

Common Carbon Credit Data Model

Summary of Feedback on the Public Consultation and How this Feedback is Reflected in Version 2.0 of the Data Model

Executive Summary

Purpose of this document

This document summarises responses received to a public consultation on the Common Carbon Credit Data Model ('Data Model') Version 1.0, developed to support standardisation of key data fields for carbon credits across the carbon credit lifecycle. The report also sets out the steps taken in response to the feedback to support an updated [Version 2.0 of the Data Model](#) which has been made publicly available and will form the basis for piloting and implementation.

Under the South African G20 Presidency, the G20 Finance Track's Sustainable Finance Working Group (SFWG) identified *Unlocking the Financing Potential of Carbon Markets* as one of its three priorities for 2025, with a particular focus on improving carbon credit data standardisation. The Climate Data Steering Committee (CDSC) was invited to act as the SFWG's lead knowledge partner on this priority. The CDSC Secretariat has developed a Common Carbon Credit Data Model ('the Data Model') as a voluntary resource to facilitate data standardisation across the carbon credit life cycle with the aim of enhancing market integrity, building trust and helping Emerging Market and Developing Economies (EMDEs) attract cross-border climate finance.^{1,2}

The Data Model is intended to provide a *common foundation* for data standardisation across the different market participants in the carbon credit life cycle, and across different carbon credit market segments, for voluntary use.³ As such, it identifies *core*

¹ [SFWG Note on Agenda Priorities \(2025\)](#)

² The development of the Data Model has been guided by a set of high-level policy principles designed to ensure it helps deliver public good outcomes. These principles were developed and refined in discussion with the G20 SFWG and CDSC's PWG. The principles suggest that an effective data model for carbon markets should: (i) be delivered as a public good, (ii) consider the entire carbon credit life cycle, (iii) incorporate best practice from financial markets, (iv) employ accessible technology, (v) respect policymakers' sovereignty, and (vi) align with negotiated multilateral outcomes.

³ The Data Model provides guidance for data standardisation across all carbon credit market segments, i.e. credits used for voluntary purposes, credits used for CORSIA obligations, credits used in lieu of carbon pricing allowances when deemed appropriate by relevant policymakers, and those transacted through Article 6.

data fields and makes recommendations on approaches to structure and standardise these fields, including through data tables, naming conventions, descriptions, encodings, data and unit types, and, in some cases, predefined options ('picklists').

The importance of such data standardisation was recognised in the July Finance Track Communiqué, where the G20 Finance Ministers and Central Bank Governors “noted the efforts by the Climate Data Steering Committee to develop principles aimed towards building a Common Carbon Credit Data Model, as a voluntary tool.”⁴ A draft of the Data Model (Version 1.0) was presented to the SFWG for consideration at its third sitting in June 2025 and has been discussed with the SFWG through 2025.

A public consultation on Version 1.0 of the Data Model was undertaken between 4 July and 12 August 2025, as a complement to feedback and input from the SFWG and a CDSC-convened Policy Working Group (PWG). The public consultation was based on the Version 1.0 Data Model in spreadsheet format. The Data Model was accompanied by a Technical Consultative Note that summarised why and how the Data Model had been developed, highlighting the underlying issues arising around data standardisation. The consultation received 59 responses from a broad range of stakeholders, including public and private market participants. This Summary of Responses outlines the feedback received on Version 1.0 of the Data Model and sets out how this feedback has been incorporated into an updated Data Model (Version 2.0). Annex A provides a full list of respondents.

The public consultation achieved a broad range of responses across geographies and types of stakeholders across the carbon credit life cycle. Responses came from both advanced and emerging markets, with 32% of respondents marking themselves as global, 30% from North America and Europe, and 39% of operating primarily in Africa, Asia or South America. In preparing Version 1.0 of the Data Model, the CDSC Secretariat engaged extensively with policymakers across the G20 and beyond, including with international organisations, and so gathering private sector feedback was a priority for the consultation. In total, 48% of responses came from organizations in the carbon market ecosystem and industry bodies. Governments, MDBs and international organisations made up 17% of respondents, with standard setters comprising an additional 5% of responses. 17% of responses were from buyers, investors and exchanges, with the remainder being practitioner-led data initiatives (3%) and research and capacity-building organizations (10%). The level of market participant engagement in the consultation and the useful technical feedback provided is welcomed.

⁴ [G20 Finance Track communiqué](#)

There was strong recognition of the importance of the G20's focus on data standardisation for unlocking the financing potential of carbon credit markets. Based on a sentiment analysis of the 59 responses received over 90% expressed support for the focus on data standardisation and for the overall approach taken to the Data Model. This view was broadly shared by market intermediaries, industry associations, standard setters, regulators, investors, project developers and some registries. One respondent, for example, articulated this view: “[d]ata serves as the most critical indicator of market health, transparency, liquidity, and pricing...The G20's Sustainable Finance Working Group's effort on data standardisation is a critical element and milestone within the broader global effort to support high integrity carbon credit markets. The Data Model can serve as the cornerstone for growth and unlocking capital for investment at both the national and sub-national level, benefiting from reduced fragmentation and the increased likelihood of registries that can work across borders”.

