (including reasonable attorneys' fees and disbursements) directly incurred in connection with or directly arising from or out of i. any violation of applicable law, regulation or order by such party; and/or ii. any breach of a representation or warranty by such party.[1]

1. Based on 2010 ISDA US Emissions Allowance Transaction Annex to the Schedule to the ISDA Master Agreement

C.III | Key general trading terms (5/7)

Topic	Proposal
Change in law	**Change in Law** means the introduction of, change in, or change in application of, any law, regulation, binding rules (including, without limitation, the Standard Rules and the rules issued by the Governance Body), policy or codes or requirement of a Government Agency (or a change in the interpretation of these by any relevant Government Agency) which would materially and adversely affect the ability of a Party to enforce its rights or fulfil its material obligations under this Agreement. **Option 1:** i. The Parties acknowledge that this Agreement has been negotiated at a time when the potential application of Applicable Laws and rules of the Applicable Standard(s) are uncertain. Each Party therefore agrees to use commercially reasonable efforts to mitigate any adverse effects on the generation of CCPs arising from changes to the Applicable Laws and rules of the Applicable Standard(s). ii. To the extent that a change to the Applicable Laws or rules of the Applicable Standard(s) results in additional processes or requirements that have no material impact upon the quantities of CCPs to be delivered under this Agreement, so far as reasonably practicable the Seller shall be responsible for complying with such changes. iii. To the extent that a change to the Applicable Laws or rules of the Applicable Standard(s) results in the Seller being prevented from delivering the Annual CCPs, the Buyer will be entitled to terminate this Agreement by providing written notice in accordance with clause x. **Option 2:** i. If on or after the Commencement Date, there is a Change in Law with which either Party is required to comply (whether made at the direction of any government, regulator, Standard Body or otherwise) and as a result, such party is unable to comply with one or more material provision of this Agreement, then at the written request of any Party, the Parties shall meet in good faith and seek to agree to the amendments (if any) to this Agreement necessary and appropriate to take into account of the changes so that this Agreement may continue in force. ii. Where the Parties are unable to agree an amendment to this Agreement within a period of [twenty 20] Business Days of a Party making a written request under clause [i], either Party may terminate this agreement in accordance with clause [x].

C.III | Key general trading terms (6/7)

Topic	Proposal
Dispute resolution	In addition to the choice of governing law, the Parties should consider the choice of the appropriate dispute forum. **Option 1.a: Exclusive jurisdiction clause[1]** With respect to any dispute, claim, difference or controversy arising out of, relating to or having any connection with this Agreement, including any dispute as to its existence, validity, interpretation, performance, breach or termination or the consequences of its nullity and any dispute relating to any non-contractual obligations arising out of or in connection with it, each party irrevocably: i. Submits to the exclusive jurisdiction of the [* insert jurisdiction] courts; and ii. Waives any objection which it may have at any time to the laying of venue of any Proceedings brought in any such court, waives any claim that such Proceedings have been brought in an inconvenient forum and further waives the right to object, with respect to such Proceedings, that such court does not have any jurisdiction over such party[2] **Option 1.b: Non-exclusive jurisdiction clause** With respect to any dispute, claim, difference or controversy arising out of, relating to or having any connection with this Agreement, including any dispute as to its existence, validity, interpretation, performance, breach or termination or the consequences of its nullity and any dispute relating to any non-contractual obligations arising out of or in connection with it, each party irrevocably: i. Submits to the non-exclusive jurisdiction of the [* insert jurisdiction] courts; and ii. Waives any objection which it may have at any time to the laying of venue of any Proceedings brought in any such court, waives any claim that such Proceedings have been brought in an inconvenient forum and further waives the right to object, with respect to such Proceedings, that such court does not have any jurisdiction over such party; and iii. Agrees, to the extent permitted by applicable law, that the bringing of Proceedings in any one or more jurisdictions will not preclude the bringing of Proceedings in any other jurisdiction[2] **Option 2: Arbitration clause[3]** i. Any dispute, claim, difference or controversy arising out of, relating to or having any connection with this Agreement, including any dispute as to its existence, validity, interpretation, performance, breach or termination or the consequences of its nullity and any dispute relating to any non-contractual obligations arising out of or in connection with it (a "Dispute"), shall be referred to and finally resolved by arbitration ii. The arbitration shall be conducted in accordance with the Rules of [* insert Arbitration Body] (the "Rules"). Capitalized terms used in this Section which are not otherwise defined in this Agreement have the meaning given to them in the Rules iii. [Option 1: The arbitral tribunal shall consist of one arbitrator, who shall be appointed in accordance with the Rules.] [Option 2: The arbitral tribunal shall consist of three arbitrators. The members of the arbitral tribunal shall be appointed in accordance with the Rules] [Option 3: The arbitral tribunal shall consist of three arbitrators. The members of the arbitral tribunal shall be appointed in accordance with the Rules, save that the president of the arbitral tribunal shall be nominated by the two co-arbitrators. If no such nomination is made within the time limit set out in the Rules, the president shall be appointed in accordance with the Rules] iv. The seat, or legal place of arbitration, shall be [*insert seat] v. The language used in the arbitral proceedings shall be [* insert language][4] Parties may provide for a right to bring challenges to the arbitral award before the courts of the seat, under the law of the seat; yet it is recommended that that exclusively concern cases of failure of due process or public policy.

1. Enhanced recognition and enforcement of judgments according to the 2005 Hague Choice of Court Convention, to which 33 countries are States Party
2. ISDA Choice of court and governing law Guide
3. Benefits from the 1958 New York Convention which ensures the enforceability of arbitral awards in around 160 States
4. 2018 ISDA Arbitration Guide

C.III | Key general trading terms (7/7)

Topic	Proposal
Benchmark prices / source	In the long term, if benchmark prices are used for CCP credits, they should comply with IOSCO principles.
Tax compliance	The Seller will pay or cause to be paid all taxes imposed by any governmental authority on or with respect to the CCP credit or a CCP credit transaction arising prior to delivery. The Buyer will pay or cause to be paid all taxes on or with respect to the CCP credit or a CCP credit transaction at and after delivery (other than ad valorem, franchise or income taxes which are related to the sale of the CCP credit and are, therefore, the responsibility of the Seller). In the event the Seller is required by law or regulation to remit or pay taxes that are the Buyer's responsibility hereunder, the Buyer promptly will reimburse the Seller for such taxes. If the Buyer is required by law or regulation to remit or pay taxes that are the Seller's responsibility hereunder, the Buyer may deduct the amount of any such taxes from the sums due to the Seller under this Agreement. Nothing herein obligates or causes a party to pay or be liable to pay any taxes for which it is exempt under the law.[1]

1. 2010 ISDA US Emissions Allowance Transaction Annex to the Schedule to the ISDA Master Agreement

C.III | Example of how a future Core Carbon Contract could be traded

		Spot	Futures
Contract specifi-cations	**Contract volume**	[100] credits (CCC)	[100] credits (CCC)
	Minimum lot size	1 contract or a multiple thereof	1 contract or a multiple thereof
	Pricing	In [USD] [EUR] [XXX] per credit with two decimal digits after the point	In [USD] [EUR] [XXX] per credit with two decimal digits after the point
	Min price tick	0.01 [USD] [EUR] [XXX] per credit	0.01 [USD] [EUR] [XXX] per credit
	Min value per tick	1.00 (0.01 [USD] [EUR] [XXX] * 100 tCO2eq)	1.00 (0.01 [USD] [EUR] [XXX] * 100 tCO2eq)
	Max price fluctuation	There are no limits	There are no limits
	Trading hours	To be determined by the exchange	To be determined by the exchange
Delivery	**Available delivery periods**	Daily contract (‘CCC Spot’)	At minimum, December of the current year and the next three calendar years (‘CCC Dec Futures’) can be registered. The exact number of the tradable maturities is determined by the Exchange as announced from time to time
Expiration	**Expiration date**	Daily contract	The last Monday of the contract month (or penultimate Monday of the delivery month if the last Monday is a Non-Business Day or there is a Non-Business Day in the 4 days following the last Monday); the Exchange may deviate from this in individual cases
Fulfilment	**Fulfilment date**	On the same (T) or first (T+1) business day after the conclusion of the contract	On the second (T+2) business day after the last trading day
	Fulfilment	The contracts are physically settled by the transfer of the credits from the seller to the buyer arranged and guaranteed by the clearing house. The clearing house, as a CCP, interposes itself between the counterparties to the contracts traded, becoming the buyer to every seller and the seller to every buyer. Thereby, the clearing house eliminates the counterparty risk for trading participants on the markets, including financial and physical fulfilment (non-payment or non-delivery of emission credits in due time).	

Following up on issues outlined in its Phase I report, the Taskforce recommends that jurisdictional financial regulators put in place regulations to **avoid market abuse**, such as position limits and rules against cornering

B | Governance

C | Legal principles and contracts

D | Credit-level integrity

II | Input to the Credit-eligibility guidelines: analysis of current practices

D.II | Additional: proposed analysis to handover to the Governance body (1/6)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Additional Additional beyond GHG emission reductions or removals that would otherwise occur without revenue from credits Projects demonstrate a conservative baseline scenario and must be surplus to regulatory requirements. Jurisdictional programs demonstrate additional reductions below the reference level	**Test approach**	**Energy efficiency**	Project-specific (CDM tool)	Project-specific (CDM tool or module-specific) Limited exclusion criteria built into project-specific analysis	Project-specific (protocol)		N/A No energy efficiency		Standardized assessments reduce subjectivity and administrative burden, but are less precise in assessing additionality[1] Allowing offsets that do not meet quality undermines effectiveness of climate commitments[2]	**Should there be a positive list of eligible projects types?** **Should project-specific tests be supplemented by standardized negative lists?** (i.e., limits to issuing credits from certain regions where project type common practice or competitive, e.g., no renewables in non-LDCs?) **Project-specific additionality tests should be assessed by independent third parties.** **Positive lists should be evidenced by peer-reviewed and/or published sources.**
		Fuel switching	Project-specific (CDM tool)	Project-specific (CDM tool)	N/A No fuel switching					
		Renewable energy	Project-specific (CDM tool or module-specific) Exclude projects where country installed capacity for the energy source has reached >3.5% (indicating use at scale)	Project-specific (CDM tool). Exclude large- and small-scale grid connected renewable projects in all countries except LDCs. Renewables reaching cost-competitiveness, increasingly under regulation, technologies becoming common practice, & financial viability without carbon revenues.	N/A No renewable energy					
		Land management	Three options: A. Project-specific analysis (CDM tool) B. Positive list C. Activity penetration	Project-specific (CDM tool or module-specific) Limited exclusion criteria built into project-specific analysis	Project-specific (protocol) Negative list for Soil Enrichment Protocol for certain activities in certain regions (where common practice)	Depending on methodology, either 3 prong test, or regulatory surplus test and practice-based performance standard test	N/A No land management		As above. Higher risk of non-additionality for management practices relative to structural & vegetative practices. Consider limiting crediting to specified regions with lower risk of non additionality [3]	

CORSIA: If programs pre-define a **positive list** of automatically additional project types, their additionality needs to be supported by clear evidence.

Criteria for positive lists should be **publicly disclosed and conservative**.

Where not using a positive list, additionality should be **assessed by an accredited and independent third-party verification entity** and reviewed by the program.

1. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf
2. Ruseva, T. et al (2017). Additionality and permanence standards in California's Forest Offset Protocol: A review of project and program level implications. https://doi.org/10.1016/j.jenvman.2017.04.082
3. USDA-ERS (2014): 'Additionality in U.S. Agricultural Conservation and Regulatory Offset Programs' - https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2502846

D.II | Additional: proposed analysis to handover to the Governance body (2/6)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale: Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	Academic literature	Suggested question for the governance body expert panel
Additional Additional beyond GHG emission reductions or removals that would otherwise occur without revenue from credits Projects demonstrate a conservative baseline scenario and must be surplus to regulatory requirements. Jurisdictional programs demonstrate additional reductions below the reference level	**Test approach**	**Project-based REDD+**	N/A No REDD+	Project-specific	REDD+ not eligible			N/A – only jurisdictional	If programs pre-define a **positive list** of automatically additional project types, their additionality needs to be supported by clear evidence. Criteria for positive lists should be **publicly disclosed and conservative**. Where not using a positive list, additionality should be **assessed by an accredited and independent third-party verification entity** and reviewed by the program	Standardized assessments reduce subjectivity and administrative burden, but are less precise in assessing additionality[1] Examples of over-estimated baselines in project-based REDD+ in DRC[2]	**Should there be a positive list of eligible projects types?** **Should project-specific tests be supplemented by standardized negative lists?** (i.e., limits to issuing credits from certain regions where project type common practice or competitive, e.g., no renewables in non-LDCs?) **Project-specific additionality tests should be assessed by independent third parties.** **Positive lists should be evidenced by peer-reviewed and/or published sources.**
		Jurisdictional REDD+		Additionality assumed through baseline setting, so not assessed				Additionality assumed through baseline setting, so not assessed			
		IFM	Project-specific	Project-specific (CDM tool or VCS AFOLU Additionality Tool)	Project-specific		Project-specific	N/A No IFM			
		Afforestation / Re-forestation	Two options: A. Project-specific analysis (CDM A / R tool) B. Positive list	Project-specific	Positive list for Reforestation		CDM A / R additionality tool and one of two options: A. Three-prong test B. Performance standard approach	N/A No afforestation/ reforestation			

1. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf
2. Seyller et al. (2016): 'The 'Virtual Economy' of REDD+ Projects: Does Private Certification of REDD+ Projects Ensure Their Environmental Integrity?' - https://www.researchgate.net/publication/303634286_The_'Virtual_Economy'_of_REDD_Projects_Does_Private_Certification_of_REDD_Projects_Ensure_Their_Environmental_Integrity

D.II | Additional: proposed analysis to handover to the Governance body (3/6)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	
Additional Additional beyond GHG emission reductions or removals that would otherwise occur without revenue from credits Projects demonstrate a conservative baseline scenario and must be surplus to regulatory requirements. Jurisdictional programs demonstrate additional reductions below the reference level	**Regulatory additionality**	**Project-based REDD+**	N/A No REDD+	Barrier analysis	N/A REDD+ not eligible			N/A – only jurisdictional	Credits represent reductions/removals/sequestration that **exceeds any legally binding mandate** or that would otherwise occur in a conservative business-as-usual scenario. Programs should have procedures in place to **test/assess additionality** and that these give reasonable assurance of additionality	Generally clear case for regulatory additionality for avoided deforestation as weak forest protection in many tropical countries[1] Stronger additionality for jurisdictional schemes where evidence is provided of new policies or actions[1]	**Should nesting for project-based REDD+ credits be required where such programs are operational? Or should CCPs only include jurisdictional REDD+ credits?** **Should projects be required to take into account their country NDC when demonstrating regulatory additionality?** **Should all projects require a standardized test for regulatory additionality**
		Jurisdictional REDD+		Jurisdictional programs required to demonstrate enactment of policies and measures compared to jurisdictional FREL scenario				Additionality assumed through baseline setting, so no test or evidence of new laws required		
		IFM	Regulatory surplus test	Depending on methodology, regulatory surplus test or barrier analysis	Regulatory surplus test		Regulatory surplus test, common practice test and implementation barrier analysis	N/A No IFM		
		Afforestation / Re-forestation	If project-specific, barrier analysis If positive list, cannot be mandated by regulation (or demonstrate these are systematically not enforced)	Barrier analysis	Legal requirement test		Regulatory surplus test, common practice test and implementation barrier analysis	N/A No afforestation/reforestation		

1. Chagas, T.; Galt, H.; Lee, D.; Neeff, T. and Streck, C. (2020) A close look at the quality of REDD+ carbon credits.

D.II | Additional: proposed analysis to handover to the Governance body (4/6)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale							Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA		
Additional Additional beyond GHG emission reductions or removals that would otherwise occur without revenue from credits Projects demonstrate a conservative baseline scenario and must be surplus to regulatory requirements. Jurisdictional programs demonstrate additional reductions below the reference level	**Regulatory additionality**	**Energy efficiency**	Barrier analysis	Depending on methodology, either barrier analysis (part of CDM tool) or regulatory surplus test (part of module-specific).	Legal requirement test		N/A No energy efficiency		Credits represent reductions/removals/sequestration that **exceeds any legally binding mandate** or that would otherwise occur in a conservative business-as-usual scenario. Programs should have procedures in place to **test/assess additionality** and that these give reasonable assurance of additionality	Evidence of Cursory assessment for CDM projects older than 2006[4]	**Should projects be required to take into account their country NDC to demonstrate regulatory additionality?** **Should all projects require a standardized test for regulatory additionality?**
		Fuel switching	Barrier analysis	Barrier analysis	N/A No fuel switching					Barrier analysis is uncertain [1] [2]	
		Renewable energy	For waste to energy, required to compare with EU regulations	Regulatory additionality to be demonstrated when renewing crediting period.	N/A No renewable energy					Credit activities not additional if implemented due to policies and regulations [2]	
		Land management	Depends on choice: • if CDM tool, barrier analysis • If positive list, cannot be a regulatory requirement (or if it is, demonstrate it is systematically not enforced) • If penetration %, not assessed	Depending on methodology, either barriers analysis (part of CDM tool) or regulatory surplus test (part of module-specific).	Legal requirement test		Regulatory surplus test	N/A No land management		Additionality context-specific (e.g., low-till/no-till increasingly common in much of US).[3] [4]	

1. Spalding-Fecher et al. (2012): 'Assessing the impact of the Clean Development Mechanism' - http://www.cdmpolicydialogue.org/research/1030_impact.pdf
2. Cames et al. (2016): 'How additional is the Clean Development Mechanism' - https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf#page=129
3. CAR (2020): 'Soil Enrichment Protocol' - https://www.climateactionreserve.org/wp-content/uploads/2020/10/Soil-Enrichment-Protocol-V1.0.pdf#page=20
4. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf
5. Michaelowa, A.; Umamaheswaran, K. (2006). Additionality and Sustainable Development Issues regarding CDM projects in Energy Efficiency sector. https://www.econstor.eu/bitstream/10419/19374/1/346.pdf

D.II | Additional: proposed analysis to handover to the Governance body (5/6)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale							Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA		
Additional Additional beyond GHG emission reductions or removals that would otherwise occur without revenue from credits Projects demonstrate a conservative baseline scenario and must be surplus to regulatory requirements. Jurisdictional programs demonstrate additional reductions below the reference level	**Financial additionality**	**Energy efficiency**	Investment analysis	Depending on methodology, either investment analysis (part of CDM tool) or performance benchmark test (part of module-specific). High-efficiency firewood cookstoves must have no other revenue streams	No provisions under the Mexico Boiler Efficiency Protocol Performance test for boilers in Mexico: 82% if >100MW; 80.5% if 9.8 to 100MW; Boiler less than 35 yrs old		N/A No energy efficiency		Credits represent reductions/removals/sequestration that exceeds any legally binding mandate **or that would otherwise occur in a conservative business-as-usual scenario**. Programs should have procedures in place to **test/assess additionality** and that these give reasonable assurance of additionality	Carbon revenues small relative to energy cost savings. [1] [2] [3] Such CDM projects increased IRR by only 5-8% on average. [3]	**Should all projects require a test for financial additionality? Should this test be standardized or include specific approaches?** (e.g., investment analysis) Can **performance standard / common-practice tests** substitute financial additionality tests? Or not? **Should energy efficiency projects in developed countries be allowed to issue CCP credits?** (Rationale: industries in developed countries are expected to reduce own emissions without credit revenue) **Should there be a cut-off of for renewables issued past a certain date (e.g. 2010-2018) except in LDCs? How often should the decision be revised for LDCs?** **Should land management credits be limited to programmatic approaches?** (i.e., aggregating multiple landowners under a single project).
		Fuel switching	Investment analysis and barrier analysis (both required if no 'first-of-its-kind' activity)	Investment analysis (if fails certain conditions)	N/A No fuel switching					Carbon revenues small, indecisive part of total project revenues. [1] [2] [3] Such CDM projects increased IRR by only 4% on average.[3] Barrier analysis uncertain.[1] [3] Investment analysis reduces risk of non-additionality.[2]	
		Renewable energy	Exclude projects where installed capacity for the energy source has reached at least 3.5% in the country (indicating use at scale)	Exclude large- and small-scale grid connected renewable projects in all countries except LDCs Other than in LDCs, renewables considered to be reaching cost competitiveness, prospects of regulation on renewable energy, the prevalence of the technology (common practice), and financial viability without carbon revenues.	N/A No renewable energy					Cost effectiveness for renewables achieved in 2010 for onshore wind, 2013 for solar PVs and 2018 for Concentrated solar power[4]	
		Land management	Investment analysis (if CDM tool chosen), otherwise no assessment	Depending on methodology, either investment analysis (part of CDM tool) or performance benchmark test (part of module-specific).	No financial test. Credit / payment stacking allowed under set conditions.		Practice-based performance standard test or common practice and implementation barriers tests	N/A No land management		Carbon revenues too small to play a decisive role. Safer for programmatic approaches.[2] [5] Additionality context-specific (e.g., low-till/no-till increasingly common in much of US). [2] [6]	

1. Spalding-Fecher et al. (2012): 'Assessing the impact of the Clean Development Mechanism' - http://www.cdmpolicydialogue.org/research/1030_impact.pdf
2. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf#page=50
3. Cames et al. (2016): 'How additional is the Clean Development Mechanism' - https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf#page=129
4. IRENA (2020): Https://www.irena.org/newsroom/articles/2020/Jun/How-Falling-Costs-Make-Renewables-a-Cost-effective-Investment
5. USDA-ERS (2014): 'Additionality in U.S. Agricultural Conservation and Regulatory Offset Programs' - https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2502846
6. CAR (2020): 'Soil Enrichment Protocol' - https://www.climateactionreserve.org/wp-content/uploads/2020/10/Soil-Enrichment-Protocol-V1.0.pdf#page=20

D.II | Additional: proposed analysis to handover to the Governance body (6/6)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale: Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	Academic literature	Suggested question for the governance body expert panel
Additional Additional beyond GHG emission reductions or removals that would otherwise occur without revenue from credits Projects demonstrate a conservative baseline scenario and must be surplus to regulatory requirements. Jurisdictional programs demonstrate additional reductions below the reference level	**Financial additionality**	**Project-based REDD+**	N/A No REDD+	Barrier analysis Investment analysis Common practice analysis	N/A REDD+ not eligible			N/A – only jurisdictional	Credits represent reductions/removals/sequestration that exceeds any legally binding mandate or **that would otherwise occur in a conservative business-as-usual scenario**. Programs should have procedures in place to **test/assess additionality** and that these give reasonable assurance of additionality	Multi-step approach, with financial additionality via investment analysis at the core[1] Examples of over-estimated baselines in project-based REDD+ in DRC[2] Generally clear case for additionality for avoided deforestation as weak forest protection, absent budgets & strong alternative use incentives in many tropical countries[1]	**Should nesting for project-based REDD+ credits be required where such programs are operational? Or should CCPs only include jurisdictional REDD+ credits?** Should **projects be required to take into account their country NDC** to demonstrate regulatory additionality? **Should credit / payment stacking be allowed?** (i.e., where one activity receives additional credits for other ecosystem benefits it generates).
		Jurisdiction-al REDD+		Additionality assumed through baseline setting, so no test.				Additionality assumed through baseline setting, so no test.			
		IFM	Performance-standard test	Depending on methodology, performance-standard test or investment analysis (in certain conditions) and common practice test	Performance-standard test Enhancement payments considered – discretion for CAR to decide if project still eligible		Regulatory surplus test, common practice test and implementation barrier analysis	N/A No IFM		It is difficult to determine if carbon revenues are decisive in changing baseline activities given timber & land-use values often larger than carbon revenues [3]	
		Afforestation / Reforestation	If project-specific, barrier analysis and investment analysis. If positive list, cannot have commercial use intentions and must be in LDCs	Barrier analysis Investment analysis Common practice analysis Credit / payment stacking not considered	Reforestation automatically passes performance-standard test if on land without forest cover for past 5 years or recently lost live cover to 50% due to natural disturbance		Regulatory surplus test, common practice test and implementation barrier analysis	N/A No afforestation /reforestation		Higher risk of non-additionality than avoided deforestation, as more financially attractive activity[1]	

1. Chagas, T.; Galt, H.; Lee, D.; Neeff, T. and Streck, C. (2020) A close look at the quality of REDD+ carbon credits.
2. Seyller et al. (2016)
3. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf#page=50

D.II | Permanent: proposed analysis to handover to the Governance body (1/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 Year	American Carbon Registry	ART		
Permanent Only issued for GHG reductions or removals that are permanent or, if they have a reversal risk, must have requirements for a multi-decadal term and a comprehensive risk mitigation and compensation mechanism in place, with a means to replace any units lost	**Obligations for long-term permanence**	**Project-based REDD+**	N/A No REDD+	Standardized across AFOLU projects: Minimum 30 years project longevity 100-year risk assessment timeframe. Zero AFOLU non-permanence risk score (i.e., no contribution to buffer pool) where legally binding agreement covering at least 100 years	REDD+ not eligible			N/A – only jurisdictional	Only permanent removals have environmental integrity [1] All carbon sequestration projects hold reversal risks [2] Restoration and conservation may benefit in long term from carbon markets compensation and rewards transfer to land holders or farmers [3] Permanence may be addressed by zoning. Land use regulation, or economic insturments[4]	**Should permanence for nature-based storage be set at a fixed amount of time** (e.g. 30, 40, 100 years), should it **vary by methodology type** or should it be left up to the Standards? **Should the volume of credits that a project can issue be pro-rated based on a standardized permanence length** (e.g. a developer that accepts 40 years of liability may issue only 40% of the credits than a developer who accepts 100 years of liability for the same CO2eq captured)
		Jurisdictional REDD+						**Not specified further**		
		IFM	Risk assessment on a 'long-term ' basis		Legally-binding for 100 years after issuance (optional for Mexico; ton-year accounting)		40-year minimum project term and contribution to buffer pool for unintentional reversals	N/A No IFM		
		Afforestation / Re-forestation	Same as IFM. Long-term CO2 fixation depends on envisioned silvicultural method (selective harvesting or rotation forestry)		Ton-year accounting relative to 100-year permanence		40-year minimum project term and contribution to buffer pool for unintentional reversals	N/A No afforestation/ reforestation		