Many respondents began by identifying the consequences of inadequate data standardisation, including inefficiencies, higher transaction costs, and weak transparency and trust in carbon markets. Respondents substantiated this view with real-world examples, noting that the absence of common standards often hinders their day-to-day operations. Responses included views from:

- **Standard setters.** ICVCM observed that “[t]hrough our assessment work, we have found that carbon-crediting programs use different registry formats and data fields, which can make it complex to compare project attributes or evaluate program-level governance. A common data framework would not only make our registry assessments more efficient, but it would also deliver broader benefits to market integrity.”
- **Private market participants.** The private sector—particularly market intermediaries and project developers—emphasized that they devote a disproportionate share of time and resources to gathering and harmonising data, with knock-on impacts on delivery timelines. Equilibrium, a project developer based in India, stated that they “routinely standardise inconsistent methodology names, serial conventions, project classifications, boundary definitions, and retirement evidence. [...] Current discrepancies between [independent registries'] data formats require manual reconciliation, increasing due diligence costs by 30-40% and delaying transactions”. BeZero, a specialist ratings agency, highlighted that addressing data issues ties up resources that could be deployed for other tasks, noting: “We employ over 20 people dedicated to gathering, cleaning and standardising project data as well as engaging with project developers and registries to clarify data inconsistencies”.

- **Policymakers.** The MDB Working Group on Article 6 provided an important perspective from the public sector: “the lack of data standardisation has been a recurring challenge in our work with client countries—particularly developing countries—seeking to establish or access carbon credit registries as required under Paris Agreement.”

Respondents broadly endorsed the scope and structure of the Data Model, viewing these as key to its effectiveness.⁵ Respondents emphasised that the choice to encompass all carbon credit segments—including credit-like mechanisms under Article 6—represents a significant step toward ensuring interoperability between data systems across carbon market segments. For example, Sylvera welcomed this approach, noting that the Data Model had rightly focused on “the most pressing interoperability gap without duplicating existing frameworks.” Similarly, the International Emission Trading Association (IETA) observed that “the current data model presented by [the CDSC to the] SFWG is the most complete model currently available”. Feedback also indicated that the organisation of data model tables around the stages of the credit life cycle was intuitive and aligned with user needs. While some respondents recommended the addition of further data fields and noted alternative structural approaches (see Section 1.2 for further detail), there was broad agreement that the Data Model structure was fit for purpose. Respondents particularly emphasised support for the inclusion of the UNFCCC’s Approved Electronic Format (AEF) data tables for reporting Article 6.2 guidance. Stakeholders further underscored the importance of accessibility, and most respondents generally welcomed the decision to provide the model in a spreadsheet format. A smaller number of respondents requested additional accompanying formats to support machine readability – including CSV, JSON schema, web-based applications or data portals and Power BI platforms.

The principle of unique identifiers for carbon credit projects and batches that could apply across the carbon credit ecosystem - a key feature of the Data Model - was widely supported by participants across the carbon credit value chain. Stakeholders emphasised the role of unique identifiers in “enabling full traceability and reducing the risk of double counting” (Sylvera) and described them as “critical for establishing a fully

⁵ **Scope:** The scope of the Data Model covers all carbon credit demand segments – i.e. credits used for CORSIA obligations, credits used in lieu of carbon pricing allowances when deemed appropriate by relevant policymakers, credits retired for voluntary purposes and those transacted through Article 6. It fully replicates the UNFCCC’s AEF guidance for Article 6.2 and will be updated to reflect (forthcoming) Article 6.4 guidance when that guidance becomes available. Carbon pricing allowances are out of scope, and purely in the remit of policymakers. See Section 2.2 of the Technical Note for more detail.

Structure: The Data Model contains suggested data fields organised across 11 tables, a structure that broadly reflects stages in the carbon credit life cycle from project design and development to credit issuance, transactions, and ultimately retirement (see Section 3.2 of the Technical Note for more detail).

traceable credit” (IETA). An Asian government agency echoed these points, noting that “[t]he introduction of a system of carbon credit ecosystem-wide unique identifiers is of significant importance for maintaining market integrity and, specifically, for effectively mitigating the risk of double counting, which is a key concern for the use of carbon credits in offsetting”. Most respondents agreed that batch-level identifiers strike the right balance between granularity and feasibility. However, detailed and sometimes differing suggestions were received regarding the specifics of the proposed design and issuance process for unique identifiers. Some respondents highlighted the importance of piloting unique identifiers and potential challenges around implementation and adoption. These views are summarised at the end of this Executive Summary and addressed in detail in section 1.3.1.