CORSIA
Credits must represent permanent emissions reductions / avoidance / sequestration

1. Espejo et al. (2020): 'Comparing the Environmental Integrity of Emission Reductions from REDD Programs with Renewable Energy Projects' - https://www.mdpi.com/1999-4907/11/12/1360/htm
2. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf
3. Knoke. T. et al. (2014). Afforestation or intense pasturing improve the ecological and economic value of abandoned tropical farmlands. https://dx.doi.org/10.1038%2Fncomms6612
4. Sedjo, R., Sohngen, B. (2007). Carbon credits for avoided deforestation. https://www.researchgate.net/profile/Roger-Sedjo/publication/24122958_Carbon_Credits_for_Avoided_Deforestation/links/02e7e53457d8e4c1b9000000/Carbon-Credits-for-Avoided-Deforestation.pdf

D.II | Permanent: proposed analysis to handover to the Governance body (2/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Permanent Only issued for GHG reductions or removals that are permanent or, if they have a reversal risk, must have requirements for a multi-decadal term and a comprehensive risk mitigation and compensation mechanism in place, with a means to replace any units lost	**Risk assessment and mitigation**	**Project-based REDD+**	REDD+ not eligible	Assess internal, external and natural risks. Reduce % deduction as mitigation incentive. No crediting if risk above threshold (>60% for total risk, but also specified for sub-categories)	REDD+ not eligible			N/A – only jurisdictional	Risk assessment undertaken for potential causes, relative scale and likelihood of reversals. If there is reversal risk, either (a) credits are ineligible, or (b) mitigation measures are in place to monitor, mitigate and compensate material incidence of non-permanence	Multiple risk pathways and higher risk than energy-related projects[1]	**Should the governance body mandate a reversal compensation mechanism** (e.g. buffers) or should Standards be left to choose how they compensate for reversals? **What type of risks must the risk assessment cover?** **Should risk mitigation measures be incentivized via lower % contributions to buffer pools?** **Should projects require a minimum risk assumption** (e.g. 15%, 20%) **in order to issue CCP credits? Should projects not be allowed to issue CCPs if their estimated risk is above a maximum threshold?** (e.g. 50%, 60%)
		Jurisdictional REDD+		Assess political and governance, program design and strategy, carbon rights and use of revenues, funding, and natural risks. No crediting if risk above 60% threshold				Default 25% buffer contribution without assessment – reduce to 5% if all set mitigation adopted		Jurisdictional programs have higher non-permanence risk due to larger area, but lower due to success in one area compensating a reversal in another[2]	
		IFM	Assess natural disturbance, political, project management, financial, and market risks. Requires further risk mitigation if score > 6 / 27	Same as project-based REDD+	Assess financial, management, social, and natural risks		Assess management / governance and natural risks. Certain mitigation is prerequisite.	N/A No IFM		Multiple risk pathways and higher risk than energy-related projects[2]	
		Afforestation/ Reforestation	Same as IFM	Same as for project-based REDD+. The Canadian Forest Carbon Offset Methodology requires a Risk Mitigation and Contingency Plan to address at least natural and human-induced risks.	Same as IFM		Assess management / governance and natural risks. Certain mitigation is prerequisite.	N/A No afforestation/reforestation		Multiple risk pathways and higher risk than energy-related projects[2]	

1. Espejo et al. (2020): 'Comparing the Environmental Integrity of Emission Reductions from REDD Programs with Renewable Energy Projects' - https://www.mdpi.com/1999-4907/11/12/1360/htm
2. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits

D.II | Permanent: proposed analysis to handover to the Governance body (3/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Permanent Only issued for GHG reductions or removals that are permanent or, if they have a reversal risk, must have requirements for a multi-decadal term and a comprehensive risk mitigation and compensation mechanism in place, with a means to replace any units lost	**Reversal compensation**	**Project-based REDD+**	REDD+ not eligible	10-60% to buffer pool. No distinction in intentional versus unintentional reversals.	REDD+ not eligible			N/A – only jurisdictional	Require full compensation of material reversals	Rare reversals to date, so glut of credits in buffer. Buffers have so far been successful in compensating reversals[1]	**What should be the required amount of compensation retired from the buffer pool in case of reversal?** (e.g., 100%) **Should there be different requirements for avoidable versus unavoidable reversals?** (e.g., buffer pool retirement only for unavoidable reversals, otherwise requiring direct compensation by project participant)
		Jurisdictional REDD+		10-60% to buffer pool. No distinction in intentional versus unintentional reversals.				5-25% to buffer pool (5% more for 5 years after reversal). No distinction in intentional versus unintentional reversals.		Success of buffers for jurisdictional programs still uncertain[1]	
		IFM	20% to buffer pool. Program liable for other GS credits (of any type) if intentional reversal	Same as project-based REDD+	15-20% to buffer pool. Program required to compensate avoidable reversals.		13-33% to buffer pool. Program liable for other ACR credits (any type/vintage) if intentional reversal.	N/A No IFM		Rare reversals to date, so glut of credits in buffer. Buffers have so far been successful in compensating reversals [1]	
		Afforestation/ Reforestation	Same as IFM	10-60% to buffer pool. No distinction in intentional versus unintentional reversals.	Contribution to buffer pool. Program required to compensate avoidable reversals.		13-33% to buffer pool. Program liable for other ACR credits (any type/vintage) if intentional reversal.	N/A No afforestation/ reforestation			

1. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits

D.II | Permanent: proposed analysis to handover to the Governance body (4/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Permanent Only issued for GHG reductions or removals that are permanent or, if they have a reversal risk, must have requirements for a multi-decadal term and a comprehensive risk mitigation and compensation mechanism in place, with a means to replace any units lost	**Notification of loss event**	**Project-based REDD+**	REDD+ not eligible	Notify within 30 days and submit a report within 2 years.	REDD+ not eligible			N/A – only jurisdictional		**What is the appropriate time limit to notify reversals?**
		Jurisdictional REDD+		Notify within 30 days and submit a report within 2 years.				Not specified		
		IFM	Notify within 30 days and submit a report within 6 months.	Same as project-based REDD+	Avoidable: notify within 30 days and submit verified estimate within 1 year Unavoidable: notify within 6 months and submit verified estimate within 2 years		Notify within 10 days and submit a report within 6 months	N/A No IFM		
		Afforestation /Re-forestation	Same as IFM	Notify within 30 days and submit a report within 2 years.	Same as IFM		Notify within 10 days and submit a report within 6 months	N/A No afforestation/ reforestation		

Require notification for reversals within specified number of days

D.II | Permanent: proposed analysis to handover to the Governance body (5/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Permanent Only issued for GHG reductions or removals that are permanent or, if they have a reversal risk, must have requirements for a multi-decadal term and a comprehensive risk mitigation and compensation mechanism in place, with a means to replace any units lost	**Safeguards after crediting period**	**Project-based REDD+**	REDD+ not eligible	Zero buffer contribution if 100-year legally binding agreement	REDD+ not eligible			N/A – only jurisdictional	Credits must represent permanent emissions reductions / avoidance / sequestration	Difficult for standards to enforce permanence after crediting period [1] Countries may choose to leave standards and their safeguards [1]	**How long should monitoring, buffer pool, or a reversal insurance mechanism continue to be in place after the date of credit issuance / the crediting period?**
		Jurisdictional REDD+		Not specified further				Accumulated buffer credits retired			
		IFM	Accumulated buffer credits retired	Same as project-based REDD+	Legally-binding compensation for 100 years after issuance		Accumulated buffer credits retired	N/A No IFM			
		Afforestation /Re-forestation	Same as IFM	Same as for project-based REDD+. The Canadian Forest Carbon Offset Methodology for projects in British Colombia requires a Risk Mitigation and Contingency Plan for 100 years permanence.	Accumulated buffer credits retired		Accumulated buffer credits retired	N/A No afforestation/ reforestation			

1. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits

D.II | Leakage accounted for and minimized: proposed analysis to handover to the Governance body (1/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Leakage accounted for and minimized Assessed, mitigated, and estimated considering any potential increase in emissions outside of the boundary, including taking appropriate deductions	**Leakage assessment method**	**Project-based REDD+**	REDD+ not eligible	Required. Checking changes in activity for deforestation agents, or via leakage belts. Where illegal logging included in baseline, use IFM discount factors for domestic market leakage. International leakage not considered.	REDD+ not eligible			N/A Only jurisdictional	Kyoto Protocol set precedent not to consider international leakage, even though it remains a risk[1]	**What dimensions should the method for leakage assessment require?** (e.g., monitoring via leakage belts or indirect calculations based on scientific peer-reviewed articles)? **Should there be a required reference area setting-method for leakage or should this be left up to Standards / developers?**
		Jurisdictional REDD+		Required for projects nested into a jurisdictional FREL. Direct monitoring or indirect calculations. Leakage to wetlands considered. Sources of international leakage identified for national projects.				States both activity shifting and market leakage considered if subnational project. Requires compliance with Cancun Safeguard G		
		IFM	Required.	Required: activity shifting considered via production in other lands owned market leakage assessment differs based on methodology (e.g., ratio of merchantable biomass to total biomass, or via VCS Default Discount Factors)	Required (market leakage) Compares baseline and project carbon harvested in trees. Leakage if project harvest below baseline harvest.		Required. Compares baseline and project wood product production levels. Leakage if project decreases wood product production by >5% relative to baseline.	N/A No IFM	Lower risk of shifting market activity for IFM and reduced impact logging relative to halting harvest altogether[2] [3]	
		BECCS	No BECCS methodology type yet						CO_2 plume location (e.g. seismic imaging) & pressure build up measurement at injection or monitoring wells[4]	

System must have measures in place to assess and mitigate incidences of material leakage.

Require national level implementation where project-level leakage.

1. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits
2. Schwarze et al. (2002): 'Understanding and managing leakage in forest-based greenhouse-gas-mitigation projects' - https://pubmed.ncbi.nlm.nih.gov/12460492/
3. Warman and Nelson (2015): 'Forest conservation, wood production intensification and leakage: an Australian case' - https://www.cabdirect.org/cabdirect/abstract/20163115217
4. National Academy of Sciences, Engineering and Medicine (2019). 'Negative Emissions Technologies and Reliable Sequestration: A Research Agenda'. https://doi.org/10.17226/25259

D.II | Leakage accounted for and minimized: proposed analysis to handover to the Governance body (2/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Leakage accounted for & minimized Assessed, mitigated, and estimated considering any potential increase in emissions outside of the boundary, including taking appropriate deductions	**Risk mitigation**	**Project-based REDD+**	REDD+ not eligible	Reduction in leakage deduction incentivizes risk mitigation	REDD+ not eligible			N/A Only jurisdictional	Program design key to mitigating leakage risks (e.g., provide alternative livelihood options) [1] [2] [3]	**Should leakage mitigation measures be a requirement for crediting?** **Which specific leakage risk mitigation measures should be required for CCP credits?** (e.g., ensuring alternative livelihood options for affected communities)
		Jurisdictional REDD+		Develop mitigation measures (including in adjacent jurisdictions)				Mitigation encouraged during program design and for measures to be reported		
		IFM	Project developers must implement mitigation measures to reduce risk.	Same as project-based REDD+	Not specified		Not specified	No IFM		
		BECCS	No BECCS methodology type yet						Leakage may be addressed through regulation (e.g., land use laws). Leakage quantification may help to assess effectiveness[4]	

CORSIA: System must have measures in place to assess and mitigate incidences of material leakage. Require national level implementation where project-level leakage.

1. Warman and Nelson (2015): 'Forest conservation, wood production intensification and leakage: an Australian case' - https://www.cabdirect.org/cabdirect/abstract/20163115217
2. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits
3. Schwarze et al. (2002): 'Understanding and managing leakage in forest-based greenhouse-gas-mitigation projects' - https://pubmed.ncbi.nlm.nih.gov/12460492/
4. EC. (2014). 'Environmental implications of increased reliance of the EU on biomass from the SouthEast US'. https://op.europa.eu/en/publication-detail/-/publication/8005fb30-81e9-4399-9b19-01af823fa42d

D.II | Leakage accounted for and minimized: proposed analysis to handover to the Governance body (3/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Leakage accounted for & minimized Assessed, mitigated, and estimated considering any potential increase in emissions outside of the boundary, including taking appropriate deductions	**Monitoring**	**Project-based REDD+**	REDD+ not eligible	Required: via monitoring activity changes or leakage belt	REDD+ not eligible			N/A – only jurisdictional	Procedures required for monitoring	Leakage should be monitored and quantified[1]	**Should leakage monitoring be required across all project types?** **What should be the required cadence for leakage monitoring?** (e.g., leakage monitoring at each verification)
		Jurisdiction-al REDD+		Not required for national. Via leakage belt where no monitoring in adjacent jurisdiction				Not required			
		IFM	Required	Required at each verification	Monitoring and quantification (both annually and cumulatively over project life). In Mexico, also monitoring leakage belt outside project area		Monitoring at each verification. If >5% threshold, need to demonstrate no deviation from historical trends	No IFM			
		BECCS	No BECCS methodology type yet							Limited governments capabilities to monitor land use & resources extraction[2] Need to strengthen governance and use improved techniques to enhance monitoring of carbon stocks.[3] Monitoring of feed-stock type used and collection method to detect leakage[4]	

1. Schwarze et al. (2002): 'Understanding and managing leakage in forest-based greenhouse-gas-mitigation projects' - https://pubmed.ncbi.nlm.nih.gov/12460492/
2. Stoy, P et al. (2018). 'Opportunities and Trade-Offs among BECCS and the Food, Water, Energy, Biodiversity and Social Systems Nexus at Regional Scales". https://doi.org/10.1093/biosci/bix145
3. CCC. (2018). 'Biomass in a low-carbon economy' https://www.theccc.org.uk/wp-content/uploads/2018/11/Biomass-in-a-low-carbon-economy-CCC-2018.pdf
4. Brack, D. King, R. (2020). 'Net Zero and Beyond: What role for bioenergy and carbon capture and storage?' https://www.chathamhouse.org/sites/default/files/CHHJ7830-BECCS-RP-200127-WEB.pdf

D.II | Leakage accounted for and minimized: proposed analysis to handover to the Governance body (4/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Leakage accounted for & minimized Assessed, mitigated, and estimated considering any potential increase in emissions outside of the boundary, including taking appropriate deductions	**Leakage deduction**	**Project-based REDD+**	REDD+ not eligible	Required: deduct based on leakage assessment IFM discount factor for market leakage: 10-70%	REDD+ not eligible			N/A – only jurisdictional	Deduct identified leakage from emissions reductions	Leakage should be deducted from emissions reductions[1]	**In addition to a priori deductions, should additional deductions be required after leakage events?** **What other compensation mechanisms for leakage should be in place? (e.g., financial payments)**
		Jurisdiction-al REDD+		Required: deduction based on risk assessment: • Global commodity (default) leakage: 3% to 9% • Domestic market leakage: 15% • Deforestation to degradation leakage: 4% • Total: Up to 28%				Required if subnational; deductions based on % of national forest area included in accounting. 0-20% deduction (max deduction if <25% national forest covered).			
		IFM	Required deduction during first year of crediting	Deduction based on leakage assessment. Amount varies depending on assessment used (differs by methodology)	Required: deduction based on difference of baseline and project wood product production, taking into account long-term harvesting trends (deductions can be recouped in later years, but no 'positive' leakage')		Choice of deduction based on : A. Default market leakage discount factors (0-40% depending on % fall in production) or B. Directly accounting for leakage (at verifier's discretion to accept method used)	N/A No IFM			
		BECCS	No BECCS methodology type yet							N/A	

1. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits

D.II | Baselines: proposed analysis to handover to the Government body (1/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Baselines Credited only beyond performance against a defensible, conservative baseline estimate of emissions that assumes the BAU trajectory in the absence of the activity. Baselines should be recalculated on a regular, conservative timeframe.	**Baseline setting approach**	**Project-based REDD+**	REDD+ not eligible	CDM combined baseline and additionality assessment tool	REDD+ not eligible			N/A – only jurisdictional	Credits based on a realistic, defensible, credible, and conservative baseline. Baseline is the level of emissions assuming a conservative 'business as usual' emissions trajectory. Baselines and underlying assumptions must be publicly disclosed	Complex modeling approaches can be difficult for auditors to assess[3] Examples of over-estimated baselines in project-based REDD+ in DRC[4]	**Should standard baseline setting methods be a requirement?** **Should developers be required to use baselines drawn up by third-parties?** Should they only be required to use conservative baselines with downward-curving emissions? **Should the third party set baselines requirement also apply to jurisdictional programs?** **If set by developers, should baselines be reviewed by third party experts?** **Should baselines be accepted only if previously subjected to public scrutiny or consultation?** **Should developers be required to host all baseline-setting data and assumptions in public logs**? **How and when should REDD+ projects that nest into jurisdictional programs adjust their baselines?**
		Jurisdictional REDD+		Use UNFCCC submissions if available. If not, historical average or historical trends				Historical average			
		IFM	Use CDM's additionality tool	Historical or common practice baseline scenario	Historical annual average	NPV harvest maximizing scenario		N/A No IFM			
		Energy efficiency	Required, must define baseline and project scenarios. Demonstrate SDG impact under project scenario. Suppressed demand baseline only by small scale projects	Required. Baseline scenario is continued use of non-renewable fuel	Standardized baseline emissions, fuels and electricity consumption, boiler efficiency, losses	N/A No energy efficiency				Contingent to variables and assumptions used, and intended use[5], should be defined in detail, and avoid any contradictions with additionality tests[6]	
		Fuel switching	N/A No fuel switching	Use CDM Combined Tool to identify baseline and additionality tool	N/A No fuel switching					Upstream emissions need to be taken into account [9]	
		Land management	Three possible approaches for baseline quantification	Depending on methodology, CDM or VCS A/R tool, continuation of historical practices, or yield-goal calculation	Standardized baselines with standard emission factors per zone. Baseline scenario is conversion to crop cultivation	Required baseline crop management with update every 5 year for duration of project		N/A No Land management		Differences in land-management practices between farm tenancies help explain variations on soil organic carbon[7]	
		Afforestation/ Reforestation	Estimating the 'tree' and 'non-tree' biomass present in the eligible planting area just prior to the planting start	Depending on methodology, CDM combined tool CDM ARR tool or methodology-specific steps	Sum of carbon in carbon pools at start date using intensive inventory quantification method	Document project lands were not cleared of trees during the 5 years prior to start date. Validate within 3 years of start date		N/A No afforestation /reforestation		Use of historical C stocks changes, carbon pools changes within project boundary, and changes from most likely use[8]	

1. Herold, Martin & Angelsen, Arild & Verchot, Louis & Wijaya, Arief & Ainembabazi, John. (2012). A stepwise framework for developing REDD+ reference levels.
2. Mertz et al (2018). Uncertainty in establishing forest reference levels and predicting future forest-based carbon stocks for REDD+, Journal of Land Use Science, 13:1-2, 1-15, DOI: 10.1080/1747423X.2017.1410242
3. Chagas, T.; Galt, H.; Lee, D.; Neeff, T. and Streck, C. (2020) A close look at the quality of REDD+ carbon credits.
4. Seyller et al. (2016)
5. Jung, H.G.; Lee, B. (2013). Study of the assessment baseline of carbon dioxide emissions based on the analysis of building energy efficiency rating system. https://doi.org/10.12813/kieae.2013.13.4.011
6. Müller-Pelzer, F. Michaelowa, A. (2005). Lessons from the submission and approval process of energy-efficiency CDM baseline and monitoring methodologies. https://www.econstor.eu/bitstream/10419/48237/1/663927129.pdf
7. Bell, M.J., Worrall, F. (2009). Estimating a region's soil organic carbon baseline: The undervalued role of land management. https://doi.org/10.1016/j.geoderma.2009.05.020
8. Michaelowa, A. Rawat, VRS. (2007). CDM Afforestation and reforestation baseline methodologies: AN analysis of submission and approval process. https://www.econstor.eu/bitstream/10419/48186/1/663971373.pdf
9. Cames et al. (2016): 'How additional is the Clean Development Mechanism' - https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf

D.II | Baselines: proposed analysis to handover to the Government body (2/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Baselines Credited only beyond performance against a defensible, conservative baseline estimate of emissions that assumes the BAU trajectory in the absence of the activity. Baselines should be recalculated on a regular, conservative timeframe.	**Baseline data**	**Project-based REDD+**	REDD+ not eligible	Not specified	REDD+ not eligible			N/A – only jurisdictional	Reference levels are sensitive to the choice of the reference period [2]	**Should historical, high resolution data become a requirement for baseline setting where this is based on historic trends?** **Should a minimum number of data points be required for baseline setting?**
		Jurisdictional REDD+		Past 8-12 years				Past 10 years		
		IFM	Not specified	At least 5 years of historical harvest data required for historical baseline scenario	Past 6 years	N/A No energy efficiency		N/A No IFM		
		Energy efficiency	Activity data	Activity data e.g. energy consumption, building codes, maintenance practices	Fuels and electricity consumption, boiler efficiency, heat losses. Calibrated meters.	N/A No fuel switching			Fuel or electricity consumption, operation time, or power. Data that covers all aspects of baseline [5]	
		Fuel switching	N/A No fuel switching	Fuels consumption, alternative fuel use, net calorific values	Soil organic carbon, nitrogen per acre per year, burning, irrigation, electricity use, grazing.				Electrification as determinant of fuel use and switch[6]	
		Land management	Choice of baseline setting approach based on availability of activity data	Fertilizer use, biomass, soil carbon, powering equipment, woody perennials. For grass-land fire/grazing adjustment, conditions of past 10 yrs	Must use CALCBOSK database/application. Establishes field sample plots and inputs data to database	Tillage practices, cropping sequence, timing of planting and harvesting, irrigation, nutrients, etc.		N/A No Land management	Surrogate environ-mental variables serve as proxies to estimate organic carbon in soils[7]	
		Afforestation/ Reforestation	Scientifically based project-specific, regional or national default values of 'tree' and 'non-tree' biomass for each vegetation type	Number of trees, area, carbon stock estimates in absence of project	Not specified	Number of trees, area, carbon stock estimates in absence of project		N/A No afforestation /reforestation	Satellite, aerial and ground reference data; ground-based surveys, participatory rural appraisal [8]	

CORSIA: Credits based on a realistic, defensible, credible, and conservative baseline.

Baseline is the level of emissions assuming a conservative 'business as usual' emissions trajectory.

Baselines and underlying assumptions must be publicly disclosed

1. Herold, Martin & Angelsen, Arild & Verchot, Louis & Wijaya, Arief & Ainembabazi, John. (2012). A stepwise framework for developing REDD+ reference levels.
2. Mertz et al (2018). Uncertainty in establishing forest reference levels and predicting future forest-based carbon stocks for REDD+, Journal of Land Use Science, 13:1-2, 1-15, DOI: 10.1080/1747423X.2017.1410242
3. Chagas, T.; Galt, H.; Lee, D.; Neeff, T. and Streck, C. (2020) A close look at the quality of REDD+ carbon credits.
4. Seyller et al. (2016)
5. Müller-Pelzer, F. Michaelowa, A. (2005). Lessons from the submission and approval process of energy-efficiency CDM baseline and monitoring methodologies. https://www.econstor.eu/bitstream/10419/48237/1/663927129.pdf
6. Heltberg, R. (2004). Fuel switching: evidence from eight developing countries. https://doi.org/10.1016/j.eneco.2004.04.018
7. Viscarra, R. et al (2014). Baseline map of organic carbon in Australian soil to support national carbon accounting and monitoring under climate change. https://doi.org/10.1111/gcb.12569
8. Michaelowa, A. Rawat, VRS. (2007). CDM Afforestation and reforestation baseline methodologies: AN analysis of submission and approval process. https://www.econstor.eu/bitstream/10419/48186/1/663971373.pdf

D.II | Baselines: proposed analysis to handover to the Government body (3/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	
Baselines Credited only beyond performance against a defensible, conservative baseline estimate of emissions that assumes the BAU trajectory in the absence of the activity. Baselines should be recalculated on a regular, conservative timeframe.	**Revision frequency**	**Project-based REDD+**	REDD+ not eligible	Every 10 years	REDD+ not eligible			N/A – only jurisdictional	Procedures in place for baseline revision in response to changing baseline conditions that were not expected at time of registration		**How frequently should baselines be updated?** **Should specific events or data and methodologies improvements trigger baseline updates?** **Should baselines include adjustments for specific circumstances?**
		Jurisdictional REDD+		Every 10 years				Every 5 years			
		IFM	Not specified	Every 10 years	Not specified		Not specified	N/A No IFM			
		Energy efficiency	Re-define baseline scenario for Design Certification Renewal (after the first 5 years), for every certification cycle. Project Developer must check if the original baseline scenario is still applicable	↑ Reassess baseline at renewal of crediting period unless demonstrating that baseline scenario is still valid. Such assessment must include evaluation of impact of new policies and circumstances ↓	Parameters measured every verification cycle, with fuel consumption according to invoicing frequency. Nothing on baseline revision		N/A No energy efficiency			Monitoring frequency must be specified according to baseline methodology[1]	
		Fuel switching	N/A No fuel switching		N/A No fuel switching					Upstream emissions may either increase or decrease [3]	
		Land management	Update baseline every 5 years after verification for project renewal, until the end of crediting period	Periodic reassessment to capture changes in drivers	During verification prior to credits issuance		↑ Update every 5 years. Revise and validate baseline assessment if project plan changes. Re-evaluate baseline to renew crediting period. ↓	N/A No Land management			
		Afforestation/ Reforestation	No baseline monitoring	Every 10 years	Inventories updated annually, but baseline held steady based on initial inventory for 30-year crediting period			N/A No afforestation /reforestation			