Respondents generally agreed that the Data Model accurately reflects the current state of carbon markets but also offered useful technical feedback on how the Model could be future proofed considering the market’s rapid evolution; these suggestions have largely been taken on board in version 2.0 of the Data Model. More specifically, market participants felt that the following design choices could be updated to reflect the latest and likely future market developments:

- **Programs and related projects.**⁶ Some respondents (including Adelphi and Greenery Inc.) fed back that the approach taken to programs did not adequately capture the different types that are emerging, or the nuances of how programs and underlying projects are related. Version 2.0 introduces a dedicated Program data table to record different types of programs and define the links between projects nested within them, including across multiple possible jurisdictions, to enable more accurate bottom-up carbon accounting. See Section 1.3.3 for further detail.
- **Location.** Respondents (including BeZero and CAD Trust) cautioned that the approach of using a single co-ordinate to capture project location (with links to files containing geographic boundaries) could quickly become outdated as projects are increasingly spread across multiple, non-overlapping locations. This includes, but is not limited to, carbon removal projects where carbon may be captured in one location and moved to another for storage. Version 2.0 addresses this issue by introducing a new ‘Location’ data table to capture multiple locations per project, as well as changes in project boundaries over time. See Section 1.3.4 for further detail.

⁶ A program is an umbrella framework that allows multiple similar emission-reduction projects to be registered and implemented under a single program, making it easier to scale, reduce transaction costs compared to registering projects individually. In the consultation version of the Data Model, these cases were addressed through the ‘program type’ data field, which allowed users to select from: standalone project (not part of a program), scaled-up approach (the umbrella or parent program), or nested project (one of several projects within the umbrella). An additional related projects field was also proposed to capture project relationships.

- **Sectors.** Similarly, respondents highlighted that in some cases, project methodologies can relate to multiple sectors (for example, a methodology may cover energy efficiency in both residential and industrial sectors). As a result, a new ‘Sectors’ data table has been introduced in the updated Data Model to capture multiple sectors per methodology. See Section 1.3.2 for further detail.
- **Validation and verification.** The Data Model was initially designed to capture a single validation cycle for each project. However, several respondents (including IETA and CAD Trust) noted that increasingly, projects may be validated multiple times, for example if the crediting period is renewed or the project geography changes significantly. Version 2.0 of the Data Model therefore introduces a new data table for ‘Project Validation’ which allows for multiple validation events. See Section 1.2.4 for further detail.
- **Eligibility labelling.** The consultation version of the Data Model includes ‘labels’ to identify types of carbon credits that – at the discretion of relevant regulators – can be used to meet a portion of compliance obligations in carbon pricing schemes.^{7,8} Respondents (including Standard Bank) pointed out that while some schemes have *ex ante* eligibility requirements for credits (for example: Singapore’s carbon tax), others have an additional step of regulatory approval before credits can be used and therefore labelled as eligible (for example: South Africa’s carbon tax). In Version 2.0, the picklists and relevant scheme names in the Data Model have been updated to capture this nuance. See Section 1.3.5 for further detail.
- **Methodologies.** Version 1.0 of the Data Model opted to use a picklist to capture the universe of carbon credit methodologies, noting that the list would have to be continually maintained as new project methodologies were approved. The balance of feedback (including from CAD Trust) suggested that in this instance, given the frequency with which new methodologies are being approved, it would be more pragmatic to introduce a new data table to allow methodology authors to input their own methodologies, including information such as version, code etc. Project developers could then assign methodologies to their projects from the list developed by methodology authors. See Section 1.2.4 for further detail.
- **Purpose of retirement.** Respondents (including BeZero and Gold Standard) noted that there is increasing consensus on the different compliance and voluntary purposes for retirement, and that it would be beneficial to standardise this field

⁷ In such cases, a designated national or regional authority determines which types of carbon credits are eligible for use within the scheme. The Data Model does not take a view on substantive eligibility requirements or otherwise and merely records as a statement of fact where such requirements exist.

⁸ Eligibility labels are also used to record eligibility for ICVCM Core Carbon Principle (CCP) labels. However, the feedback in this instance related specifically to eligibility for use in carbon pricing schemes.

(which was initially left as a free-text field). Therefore, Version 2.0 of the Data Model includes a picklist of possible retirement purposes, with an optional free-text field to provide further detail or capture a purpose of retirement not set out in the picklist. See Section 1.3.6 for further detail.

- **Project type.** Version 1.0 of the Data Model drew on the CAD Trust’s project type picklist. Following further discussions, Data Model Version 2.0 and CAD Trust v2 will instead align with the UNFCCC’s common ‘Activity Type’ nomenclature, in line with recommended best practices.

In addition to these improvements, respondents requested the addition of further data fields they felt were important for a common foundation. Specifically, Version 2.0 of the Data Model incorporates the following data fields/tables in response to stakeholder feedback:

- **Buffer pools and reversals.** Some methodologies require developers to set aside a ‘buffer pool’ of credits as insurance against the potential reversal of credits issued by a project. While Version 1.0 of the Data Model captured whether/when credits were added to a project’s buffer pool, respondents (including CarbonDirect) noted the importance of also recording the *size* of buffer pools, with the ability to update this data field over time to reflect reversal events. Version 2.0 addresses this by introducing dedicated tables for buffer pool information and reversal events. See Section 1.2.4 for further detail.
- **Beneficiary of retirement.** Respondents (including Adelphi) indicated that recording the ultimate beneficiary of the carbon credit (in cases where the party that retires the credit is different to the party that the benefit accrues to) might be useful. This is relevant in cases where, for example, a broker buys and retires credits for a third party. This data field has been included in Version 2.0 of the Data Model. See Section 1.3.6 for further detail.
- **Stakeholder data fields.** While Version 1.0 of the Data Model suggested that users should identify the ‘co-ordinating project developer’, and any ‘other project developers’, respondents (including Carbonfuture) noted that certain categories of projects (like durable carbon removals) might include a host of other stakeholders across the chain of custody. Version 2.0 of the Data Model includes a new data table for ‘Project Stakeholders’ to capture multiple possible stakeholders for each project, including multiple developers, owners, consultants, and actors involved. See Section 1.2.4 for further detail.

There were two key categories of stakeholder feedback that have not been incorporated into the Data Model at this time, either because there was no consensus on

a preferred approach, or because implementing the feedback would present additional technical challenges. These are:

- **Using picklists, rather than individual variables, for eligibility labels.** The consultation version of the Data Model includes a separate data field for each compliance scheme for which credits may be eligible (i.e. a separate data field for each “eligibility label”) – for example, one for the South Africa carbon tax and another for the Korea Emissions Trading System. Several respondents noted that individual labels would be computationally intensive and favoured a single picklist for eligibility labels instead. A subset of respondents additionally suggested that there could, instead, be a single data table where regulators would be permitted to add labels as freeform text, which market participants would then apply to crediting batches or projects, depending on the scheme involved. After carefully considering this feedback, the Secretariat has opted to retain the current approach of individual variables for each scheme. This preserves the standardisation benefits of consistent naming and categorisation conventions but also accommodates the reality that credits can be eligible for multiple schemes at once, which would not be accommodated by the other suggested approaches. The rationale behind this choice presented in detail in section 1.3.5.
- **Inclusion of data fields related to digital innovation, sustainable development, co-benefits, legal & accounting attributes and nationally determined contributions (NDCs).** These suggestions – examined further in Section 1.2.4 - have been noted for consideration in future iterations of the Data Model. However, at this stage, there was not broad enough support among respondents to include them, given the focus on defining a minimum core set of data fields.

Alongside detailed technical feedback, respondents underlined the need for engagement with key parts of the carbon credit ecosystem to foster voluntary uptake of the Data Model. This includes engagement with:

- **Registries:** Many respondents saw fostering uptake of the Data Model by registries as key given their critical role in the system supporting project development and credit registration, steps where much of the data is originated. Respondents noted that registries face constrained resources and switching costs from existing technology stacks and data approaches. These costs should be considered (noting that some of these systems are currently in the process of being updated, which would provide a cost-efficient window to embed the Data Model).
- **Project developers:** Respondents noted it would be important to keep in view the role of project developers who play an important role at the start of the lifecycle and could

benefit from reduced frictions around registration. However, care was needed to avoid frustrating development and innovation which were much needed for the carbon credit market to evolve and grow.

- **Buyers:** It was well recognised that buyers could create a pull factor, and the value of engagement with buyers' coalitions was emphasised.

Respondents also noted that the signals sent - and actions taken - by policymakers matter. Some noted that policymakers and regulators could use the Data Model as a reference for national or sub-national registry development, which is particularly relevant at this time given several countries are in the process of developing national registries to support development of their carbon markets and enable better bottom-up emissions accounting. Respondents recognised that some national policymakers and regulators may choose to encourage or require enhanced corporate disclosure requirements and that the Data Model may support the shaping of those requirements.

A consistent theme in the feedback was that achieving data standardisation in practice requires the Data Model pilot to actively engage with other relevant initiatives. The Climate Action Data (CAD) Trust, a platform that aggregates and publishes data from various registries, harmonises data using a 'common denominator' approach - maintaining alignment with registries' existing methods and standardising fields only when practices diverge. Respondents welcomed the policymaker lens and insight from financial sector best practice provided by the Data Model, and suggested technical alignment of these two approaches could support better carbon credit market functioning overall. Similarly, engagement with the Carbon Open Data Protocol (CDOP) – which aims to standardise a larger set of data fields relevant to more sophisticated users of carbon credit data such as specialised ratings agencies - was encouraged. Work to ensure the Data Model can provide a common foundation for wider initiatives has already commenced; Version 2.0 of the Data Model is now largely mutually aligned with CAD Trust, and CDOP has also committed to use the Data Model's common foundation as a basis from which to build more detailed guidance.

In addition to engaging with other data standardisation initiatives, respondents highlighted emerging and ongoing standard setting processes which would ideally benefit from the G20 focus on this issue and draw on the Data Model. Several respondents noted planned work by ISO, which has consulted on developing a standard for carbon credit data. Respondents encouraged the CDSC to engage in that process to ensure the progress made through the Data Model was reflected in the ISO work.