1. Müller-Pelzer, F. Michaelowa, A. (2005). Lessons from the submission and approval process of energy-efficiency CDM baseline and monitoring methodologies. https://www.econstor.eu/bitstream/10419/48237/1/663927129.pdf
2. Michaelowa, A. Rawat, VRS. (2007). CDM Afforestation and reforestation baseline methodologies: AN analysis of submission and approval process. https://www.econstor.eu/bitstream/10419/48186/1/663971373.pdf
3. Cames et al. (2016): 'How additional is the Clean Development Mechanism' - https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf

D.II | Baselines: proposed analysis to handover to the Government body (4/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Baselines Credited only beyond performance against a defensible, conservative baseline estimate of emissions that assumes the BAU trajectory in the absence of the activity. Baselines should be recalculated on a regular, conservative timeframe.	**Adjustments**	**Project-based REDD+**	REDD+ not eligible	No	REDD+ not eligible			N/A – only jurisdictional	Credits based on a realistic, defensible, credible, and conservative baseline. Baseline is the level of emissions assuming a conservative 'business as usual' emissions trajectory. Baselines and underlying assumptions must be publicly disclosed	Total credited emissions avoided range by different orders of magnitude depending upon baseline rules[1]	**How frequently should baselines be updated?** **Should specific events or data and methodologies improvements trigger baseline updates?** **Should baselines include adjustments for specific circumstances?**
		Jurisdictional REDD+		Yes				No			
		IFM	Yes	Yes	Yes		Yes	N/A No IFM			
		Energy efficiency	Baseline scenario must be re-assessed if the project has not been implemented as described in the registered project documentation	Required when project characteristics change during monitoring period (e.g. size, operating conditions). Baseline scenario must be reassessed if no longer valid for renewing crediting period	No provisions on update		N/A No energy efficiency			Monitoring of data that covers all aspects of the baseline methodology[2]	
		Fuel switching	N/A No fuel switching		N/A No fuel switching						
		Land management	No	Yes	No provisions on update		No	N/A No Land management			
		Afforestation / Re-forestation	No baseline monitoring	Yes	No		No	N/A No Afforestation/ Reforestation			

1. Griscom. B. et al (2009). Sensitivity of amounts and distribution of tropical forest carbon credits depending on baseline rules. https://doi.org/10.1016/j.envsci.2009.07.008
2. Müller-Pelzer, F. Michaelowa, A. (2005). Lessons from the submission and approval process of energy-efficiency CDM baseline and monitoring methodologies. https://www.econstor.eu/bitstream/10419/48237/1/663927129.pdf

D.II | Do no net harm: proposed analysis to handover to the Governance body (1/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Do no net harm The independent standard must have requirements to ensure that all projects and programs consider related environmental and social risks and take actions to prevent and mitigate associated harm	**Impact assessment**	**Project-based REDD+**	REDD+ not eligible	Risk to local stakeholders only	REDD+ not eligible			N/A – only jurisdictional	Safeguards used to address, enforce and manage environmental and social risks. Publicly disclose which institutions, processes, and procedures are used to implement, monitor, and enforce safeguards to identify, assess and manage environmental and social risks	Account for social and environmental impacts/leakage outside of the project area[1] Early REDD+ interventions may negatively impact human welfare, and positively support human rights[2]	**What are the required dimensions of a social and environmental impact assessment?** (e.g. human welfare, community benefits, biodiversity, profit-sharing)
		Jurisdictional REDD+		Not required				Not required			
		IFM	Required	Required	Not required		Develop and disclose impact assessment to ensure compliance with environmental and community safeguards best practices	No IFM			
		Energy efficiency	Required; Demonstrate contribution to sustainable development and identify positive impacts in at least 3 SDGs. Option to use SDG Tool. If project not implemented as described in registered project documentation, re-assess SDG impacts	Identify and mitigate potential negative environmental and socioeconomic impacts. Local stakeholder consultation prior to validation. Projects subject to 30 days public consultation period. Identify natural and human-induced risks. Ongoing consultation during project lifetime	Register activities that attest material compliance with environmental and social regulations. Harms directly associated with activity and resulting in regulatory non-compliance shall be disclosed and leads to no issuance or cancellation of credits.		N/A No energy efficiency				
		Fuel switching	N/A No fuel switching		N/A No fuel switching					Continued use of fossil fuels may slow transition to net zero [3]	
		Land management	Required. Demonstrate contribution to sustainable development and identify positive impacts in at least 3 SDGs. Option to use SDG Tool. If project not implemented as described in registered project documentation, re-assess SDG impacts		Attest compliance with legal requirements. Additional criteria may be included		Develop and disclose impact assessment to ensure compliance with environmental and community safeguards best practices	N/A No Land management			
		Afforestation/ Re-forestation		Similar requirements but exempted of local consultation if CCB validation or verification	Social safeguard includes a Cost-Benefit Analysis tool to estimate local environmental and economic benefits and their distribution			N/A No Afforestation/ Reforestation		Afforestation provides ecosystems services, flooding protection and other cobenefits that should be assessed [4]	

1. Carley Fuller, Stefania Ondei, Barry W. Brook, Jessie C. Buettel, First, do no harm: A systematic review of deforestation spillovers from protected areas, Global Ecology and Conservation, Volume 18, 2019
2. Pamela Jagger, Pushpendra Rana, Using publicly available social and spatial data to evaluate progress on REDD+ social safeguards in Indonesia, Environmental Science & Policy, Volume 76, 2017, Pages 59-69.
3. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf#page=50
4. Dittrich, R. et al. A cost-benefit analysis of afforestation as a climate change adaptation measure to reduce flood risk. J. of Flood Risk Management, 2019, 12. https://onlinelibrary.wiley.com/doi/epdf/10.1111/jfr3.12482

D.II | Do no net harm: proposed analysis to handover to the Governance body (2/4)

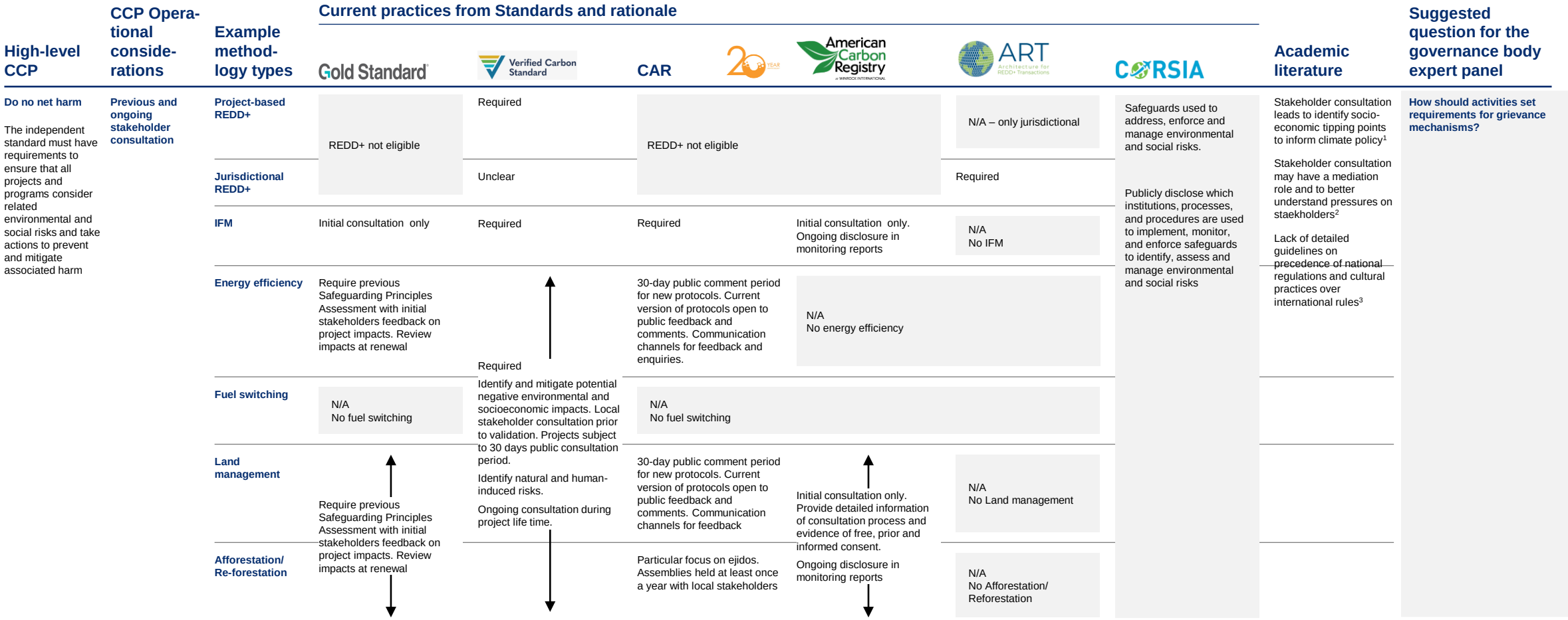
PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	
Do no net harm The independent standard must have requirements to ensure that all projects and programs consider related environmental and social risks and take actions to prevent and mitigate associated harm	**Safeguards**	**Project-based REDD+**	REDD+ not eligible	Conformance to VCS requirements Optional conformance to CCB requirements	REDD+ not eligible			N/A – only jurisdictional	Safeguards used to address, enforce and manage environmental and social risks. Should not violate local, state/provincial, national or international regulations or obligations	Limited ability to operationalize some safeguards using existing data sources[2] Address biodiversity safeguards as early as possible[1]	**What are the safeguards that CCP credits should adhere to** (e.g. UNFCCC REDD+ safeguards) **What disclosure requirements should be put in place?**
		Jurisdictional REDD+		Conformance UNFCCC REDD+ safeguards				Conformance indicators related to pre-determined Cancun Safeguards			
		IFM	Conformance to GS nine safeguarding principles and requirements	Conformance to VCS requirements Optional conformance to CCB requirements	Social and environmental safeguards (e.g., 95% native species goal) to consider in project design and implementation		Environmental and community impacts should be net positive. Disclose positive contributions and negative impacts and measures to compensate the latter	No IFM			
		Energy efficiency	Conformance to GS nine safeguarding principles and requirements	Identify and mitigate potential negative environmental and socioeconomic impacts. Local stakeholder consultation prior to validation. Projects subject to 30 days public consultation period. Identify natural and human-induced risks. Ongoing consultation during project lifetime	Environmental and social safeguards based on regulatory compliance. Additional requirements optional for individual protocols, including reporting on harm.		N/A No energy efficiency				
		Fuel switching	N/A No fuel switching		N/A No fuel switching						
		Land management	Conformance to GS nine safeguarding principles and requirements		Principles of common agency, proximity, legal obligation		Same as IFM	N/A No Land management			
		Afforestation/ Re-forestation		Similar requirements but exempted of local consultation if CCB validation or verification	Social and environmental safeguards (e.g., 95% native species goal) to consider in project design and implementation			N/A No Afforestation/ Reforestation			

1. Carley Fuller, Stefania Ondei, Barry W. Brook, Jessie C. Buettel, First, do no harm: A systematic review of deforestation spillovers from protected areas, Global Ecology and Conservation, Volume 18, 2019
2. Pamela Jagger, Pushpendra Rana, Using publicly available social and spatial data to evaluate progress on REDD+ social safeguards in Indonesia, Environmental Science & Policy, Volume 76, 2017, Pages 59-69.