More broadly, respondents recognised the need for a 12–18-month piloting period with market participants to trial and further refine the Data Model. Respondents noted that to be effective, the pilots would need to cover a mix of geographies as well as a broad spectrum

of market participants including registries and project developers. Suggestions were made on how to identify a mix of jurisdictions, as well as which advanced and emerging market economies could be relevant. A large project developer noted that they “agree on a phased implementation approach. It is important that the pilot testing is not limited to a single jurisdiction or registry but covers a wide range of geographies and methodologies. It is also important to obtain feedback from market actors sitting in different phases of the value chain, including carbon asset developers. This is important to make sure that the model is inclusive of the many nuances associated with carbon markets, and to keep in mind that a good portion of data feeding into the scheme is generated / collected in the first place by market actors sitting in the initial part of the chain.” A formal Expression of Interest (EOI) process will be run in Q4 2025 to identify potential pilots. This process is intended to ensure that a broad set of stakeholders can express interest and outline more specifically areas of focus for the pilots. (see Section 3).

Respondents provided feedback on specific topics that would need careful consideration during the piloting phase, including:

- **The format, structure and issuance process of unique identifiers.** While there was widespread support for the principle of identifiers that apply across the carbon credit ecosystem, detailed and thoughtful feedback was raised on their proposed format and structure, as well as the issuance process. The feedback on these issues was not uniform, which is why the updated draft of the Data Model does not include a change to the proposed format. This is discussed in detail in Section 1.3.1. However, there is recognition that the proposed unique identifier format will need to be tested carefully with market participants – and refined as needed – during the piloting phase.
- **Cost of implementation for registries and project developers.** Respondents, including registries and project developers, highlighted the potential cost of implementation as a barrier to adoption. The Climate Action Reserve, though broadly supportive of the Data Model, noted that “[f]rom a registry perspective, careful consideration will be required regarding the timing and costs (both financial and in terms of other resources) of adopting the Data Model. We will need to conduct a thorough assessment of the Data Model to identify any gaps relative to our current program requirements. Additionally, we will need to evaluate the structure and functionality of our registry to ensure the data can be effectively integrated and made available. A key consideration will be the costs of adapting our registry and determining how the costs of implementing the Data Model compares to other organisational priorities”. Exploring least-cost avenues of implementation, including capacity building and technical assistance, phased implementation, innovative

mechanisms to share cost and automated technologies, will be a key priority for the piloting phase.

- **Capacity building and training materials.** Respondents highlighted the importance of workshops and supporting material to help users understand, implement and operate the data model. The African Development Bank noted, “A guidance note and user manual on explaining the Model, including the implicit assumptions and hypotheses would be needed. Where possible, a number of workshops may be required where a few worked examples at different jurisdictions, should be considered.” User manuals that explain the Data Model without technical jargon were highlighted as a critical resource, ideally translated into various languages to support use of the Data Model by a wide audience.

Finally, consultation responses highlighted the importance of establishing some form of enduring governance for the Data Model, including to ensure consistency of implementation, manage future updates, and provide a channel for stakeholder feedback. While respondents broadly recognised this need, there was no consensus on which entity should take on this role. This means that the CDSC may need to continue to support the upcoming piloting phase (12–18 months) to allow the Data Model to be tested in practice. Lessons from the piloting phase will help inform decisions on a sustainable governance structure for the Data Model beyond this period.

The remainder of this document sets out detailed feedback on the following topics:

- The need for data standardisation, including benefits and use cases of the Data Model (Section 1.1)
- The scope and structure of the Data Model, including on the data fields captured (Section 1.2)
- Key design decisions including on unique identifiers, project and sub-project tables (like sectors & methodologies), program type, location data, eligibility labels, retirements, integration of the UNFCCC’s AEF reporting guidance for Article 6.2 credits, and MRV/dMRV fields (Section 1.3)
- Adoption, implementation and piloting of the Data Model (Section 1.4)

Annex A provides a full list of respondents, and Annex B recaps the consultation questions.

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Section 1: Detailed feedback

This section summarises the feedback received in the public consultation, across core and technical questions.⁹ Questions are categorised in sub-sections under key themes. A CDSC response is also included in each section.

Section 1 is organised into four areas:

- Section 1.1 discusses market participants' experience with (inadequate) data standardisation in carbon markets, and the potential benefits of a Data Model to address this.
- Section 1.2 covers feedback on the scope, structure, and format of the Data Model.
- Section 1.3 highlights perspectives on key features and design choices of the model, including unique identifiers, sub-project tables, Article 6 reporting integration, eligibility labels credit retirement data fields, picklists, location data, MRV data, amongst others.
- Section 1.4 sets out the feedback received on adoption levers, implementation and piloting of the Data Model

1.1 Need for data standardisation

This subsection sets out a summary of responses related to:

- Market participants' experience of data standardisation (Section 1.1)
- The benefits and use cases of the Data Model (Section 1.2)

1.1.1 Market participants' experience of (inadequate) data standardisation

Consultation Question

What has been your experience of data standardisation (or lack thereof) in carbon credit markets? How has this impacted your ability or willingness to support the development of, or participation in these markets? Please share any relevant examples or case studies.

Summary of responses

Respondents broadly agreed that the lack of standardisation creates inefficiencies, increases transaction costs, and undermines trust in carbon credit markets. This perspective was shared by market intermediaries, industry associations, standard setters, regulators, investors, project developers and some registries. Specifically:

⁹ Core Questions (Section B of the survey) were mandatory. Detailed Technical Questions (Section C of the survey) were optional and typically elicited fewer responses.

- **Industry associations (ISDA, IETA)** stressed that a lack of a common framework for data standardisation hindered their members' ability to perform certain market functions. ISDA specifically noted that "Some ISDA members' ability to serve their function in the [carbon credit] market relies on the availability of detailed, project-specific data which enables them to interrogate carbon accounting, additionality and permanence risks. For voluntary carbon market registries, they often find that certain data fields or reports are missing/out-of-date for projects that they wish to assess. In these instances, they must alert the registry and/or contact the project developer directly, slowing their process considerably. Additionally, the lack of standardised formatting and terminology between VCM registries adds significant time and complexity to their processes. They thus tend to employ a large team of data engineers and have a dedicated team for engagement with project developers/registries, who spend much of their time dealing with these issues."
- **Standard setters, specifically ICVCM,** suggested that a lack of data standardisation posed a barrier to effective comparison of projects and programs, noting that "[t]hrough our assessment work, we have found that carbon-crediting programs use different registry formats and data fields, which can make it complex to compare project attributes or evaluate program-level governance." Structured finance experts that participate in their Continuous Improvement Work Program (CIWP) noted that "inconsistent data is a barrier to investment. Financial actors need clear, consistent, and comparable project and program data to assess risk, conduct due diligence, and feel confident in participating in this market."
- **Registries and independent standards (including Gold Standard, Climate Action Reserve and anonymised respondents)** recognised the challenges posed by a lack of data standardisation, including to environmental integrity. One registry that preferred to remain anonymous noted that "the lack of data standardisation increases systemic risk, slows certification, raises costs, and undermines the ability of standards such as ours to guarantee both environmental integrity and legal compliance". Others, while noting the value of data standardisation, encouraged greater collaboration between practitioner-led initiatives to avoid multiple sets of guidance for registries to adopt. Gold Standard, for example, noted that they "recognise the value of data standardisation, to support engagement with the carbon market (e.g. by investors, insurers and other entities seeking to provide supporting services), transparency and scaling [...]", but noted the need for voluntary initiatives supporting data standardisation to produce aligned outputs from a technical perspective.
- **Market intermediaries including specialised ratings agencies (Sylvera, BeZero), analytics providers (Fastmarkets) and other intermediaries (Carbon Direct)** are

significantly affected by the lack of data standardisation and emphasised the impact on their core business operations. Sylvera, for example, noted that “[a]s a ratings and carbon market data platform, we work daily with project developers, registries, exchanges, corporates, and financiers across both voluntary and compliance-oriented markets. Through this work, we have seen first-hand how the lack of consistent, structured data standards hinders market efficiency, integrity, and accessibility. In assessing carbon credit generating projects, we often encounter inconsistencies in project documentation, varied interpretations of methodologies, and differences in reporting formats between registries. In [...] data analysis, tracking issuances, transfers, and retirements is complicated by the absence of a common set of required fields, clear provenance markers, and machine-readable formats. These gaps increase transaction costs, slow due diligence, and create unnecessary uncertainty for buyers and investors.” BeZero, a specialist ratings agency, highlighted that addressing data issues ties up resources that could be deployed for other more productive tasks, noting: “We employ over 20 people dedicated to gathering, cleaning and standardising project data as well as engaging with project developers and registries to clarify data inconsistencies.”

- **Buyside market participants (EY, Japanese Bankers Association, LSEG)**, pointed to fragmented methodologies and documentation as major barriers to the fungibility of carbon credits. They agreed that standardisation could bring about greater market transparency by enabling the comparison of projects and credit attributes. Standard Bank, for example, noted that “standardisation would contribute to price discovery, liquidity and transparency supporting the market [...] as well as providing a reliable foundation to develop and support our internal carbon market risk framework.”
- **Project developers, investors, and VVBs (TASC, and anonymized project developers and investors)**, highlighted how inconsistent recording of data leads to challenges with project registration and due diligence, increasing costs and delays. Among other issues, inconsistent taxonomies complicate data workflows and reduce confidence in their credits. One major project developer, for example, suggested that the current situation “impedes process efficiency, interoperability, and ultimately limits their potential to drive meaningful climate action.” Equilibrium, a project developer based in India, stated that they “routinely standardise inconsistent methodology names, serial conventions, project classifications, boundary definitions, and retirement evidence. [...] Current discrepancies between [independent registries’] data formats require manual reconciliation, increasing due diligence costs by 30-40% and delaying transactions.”
- **Practitioner-led data standardisation initiatives like CAD Trust** recognised carbon credit market issues related to a “lack of data standardisation, transparency,

and low interoperability between carbon registries”, and noted that they were in part set up to address some of these issues. CAD Trust also identified three specific priority areas where the absence of standardisation is holding back market development: (1) reconciliation of registry data with ITMO reporting under Article 6.2, (2) tracking the eligibility of carbon credits for carbon pricing schemes and quality labels like the ICVCM’s Core Carbon Principles (CCPs), (3) identifying potential double counting, such as overlaps in project location, double registration, or use of the same credit by multiple entities.