D.II | Do no net harm: proposed analysis to handover to the Governance body (3/4)

PRELIMINARY



1. Van Ginkel, K. (2018). Climate change induced socio-economic tipping points : review and stakeholder consultation for policy relevant research. https://iopscience.iop.org/article/10.1088/1748-9326/ab6395/meta
2. Talbot, D. Raineri, N. Daou, A. (2020). Implementation of sustainability management tools: the contribution of awareness, external pressures, and stakeholder consultation. https://onlinelibrary.wiley.com/doi/epdf/10.1002/csr.2033
3. Dong, Y. Olsen, K. (2017). Stakeholder participation in CDM and new climate mitigation mechanisms: China CDM case study. https://doi.org/10.1080/14693062.2015.1070257

D.II | Do no net harm: proposed analysis to handover to the Governance body (4/4)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Do no net harm The independent standard must have requirements to ensure that all projects and programs consider related environmental and social risks and take actions to prevent and mitigate associated harm	**Grievance mechanisms**	**Project-based REDD+**	REDD+ not eligible	Required	REDD+ not eligible			N/A – only jurisdictional	Publicly disclose which institutions, processes, and procedures are used to implement, monitor, and enforce safeguards to identify, assess and manage environmental and social risks	Subsistence emissions versus luxury emissions help distinguish allocation of emissions and costs of coping with social consequences of climate change[1]	**Should CCP credits require consultation processes in place for stakeholders** (e.g. local communities)**?** **Should an established process to track concerns arising from consultations be required?** **How should activities set requirements for grievance mechanisms?**
		Jurisdictional REDD+		Required				Required			
		IFM	Required	Required	N/A	Required to describe and disclose mechanism for ongoing communication with the community and grievance mechanisms. Disclose in monitoring reports any negative impacts and the appropriate mitigation measure.		N/A No IFM			
		Energy efficiency	Required Safeguarding Principles Assessment. Must seek stakeholders feedback on project impacts according to questionnaire.	Required Must develop grievance redress procedure to address disputes with local stakeholders, including with regard to benefit sharing. Consultation and communication in culturally appropriate manner. Avoid negative impacts of project implementation and mitigate unavoidable impacts.	Communication channels for general and stakeholders feedback and enquiries. Mechanism for dispute resolutions and facts-finding grievances review			N/A No energy efficiency			
		Fuel switching	N/A No fuel switching		N/A No fuel switching						
		Land management	Required Safeguarding Principles Assessment. Must seek stakeholders feedback on project impacts according to questionnaire. Ongoing monitoring of concerns and feedback		Communication channels for general and stakeholder enquires and feedback. Mechanism for dispute resolutions and facts-finding grievances review	Required to describe and disclose mechanism for ongoing communication with the community and grievance mechanisms. Disclose in monitoring reports any negative impacts and the appropriate mitigation measure.		N/A No Land management			
		Afforestation/ Re-forestation			Assemblies held at least once a year with grievances a mandatory element of the agenda			N/A No Afforestation/ Reforestation			

1. Shue, H. (1993) Subsistence and Luxury Emissions. https://doi.org/10.1111/j.1467-9930.1993.tb00093.x

D.II | MRV: proposed analysis to handover to the Governance body (1/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Monitored, reported and verified Calculated in a conservative and transparent manner, based on accurate measurements and quantification methods. Must be verified by an accredited, third-party entity. MRV should be conducted at specified intervals.	**Conservative measurements**	**Project-based REDD+**	REDD+ not eligible	Discounting if more than 20-30% uncertainty in parameters at 90-95% confidence interval	REDD+ not eligible			N/A – only jurisdictional	Forestry has generally higher uncertainty in measurement than other sectors.[1] [2] Especially high signal-to-noise ratio for jurisdictional programs[1] Aggregate uncertainties in emissions reduction estimates should be quantified, requiring a discount in crediting above a set threshold[1]	**Aggregate uncertainties in estimated emissions reductions should be quantified** (e.g., using Monte Carlo analysis). **Discount emissions reductions or suspend crediting if above an uncertainty threshold.** **Should there be a standardized way of accounting for uncertainty and conservativeness for each project type?**
		Jurisdictional REDD+		75% accuracy in estimating forest vs. non-forest classification, but no assessment of aggregate uncertainty in emissions reductions				Discount if baseline emissions uncertainty > 15%, but no assessment of aggregate uncertainty in emissions reductions		
		IFM	Uncertainty not quantified but assumed as known – uncertainty deduction if above target precision of 20% of mean at 90% confidence level: 50% deduction if 20-30%, 75% if 30-40% and 100% if 40-50%	Depending on methodology, minimum sampling intensity requirements, or uncertainty quantified and deduction if above 10% of mean emissions reduction at 90% confidence level	Deductions if sampling error of mean at 90% confidence level > Target Sampling Error, which differs depending on # of activity areas. 100% deduction or no crediting if error >20%		Quantifies baseline and with-project uncertainty – sampling error with mean of emissions reduction must be < ±10% at 90% confidence interval	N/A No IFM		
		Energy efficiency	Depends on methodology: uniform adjustment, conservative assumptions built in, or meet 90/30 precision level for emission factors	Depending on methodology, standard uncertainty deduction, or conservative assumptions in quantifying emission reductions, or need to justify choice of data	CH4/N20 excluded from boiler combustion emissions; verifiers check baseline and project fuel emission factors are conservative		N/A No energy efficiency		Baseline uncertainty for supply-side projects (e.g., difficult to assess true waste heat use in counterfactual).[2]	
		Land management	Same as for IFM	Depending on methodology, deduction if uncertainty over threshold, or conservative assumptions in quantifying emission reductions	Depending on methodology, exclude certain emissions, use conservative default factors, verifier assessment, or uncertainty and deduction quantified		Estimate uncertainty for baseline and project carbon pool. Deductions if >10% of mean at 90% confidence level. Specific models used for quantification.	N/A No Land management	Inherently harder to quantify GHG reductions in biological systems. MRV more difficult due to diverse and uncontrolled implementation [2]	
		Afforestation/ Re-forestation	Maximum error of 20% at 90% confidence level – additional difference is deducted, where applicable	Calculate uncertainty, maximum. Adjustment if more than 10% of emissions reductions at 95% confidence level	Same as for IFM. Must use intensive inventory methodology.		Precision ±10% of mean at 90% confidence level. Follow UN CDM 'Guidelines on conservative choice and application of default data in estimation of the net anthropogenic GHG removals by sinks	N/A No Afforestation/ Reforestation	Forestry has generally higher uncertainty than other sectors [2]	

Emissions units are based on accurate measurements and valid quantification methods/protocols

Procedures are in place to issue emissions units against realistic, defensible, and conservative baseline estimations of emissions

CORSIA

1. Chagas et al. (2020): 'A close look at the quality of REDD+ carbon credits' - https://www.climatefocus.com/publications/close-look-quality-redd-carbon-credits
2. Broekhoff et al. (2019): 'Securing Climate Benefit: A Guide to Using Carbon Offsets' - https://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf#page=50

D.II | MRV: proposed analysis to handover to the Governance body (2/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	
Monitored, reported and verified Calculated in a conservative and transparent manner, based on accurate measurements and quantification methods. Must be verified by an accredited, third-party entity. MRV should be conducted at specified intervals.	**VVB accreditation**	**Across project types**	Recognizes ISO 14065 accreditation, UNFCC-CDM Accreditation, and ASI-FSC Certification Body Status. Further requirements outlined in 'Validation / Verification Body Requirements'	Complete 'Verra Validation/Verification Body Application Form', sign agreement with Verra, and be accredited under VCS-approved GHG program or ISO14065:2013	Only VVBs accredited in American National Standards Institute program or Mexican Accreditation Body eligible, with Reserve no longer accrediting. Accreditation under ISO 14065 and approved by Reserve.		Must meet competence requirements of ISO 14065:2013 and ISO 14066:2011. For voluntary projects approval by ACR and be IAF* member-accredited, for compliance California Air Resources Board accredited.	Accredited for ISO 14065 with ART in scope by IAF* member with MOU with ART. Apply and complete ART's 'Attestation of Validation and Verification body' to prove technical capabilities, & complete training. Ongoing monitoring of VVB performance by both accreditation body and ART separately	There are standards and procedures in place for validator and verifier accreditation	Independent, third party validation and verification of emissions reductions is seen as critical for a successful carbon crediting program, ensuring carbon credit quality.[1] [2] Well-designed infrastructure with clear and predictable rules and decision making encourage investment in carbon credits. [1]	**Should VVBs only be eligible if accredited under set accreditation programs?** (e.g., ISO 14065) **Should the technical capabilities of VVBs be specified?** **Should the performance of VVBs be monitored by standards?** (e.g., assess consistency across verifications) **Should standards require specific professionals to participate in verifications for specific project types?** (e.g., crop advisor professional for land management projects)
		Project-based REDD+	REDD+ not eligible	No additional requirements	REDD+ not eligible			N/A – only jurisdictional		
		Jurisdictional REDD+		Expert panel of 1 local and 2 international experts. Proponent suggests candidate for local and VVB. VCSA approves experts based on set criteria				N/A – only jurisdictional REDD+ (see above)		
		IFM	No additional requirements	Models must be peer reviewed in a process involving experts in modelling and biology/forestry/ecology	All reports referencing carbon stocks must have oversight of a professional forester		Models must be peer reviewed in a process involving experts in modelling and biology/forestry/ecology	N/A No IFM		
		Energy efficiency	For energy efficiency in shipping, verification of regression models required by statistician	No additional requirements	Requires ISO 14064-3 accreditation and training by Reserve for this project type		N/A No energy efficiency			
		Land management	No additional requirements	Professional crop advisor certification required in some methodologies	VVBs to required to include professional agronomist/ credited crop advisor		No additional requirements	N/A No Land management		
		Afforestation / Reforestation	No additional requirements	No additional requirements	All reports referencing carbon stocks must have oversight of a professional forester		No additional requirements	N/A No Afforestation/ Reforestation		

* International Accreditation Forum

1. PMR (2015): 'Overview of Carbon Offset Programs' - http://documents1.worldbank.org/curated/en/891711468309365201/pdf/939450WP0201500ers0385391B00PUBLIC0.pdf
2. Merger and Pistorius (2011): 'Effectiveness and legitimacy of forest carbon standards in the OTC voluntary carbon market' - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3169451/

D.II | MRV: proposed analysis to handover to the Governance body (3/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	
Monitored, reported and verified Calculated in a conservative and transparent manner, based on accurate measurements and quantification methods. Must be verified by an accredited, third-party entity. MRV should be conducted at specified intervals.	**VVB accreditation**	**Across project types**	SustainCERT reviews VVB's verification (with expert / comments) and confirms certification decisions. See Validation/Verification Body Requirements document. Site audit required at each verification	Risk-based process in conformance with ISO 14064-3-3:2006 and ISO 14065:2013, VCS Program rules, and VCS Validation and Verification Manual. Site audit required at each verification	Must follow Verification Program Manual and relevant Protocol, conform to ISO 14064-3:2006 and submit Verification Report, List of Findings, and Verification Statement to Reserve.		Risk-based process carried out in conformance with ISO 14064-3-3:2006 and ISO 14065:2013, and 'ACR Validation and Verification Standard'. Full site visit for verification at an interval no longer than 5 years	Secretariat reviews/approves Monitoring Report for verification. VVB verification in line with TREES and 'TREES Validation and Verification Standard'. Rotate VVBs every 3 verifications. Verification reviewed by Secretariat and submitted to ART Board for approval	There are standards and procedures in place for validator and verifier accreditation	Trained and equipped members of local communities may collect as accurate data as estimates by expert studies. This may also benefit projects by involving local communities[1] Independent, third party validation and verification of emissions reductions is seen as critical for a successful carbon crediting program, ensuring carbon credit quality.[2] Well-designed infrastructure with clear and predictable rules and decision making encourage investment in carbon credits. [2]	**Should all verification require on-site visits?** **Should there be a specified number and form of steps that verifiers must undertake?** (e.g., reviewing quantification, principles, etc.) **At what intervals should projects be required to rotate VVBs?** (e.g., 3 verifications, 5 verifications) **Should it be a requirement for standards to review VVBs' reports?**
		Project-based REDD+	REDD+ not eligible	AFOLU projects also require verification of leakage and reversal risks, and may have lower intervals for VVB rotation	REDD+ not eligible			N/A – only jurisdictional		
		Jurisdictional REDD+		1) jurisdictional element document to VCSA, 2) public stakeholder consultation, 3) VVB assessment, 4) JNR expert panel peer review (if updating baseline), 5) VCSA review				N/A – only jurisdictional REDD+ (see above)		
		IFM	Verification of leakage and reversal risks	Same as project-based REDD+	Site visits required for all verifications for IFM		No additional requirements	N/A No IFM		
		Energy efficiency	For energy efficiency in shipping, external expert assesses new regression model, and then approved by Gold Standard	No additional requirements	No additional requirements		N/A No energy efficiency			
		Land management	Verification of leakage and reversal risks	No additional requirements	Site visit required		Site visits not required	N/A No Land management		
		Afforestation / Reforestation	All potential leakage accounted for in Year 1, so not monitored	Same as project-based REDD+	Site visits required for all verifications for Reforestation		No additional requirements	N/A No Afforestation/ Reforestation		

1. ForestCompass.org case studies
2. Merger and Pistorius (2011): 'Effectiveness and legitimacy of forest carbon standards in the OTC voluntary carbon market' - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3169451/