A small number of respondents, however, did mention that while data standardisation for carbon credit markets was important, there were also other issues that require attention, including the environmental integrity of credits and quality assurance in the carbon credit market (multilateral stakeholder). Finally, one project developer noted that while they support data standardisation efforts in practice, previous efforts had not sufficiently consulted them and had therefore introduced overly burdensome or complex requirements.

CDSC response

The feedback seems to confirm that the focus of the G20 SFWG under the South African presidency is important, in that a lack of data standardisation is affecting market participants along the entire carbon credit lifecycle. This lack of standardisation appears to be adding costs and impeding transparency for project developers, registries and buyers, and impacting the ability of standard setters and rating agencies to compare and assess projects and credits.

1.1.2 Benefits and use cases of the Data Model

Consultation Question

Have the key benefits and use cases of the Data Model been accurately captured in Section 2.3 of the Note? Are there additional benefits and use cases that are not captured in the Note?

Summary of responses

The overarching need for a carbon credit ecosystem-wide Data Model strongly resonated with market participants. For example, the AfDB noted that “[We] would consider the objective of ‘speaking the same language’ towards improving market

functioning as one of the key benefits of this Data Model. In the African context, this is very critical for structuring and managing the demand and supply side of carbon credits.”

Respondents also recognised the benefits and use cases of the Data Model articulated in the Technical Note. Specific benefits highlighted by respondents include:

- **Enabling interoperability across market participants across the carbon credit life cycle.** Several market participants – including Sylvera, Equilibrium, Carbonplace and Global Carbon Trace – cited interoperability between market participants as a key benefit of the Data Model.
- **Enhancing environmental and carbon credit market integrity, including by mitigating the risk of double counting.** Respondents (Climate Action Reserve, Carbon Direct) believed the introduction of unique identifiers would play an important role in strengthening trust in the market. One global bank noted that “[r]equiring a unique [identifier] would be a major step forward for the carbon market, reducing risk of double counting and improving the ease by which data can be read and managed.”
- **Lowering transaction costs for buyers and investors.** CarbonDirect noted that “the model allows different market participants to finally ‘speak the same language’. For buyers and our advisory clients, this enables true ‘apples-to-apples comparisons’ of credits, which significantly reduces due diligence time and transaction costs.” Additionally, the Climate Action Platform for Africa (CAP-A) noted that the Data Model could play a role in investment facilitation: “Comparable, credible data reduces due diligence costs for climate-positive growth investors, making African credits more competitive globally.”
- **Strengthening or supporting the development of national emissions registries.** Respondents highlighted the data model’s potential as a reference template for national registries. Intellectap noted that “by creating this common model, national policymakers can [...] reference the model not only for disclosure frameworks as the note indicates, but also towards market infrastructure creation (i.e., what registry functionalities are required, standards for interoperability, linkages with international registries, etc.).” CAP-A noted that “[t]he model could form the backbone for AU or regional registry linkages, enabling cross-border carbon trade and harmonised reporting across multiple African jurisdictions.” LSEG also noted that “the common data model will help to support the development of registry infrastructure in Host countries in particular who will be able to use the common data model to standardise and align their project databases in advance, ensuring that all critical information is uniform across the market. As noted, the burden of [data] standardisation will lie with the registries themselves, so ensuring that there are

standards in place in advance will lower the administrative burden of alignment for many Host countries.”

In addition to those identified in the Technical Note, further use cases were suggested, including:

- **Digital innovation applications:** Market participants including SustainCERT, Carbon Direct, Sylvera, and some government agencies suggested that the Data Model could support the adoption of digital innovations like dMRV, blockchain, and automated checks over time. For example, Carbon Direct noted that “This standard could be the “crack in the dam” for mainstreaming dMRV by removing integration barriers caused by fragmented, inconsistent, or siloed data. With a shared scheme, dMRV technologies could more directly connect to registries, link continuous monitoring streams to unique project IDs, and deploy automated analytics at portfolio scale — unlocking cost-effective, high-frequency verification that is critical for scaling supply and strengthening market trust.” Market participants from emerging markets suggested that the Data Model could support leapfrogging of existing technology. For example, one financial regulator from Africa suggested that data standardisation could enable “seamless integration with advanced market infrastructure such as blockchain platforms”. Finally, some market participants noted the benefits of a Data Model to support spatial integrity, including through further standardisation of geospatial data.
- **Finance-enabling uses:** Responses noted that the Data Model could have positive impacts for investors. One multilateral agency suggested that the Data Model had several “finance-enabling use cases—e.g., how standardisation reduces due-diligence costs for lenders and investors, supports aggregation across batches and vintages, and underpins structured finance (e.g., project warehousing, securitisation) where appropriate.”
- **Cross-verification between certifying standards and their associated registries** (where these roles are performed by different market participants): One market participant suggested that the Data Model could play a role in enabling “cross-verification between certifiers and registries to assure spatial integrity and provenance. This capability is especially critical for carbon credit ecosystem-based projects that operate in complex, dynamic landscapes. Such verification underpins high-integrity standards, which in turn are foundational to buyer confidence and long-term market credibility.”