D.II | MRV: proposed analysis to handover to the Governance body (4/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART		
Monitored, reported and verified Calculated in a conservative and transparent manner, based on accurate measurements and quantification methods. Must be verified by an accredited, third-party entity. MRV should be conducted at specified intervals.	**Monitoring/ Reporting**	**Across project types**	Monitoring Report (based on template): project description, project implementation, monitoring system applied, data/parameters, SDG impact calculations, safeguards, and stakeholder inputs/legal disputes	Monitoring Report (based on template) to include project details, implementation status, safeguards (no net harm, local stakeholder consultation), data and parameters, monitoring plan (responsibilities, sampling, quality control), and quantifications	Monitoring plan (data collection and field check frequencies, record keeping plan, quality assurance, and responsibilities). Monitor quantifications, implementation of monitoring plan, and that project components operate consistently with manufacturer's recommendations.		Monitoring Report (based on template) to include project info and implementation, regulatory compliance, environmental/community impacts, parameters monitored/modeled, monitoring plan (responsibilities, quality assurance, sampling methods), quantifications, and required attestations	Monitoring Report (based on template) to include project info, eligibility criteria, ownership of emission reductions, Cancun safeguards, reversals, leakage, how double counting was avoided, Monitoring plan implementation (quantification, responsibilities, quality control/assurance), etc.	There are standards and procedures in place for validator and verifier accreditation	New technology may reduce monitoring costs over time.	**Should the content of monitoring reports and monitoring plans be standardized across standards?** **Should the monitoring of certain safeguards be required for all project types?** (e.g., no net harm, local stakeholder input, uncertainties)
		Project-based REDD+	REDD+ not eligible	Methodology-specific list of parameters to be monitored (including data source and frequency of monitoring)	REDD+ not eligible			N/A – only jurisdictional		Satellite data may be used for standardized and cost-effective land cover monitoring[1]. Use of satellited data allows for improved monitoring of deforestations rates, fires occurrence and frequency[2],
		Jurisdictional REDD+		Monitoring Report (JNR template) with usual info plus safeguards information system and accuracy/uncertainty assessment				N/A – only jurisdictional REDD+ (see above)		
		IFM	LUF projects also monitor leakage and reversals	Same as project-based REDD+	Monitor environmental safeguards (native species composition)		Apply standard operating and quality control procedures for forest inventory	N/A No IFM		
		Energy efficiency	For shipping, data collection to conform with ISO/DIS 19030-2; Usage surveys & field tests for cookstove projects	Same as project-based REDD+	Monitoring plan to include at least data collection frequency, record keeping plan, individuals' roles, etc.		N/A No energy efficiency			
		Land management	Provide information on distribution of revenues and GIS vector layers (e.g., water bodies, protected areas, indigenous people)	Same as project-based REDD+	Methodology-specific: e.g., aggregate and field monitoring for rice cultivation, option for cooperative monitoring for nitrogen management		Apply approved sampling standards. Strongly encouraged to maintain area-based parameters in per Hectare and per field units	N/A No Land management		
		Afforestation / Reforestation	Same as land management. Leakage and conversion factors for CO2 fixation not monitored	Same as project-based REDD+	Monitor environmental safeguards (native species composition)		Require Regeneration Monitoring Areas outside project area for baseline assumption	N/A No Afforestation/ Reforestation		Unique conditions means lengthier MRV compared to other non-forest projects[3]

1. Gebhardt, S. et al. (2016). MAD-MEX: Automatic Wall-to-Wall Land Cover Monitoring for the Mexican REDD MRV Program Using All Landsat Data.. Remoter Sensing, Vol 6, Issue 5. https://www.mdpi.com/2072-4292/6/5/3923
2. Aragao, L. Shimabukuro, Y. (2010). The Incidence of Fire in Amazonian Forest with Implications for REDD. Science Vol 328, Issue 5983. https://science.sciencemag.org/content/328/5983/1275
3. Merger and Pistorius (2011): 'Effectiveness and legitimacy of forest carbon standards in the OTC voluntary carbon market' - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3169451/

D.II | MRV: proposed analysis to handover to the Governance body (5/5)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale						Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA	
Monitored, reported and verified Calculated in a conservative and transparent manner, based on accurate measurements and quantification methods. Must be verified by an accredited, third-party entity. MRV should be conducted at specified intervals.	**MRV frequency**	**Project-based REDD+**	REDD+ not eligible	Monitor change in reference regions at least every 10 years. Follow Module M-REDD	REDD+ not eligible			N/A – only jurisdictional	Monitoring, measuring, and reporting of both activities and the resulting mitigation is conducted at specified intervals throughout the duration of the crediting period	**At what minimum interval should verification be required?** (e.g., annually, every 3 years, every 5 years)
		Jurisdictional REDD+		Monitoring and verification at least every five years				Monitoring Report required for years 1, 3, and 5 of crediting period, validation and verification on year 1, and verification in years 3 and 5		
		IFM	Verification at least every 5 years	Regional forest regrowth rates dictate monitoring timeframes or at least every 5 years	Annual monitoring reports. Verification intervals dependent on whether project is aggregated or non-aggregated		Plot data for biomass calculations cannot be older than 10 years	N/A No IFM		**Should there be a difference in the intervals required for submitting monitoring reports versus verification/validation reports?** (i.e., should every monitoring report feed into verification reports?)
		Energy efficiency	Methodology-specific: surveys annually and field tests every 2 years for cookstoves, daily monitoring of parameters for shipping	Methodology- and parameter-specific data collection frequency (continuous, hourly, monthly, annual)	Option to have 12- or 24-month verification period, but annual monitoring report		N/A No energy efficiency			
		Land management	Verification at least every 5 years, with first verification for AGR projects completed either within 2 years of start date or Project Design Certification	Methodology- and parameter-specific data collection frequency (annual, every 5 years)	Option to have 12- or 24-month verification period, but annual monitoring report		Verification at least every 5 years	N/A No Land management		
		Afforestation / Reforestation	Verification at least every 5 years	Baselines and carbon stock reassessed at least every 10 years.	12 months after each reporting period		Update Regeneration Monitoring Areas at least every 10 years; parameter-specific data collection frequency (every 5 years)	N/A No Afforestation/ Reforestation		

D.II | Only counted once: proposed analysis to handover to the Governance body (1/2)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale							Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART	CORSIA		
Only counted once A carbon credit is not issued or used more than once. Avoidance of double counting is a requirement under an accounting standard and methodology, and credits may be individually identified in a publicly accessible registry	**Preventive measures**	**All methodology types**	In order to avoid double counting the Project shall not be included in any other voluntary or compliance standards programme unless approved by Gold Standard (for example through dual certification). Also, if the Project Area overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature, the project shall demonstrate that there is no double counting of impacts at design and performance certification	Assign unique serial number to units and list on projects database. Units used in the context of the Paris Agreement or CORSIA must meet the requirements established by such mechanisms and programs. Project proponent must use units labels to demonstrate adherence to such requirements	Safeguards for avoidance of double counting: screening of protocols for development; determination of additionality and boundary definition in protocols, and review if project is listed in other registries. Assign unique serial number to units. The Reserve will adhere to any future requirements established by the United Nations Framework Convention on Climate Change (UNFCCC), ICAO, and any relevant emission reduction project's host country to prevent double counting.		To prevent double use: requires execution of ACR's legal Terms of Use (ToU) Agreement by authorized account representatives, clear proof of ownership upon registration, tracking of ownership of credits within the registry by serial number and account, and an attestation prior to each issuance of unique, uncontested ownership and legal rights to the emissions reductions as well as that no emissions reductions issued by and registered on ACR have been serialized, registered, retired or otherwise transacted on another registry and/or by another standard nor have they been transferred, retired or otherwise used or disposed of other than as duly recorded on the ACR registry. To prevent double claiming, ACR will require notification by the owner of the emissions reductions of the export of any emissions reductions for these purposes as well as a formal host country letter of assurance and authorization of the use of the emissions reductions by another Party, including for the CORSIA.	To prevent double use, TREES requires clear proof of ownership upon registration, tracking of ownership of credits within the registry by serial number and account, and an annual attestation of ownership and use. Double selling will be prohibited through rules in the legal Terms of Use agreement to be executed by all ART Registry account holders, which will expressly prohibit double use of credits and prohibit the transfer of ownership of credits off registry. To prevent double claiming of the ERs by the host country and another Party toward Paris Agreement NDC targets, TREES requires that host country issues a letter to explicitly authorize the use of the specific ERs by another Party and in that letter attest to report the transfer to the UNFCCC in the structured summary of its biennial transparency reports and make an accounting adjustment as required by the UNFCCC.	Programmes should provide information on how they address double counting, issuance and claiming in the context of evolving national and international regimes for carbon markets and emissions trading. In order to prevent double claiming, eligible programmes should require and demonstrate that host countries of emissions reduction activities agree to account for any offset units issued as a result of those activities such that double claiming does not occur between the airline and the host country of the emissions reduction activity.	Avoid double counting by requiring coordinating on units accounting, design of mechanisms that issue units, and consistent tracking and reporting of units[2] Obtain a letter of authorization and assurance from hosting country to ensure corresponding adjustments[1,5].	**Should all standards aiming to issue CCP credits adopt same practices for preventing double issuance, use or claim of carbon credits?** **Should all standards require a document (e.g. letter of authorization) from host countries as step towards avoidance of double counting, using, and claiming?**

1. PMR (2017). Establishing scaled-up crediting program baselines under the Paris Agreement: issues and options. https://openknowledge.worldbank.org/handle/10986/28785
2. Schneider, L. et al (2019). Double counting and the Paris Agreement rulebook. Science, Vol 366, Issue 6462. https://science.sciencemag.org/content/366/6462/180.summary
3. Schneider, L.; Kollmuss, A.; Lazarus, M. (2015). Addressing the risk of double counting emission reductions under the UNFCCC. Climatic Change, 131. https://doi.org/10.1007/s10584-015-1398-y
4. Foucherot, C. et al (2014). Contribution from I4CE on how to address double counting within voluntary projects in Annex B countries, . https://inis.iaea.org/search/search.aspx?orig_q=RN:47126979
5. ACR (2019) Guidelines on avoiding double counting for CORSIA. https://americancarbonregistry.org/carbon-accounting/guidance-tools-templates/guidelines-for-adc-with-corsia-june-2019.pdf

D.II | Only counted once: proposed analysis to handover to the Governance body (2/2)

PRELIMINARY

High-level CCP	CCP Operational considerations	Example methodology types	Current practices from Standards and rationale							Academic literature	Suggested question for the governance body expert panel
			Gold Standard	Verified Carbon Standard	CAR	20 YEAR	American Carbon Registry	ART Architecture for REDD+ Transactions	CORSIA		
Only counted once A carbon credit is not issued or used more than once. Avoidance of double counting is a requirement under an accounting standard and methodology, and credits may be individually identified in a publicly accessible registry	**Public listing of credit information**	**All methodology types**	The Key Project Information, draft Project Design Documentation and supporting documentation are made publicly available	Assign unique serial number to units and list on projects database. Units used in the context of the Paris Agreement or CORSIA must meet the requirements established by such mechanisms and programs. Project proponent must use units labels to demonstrate adherence to such requirements	Credits issuance and retirements are made public, as well as cancellations in other registries or programmes.		ACR will post publicly on the registry the national UNFCCC focal point letter of assurance and authorization of transfers / cancelations of emissions reductions towards a mitigation target / obligation. ACR will make public on the registry all retirements / cancelation of units toward a CORSIA offsetting obligation. In addition, ACR will report such information to ICAO and to host countries as required to confirm that the units are included in national emissions reporting to facilitate GHG accounting reconciliation via adjustments, as determined by the UNFCCC	Authorization letter will be posted publicly on the ART Registry. Credits cannot be transferred to another Party's registry account or retired on behalf of another Party until such authorization letter is delivered. When the transfer or retirement is affected, the specific reason for the transfer (between registry accounts) or retirement will be stated. In the case of a transfer between accounts, the Party reporting the use of the ER toward its NDC must retire the credits noting the reason for retirement for the public record. TREES requires that the host country issue a letter to explicitly authorize the use of the specific ERs by the transferee (buyer) and in that letter agree to report the transfer to the UNFCCC in the structured summary of its biennial transparency reports and to make an accounting adjustment as required by the UNFCCC. The letter will be posted publicly on the ART registry.	The programme should make publicly available any national government decisions related to accounting for units used in ICAO, including the contents of host country attestations and update information pertaining to host country attestation as often as necessary to avoid double-claiming	Corresponding adjustments ensure that no double claiming occurs when emissions reductions are transferred from one country to another1 Resolving double counting is critical for achieving the goals of the Paris Agreement2 International coordination is required to address double counting3 Development of voluntary offsetting projects may lead to double counting when a country has a mitigation target 4	**What credit-level information must be made public?** **Should it be consistent across all standards issuing CCP credits?** **Should credits registries include a CCP label or identifier?**

1. PMR (2017). Establishing scaled-up crediting program baselines under the Paris Agreement: issues and options. https://openknowledge.worldbank.org/handle/10986/28785
2. Schneider, L. et al (2019). Double counting and the Paris Agreement rulebook. Science, Vol 366, Issue 6462. https://science.sciencemag.org/content/366/6462/180.summary
3. Schneider, L.; Kollmuss, A.; Lazarus, M. (2015). Addressing the risk of double counting emission reductions under the UNFCCC. Climatic Change, 131. https://doi.org/10.1007/s10584-015-1398-y
4. Foucherot, C. et al (2014). Contribution from I4CE on how to address double counting within voluntary projects in Annex B countries, . https://inis.iaea.org/search/search.aspx?orig_q=RN:47126979
5. ACR (2019) Guidelines on avoiding double counting for CORSIA. https://americancarbonregistry.org/carbon-accounting/guidance-tools-templates/guidelines-for-adc-with-corsia-june-2019.pdf

D.II | Clean Development Mechanism (CDM)

Lessons from 15 years of operation

		⊕ Contributions to voluntary carbon markets	⊖ Challenges	Impacts
Standardized approach		Globally applicable mechanism with standardised methodologies for projects development	Registered activities concentrated in few sectors and technologies Limited number of countries proactively fostering CDM activity Projects hosting concentrated in few countries	Credits issuance concentrated in few categories or types Lack of further ambition in host countries (complacency from hosting CDM activities) Skewed preferences not related to integrity but with volumes and geography
Principles		Introduced and normalized the concepts of 'additionality' and 'baseline'	Lack of standardised baselines and technology benchmarks leading to fragmented approach (project-based) to baseline setting Lack of transparency on data sources and assumptions for baselines development in mitigation projects	Uncertainty on projects additionality and merit of credits Overall concerns on environmental integrity Documented cases of "gaming" the CDM without real nor additional reductions
Rules and requirements		Structured documentation setting norming and guiding projects development and approval (e.g. standard, methodology, procedure, guidelines, tool) Guidance tools for estimation or assessment (e.g. additionality, emission factor estimation, sustainable development,)	Adoption of CDM documentation at face-value, as accepted practice, with its shortcomings Limited requirements on public consultation, stakeholders engagement, and transparency	Inherited acceptance and extended use of CDM requirements and practices, including its shortcomings Concerns on baselines transparency Further fragmentation with standards and certifications for non-carbon related benefits or impacts
Process		Defined criteria and process for accreditation of organisations participating in the market Thematic experts participate in panels and working groups to inform decision making on approvals and accreditations	Lengthy review and approval process for methodologies and projects registration	Constrains for new entries into market. Participation limited to resourceful project developers
		Gold Standard®	Verified Carbon Standard	CLIMATE ACTION RESERVE
Current use of CDM	**Methodologies**	Uses 162 CDM methodologies + CDM transition framework	Accepts any CDM methodology	Two protocols informed by CDM methodologies
	Tools	Uses CDM Additionality tool	Uses CDM Additionality tool	Use CDM tool to calculate emission factor for electricity system

>2 Gt CO_2e

Avoided or reduced since 2006 through CDM
(based on CERs issuance)

Despite issuance, CDM has not transformed emissions trends

Many countries continue to increase their emissions despite hosting CDM projects

D.II | Additionality Comparison: VCS Methodology Requirements

Section 3.5 Additionality

Section 3.5.2: Methodologies shall use a project method, performance method and/or activity method to determine additionality.

Mandatory in TSVCM language

Project Method

Regulatory surplus

The project shall not be mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework.

AND

Implementation barriers (one or more)

1. **Investment barrier:** Project faces capital or investment return constraints that can be overcome by the additional revenues associated with the sale of GHG credits.
2. **Technological barriers**
3. **Institutional barriers:** Project faces financial (other than identified in investment barrier above), organizational, cultural or social barriers that the VCU revenue stream can help overcome.

AND

Common Practice (one)

1. **Common practice**: project type shall not be common practice in sector/region, compared with projects that have received no carbon finance.
2. **Barriers vs. existing projects:** Where it is common practice, the project proponent shall identify barriers faced compared with existing projects.

Demonstration that the project is not common practice shall be based on guidance provided in The **GHG Protocol for Project Accounting**, Chapter 7 (WRI-WBCSD).

OR

Performance Method

Regulatory surplus

As above

AND

Performance benchmark

The GHG emissions generated (or carbon sequestered) per unit of output, unit of input or sequestration metric by the project shall be below (or above, for sequestration) the prescribed performance benchmark metric or proxy for such metric (see Section 2.3.6 for specification of the metric). Proxy metrics or conditions may be specified where it can be demonstrated that they are strongly correlated with the performance benchmark metric and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine whether performance is achieved to a level at least equivalent to that of the performance benchmark metric

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OR

Activity method

Regulatory surplus

As above

AND

Positive list (one or more)

1. **Activity penetration:** the methodology shall demonstrate that the project activity has achieved a low level of penetration relative to its maximum adoption potential
2. **Not financially attractive and not common practice:** The methodology shall demonstrate that the project activity is less financially or economically attractive than the alternatives to the project activity [using CDM tool]
3. **No significant sources of revenue and not common practice:** The methodology shall demonstrate that the project activity does not have any significant sources of revenue other than revenue from the sale of GHG credits, as follows and not common practice

Source: https://verra.org/wp-content/uploads/2019/09/VCS_Methodology_Requirements_v4.0.pdf

D.II | Additionality comparison: Gold Standard Requirements

Principle 5 – Financial Additionality & Ongoing Financial Need

Principles Requirements

(a) FINANCIAL ADDITIONALITY

Using CDM additionality tool

New additionality tools: Proposals may be made for new Gold Standard additionality tools. Gold Standard reserves the right to require changes to proposed additionality tools, seek clarification, or reject proposed additionality tools if insufficient progress is made on requested changes. New approaches for additionality demonstration may also be submitted to Gold Standard for approval as part of a new SDG Impact Quantification Methodology.

(b) ONGOING FINANCIAL NEED

The project shall provide a qualitative narrative supported by an overview of project finances, that demonstrates how the finance derived Gold Standard Certification is material to the ongoing sustainability of the Project.

The narrative may include, but not limited to the following:

1. **Project income and costs**: Information highlighting the key categories and amounts or relative proportions (%) of project income and outgoings, including the relative proportion of certification related cost and revenue
2. **Use of financing:** Description on how finance derived Gold Standard Certification contributes to or is being used to sustain or enhance the project.
3. Where no revenue is realised from Gold Standard certification during a given period, this would be considered a FAR for the next Issuance.

Activity Requirements

FINANCIAL ADDITIONALITY

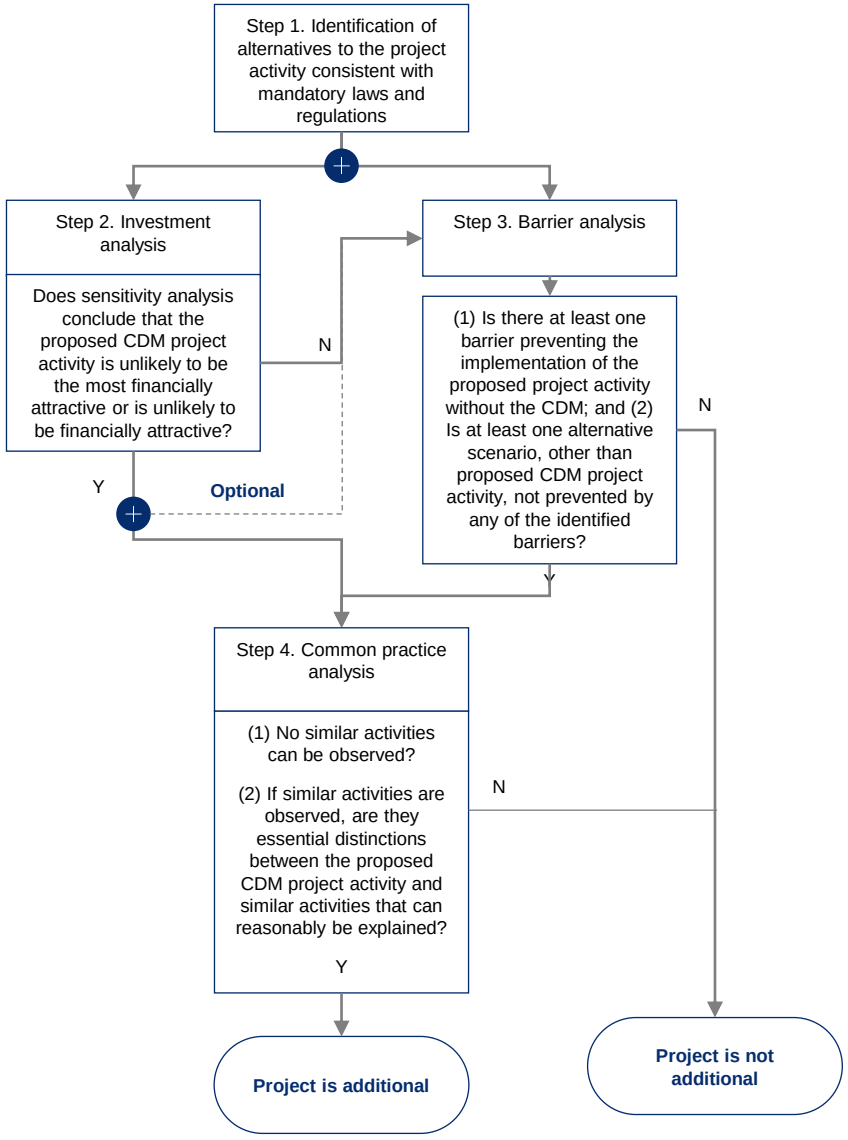
4.1.8 All projects seeking the issuance of Certified Impact Statements and/or Products shall demonstrate Financial Additionality in accordance with the Principles & Requirements and the applicable Product requirements.

4.1.9 Projects that meet any of the following criteria are considered as deemed additional and therefore are not required to prove Financial Additionality at the time of Design Certification:

(a) Positive list (Annex B of linked document) (b) Projects located in LDC, SIDS, LLDC4 (c) Microscale projects

Gold Standard offers Ad Hoc Financial Additionality assessment or the CDM tool. Analysis of the CDM tool follows

D.II | Additionality comparison: CDM Additionality tool



Mandatory in TSVCM language

A Optional: Investment analysis

i. Where no credit revenue, simple cost analysis: Demonstrate that there is at least one alternative which is less costly than the project activity.

Ii. Where credit revenue (one or more):

Capital return comparison against other investments with financial indicators, such as IRR, NPV, cost benefit ratio, or unit cost of service (e.g., levelized cost of electricity production in $/kWh or levelized cost of delivered heat in $/GJ) most suitable for the project type and decision-making context.

Capital return comparison against benchmarks

a) Government bond rates, increased by a suitable risk premium to reflect private investment (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), etc.

B Requirement: Barrier analysis (one or more)

Investment barriers: (Inter alia) (other than from investment analysis)

- Similar activities have only been implemented with **grants or other non-commercial finance terms**
- **No private capital is available** from domestic or international capital markets due to real or perceived risks associated with investment in the country)

Technological barriers:

- Lack of skilled and/or properly trained labor to operate and maintain the technology
- Lack of infrastructure for implementation and logistics for maintenance of the technology
- Risk of technological failure / no availability of required technology

Prevailing practice barriers:

- Project is the first of its kind

Requirement: Common practice analysis (qualitative)

Analyze other activities similar to the proposed project activity and evaluate whether **similar activities are widely observed and commonly carried out**

If similar activities exist, developer must point out "**essential distinctions**" (e.g. new barriers may have arisen)

Source: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf

D.II | References for current practices (1/2)

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4. Ecosystem Marketplace (2019): 'Shades of REDD+, Nesting: A Good or Bad Piece of Swiss Cheese?" - https://www.ecosystemmarketplace.com/articles/shades-of-reddnesting-a-good-or-bad-piece-of-swiss-cheese/
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7. Climate Action Reserve (2019): 'Forest Project Protocol V5.0' - https://www.climateactionreserve.org/wp-content/uploads/2019/11/Forest_V5.0_Summary.pdf
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D.II | References for current practices (2/2)

12. Verra (2013): ‘Jurisdictional and Nested REDD+ (JNR) Non-Permanence Risk Tool’ - https://verra.org/wp-content/uploads/2020/11/PREVIOUS-VERSION-JNR-Non-Permanence-Risk-Tool-v3.0.pdf
13. Verra (2019): ‘AFOLU Non-Permanence Risk Tool’ - https://verra.org/wp-content/uploads/2019/09/AFOLU_Non-Permanence_Risk-Tool_v4.0.pdf
14. Climate Action Reserve (2019): ‘Forest Project Protocol V5.0’ - https://www.climateactionreserve.org/wp-content/uploads/2019/11/Forest_V5.0_Summary.pdf
15. Gold Standard (2020): ‘Land Use and Forests Activity Requirements" - https://www.goldstandard.org/project-developers/standard-documents
16. Gold Standard (2017): "Land-Use and Forests Risks and Capacities Guideline" - https://www.goldstandard.org/project-developers/standard-documents
17. Gold Standard (2019): " Safeguarding Principles and Requirements" - https://www.goldstandard.org/project-developers/standard-documents
18. Gold Standard (2021): ‘Terms and Conditions’ - https://globalgoals.goldstandard.org/terms-conditions/
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D.II | References for the academic literature review

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