CDSC response

The feedback supports the view that a common Data Model would have significant benefits to carbon markets, including in enabling interoperability, strengthening environmental integrity assessments and lowering transaction costs. Respondents also recognised the importance of this resource in supporting the development of national emissions registries, a key use case to be tested during the piloting phase.

The piloting phase will also consider the value and technical feasibility of additional use cases proposed by market participants, including use in due diligence templates, in enabling digital innovations like dMRV and blockchain platforms, as well as in facilitating cross-verification between certifying standards and registries.

1.2 Scope and structure of the Data Model

This section sets out a summary of responses related to:

- Data Model scope (Section 1.2.1)
- Data Model structure (Section 1.2.2)
- Data fields captured in the Data Model (including data descriptions, picklists and static/dynamic nature) (Section 1.2.3)
- The format of the Data Model (Section 1.2.4)

1.2.1 Model scope

Consultation Question

Has the scope of the Data Model been appropriately defined, noting that it includes all carbon credits (including those transacted under Article 6), and excludes non-credit based cooperation under Article 6 and emissions trading system allowances (further detail is available in Section 2.2 of the Note)?

Summary of responses

Respondents consistently endorsed the scope of the Data Model.¹⁰ Respondents emphasised that the choice to encompass all carbon credit segments—including credit-like

¹⁰ The scope of the Data Model proposed in the Technical Note encompasses all carbon credits, including credits used for voluntary purposes, for CORSIA obligations, to meet compliance obligations in carbon pricing schemes in lieu of allowances (at policymaker discretion) and those transacted through Article 6. The standardised reporting fields for bilateral agreements under Article 6.2 are fully captured by the Data Model. Article 6.2 Internationally Transferred Mitigation Outcomes (ITMOs) are not limited to carbon credits and can encompass a range of bilateral cooperation activities, including credible policy actions resulting in emission reductions. The Data Model is only relevant in cases where carbon credits, generated through processes comparable to the voluntary market, are authorised for use under Article 6.2. In these cases, the Data Model

mechanisms under Article 6—represents a significant step toward ensuring interoperability between data systems across carbon market segments. Sylvera welcomed this approach, noting that the Data Model had rightly focused on “the most pressing interoperability gap without duplicating existing frameworks.” Similarly, the International Emission Trading Association (IETA) observed that “the current data model presented by [the CDSC to the] SFWG is the most complete model currently available”.

BeZero requested clarity on the status of credits generated under regulated carbon credit standards led by Governments, for example, the Woodland Carbon Code (UK) and J-credits (Japan). The Data Model could also be relevant for these types of credits.

CDSC response

Given general agreement on the scope of the Data Model, it will retain the current scope for the piloting phase.

1.2.2 Model structure

Consultation Question

Each table in the Data Model relates to a stage of the carbon credit life cycle. Does this approach to structuring the Data Model meet your needs as a user? If not, what alternative approaches would you suggest?

Summary of responses

Respondents supported the life cycle structure of the Data Model, viewing it as intuitive and aligned with existing operational workflows. Registries, project developers, and rating agencies noted that this mirrors how data is tracked internally, supporting comparability and auditability. Carbon Direct additionally indicated that the relational schema had sufficient functionality to meet their needs: “While the lifecycle-based structure provides a clear, end-to-end view, its practical utility for us hinges on the ability to query, join, and aggregate data across different tables seamlessly. The proposed relational schema, with its use of primary and reference keys (like projectId and batchId) linking tables

fully incorporates and replicates the UNFCCC’s Agreed Electronic Format (AEF) tables and provides a guide for how Parties can supply the required information to UNFCCC. The Data Model does not yet capture data requirements for Article 6.4 as these are not yet available—but will be updated to do so when the requirements are finalised and the mechanism’s registry is operational.

such as 'Project Design', 'Credit Issuance', and 'Credit Retirements', provides the necessary foundation for this.”

ISDA did question whether the life cycle structure was appropriate and suggested two alternative model structures for consideration. Specifically, they noted that “[a]n alternative approach to it would be an entity relational approach, where each table captures information about one particular concept – for instance all project information is captured in a “project” table, including design, registration, MRV, etc. [...] Another approach could be structuring pertinent carbon project data fields related to projects’ co-benefits (e.g. VCS CCB label, UN SDGs, etc).”

CDSC response

Given the balance of responses favoured a life cycle approach, the Data Model will retain this structure in the piloting phase. The structure may be updated in the future to reflect any feedback garnered during piloting.

1.2.3 Excel data format

Consultation Question:

Given accessibility is a guiding principle, is a Microsoft Excel spreadsheet a suitable format for the Data Model? Are there any additional resources required to support implementation of the suggested approaches to data standardisation (e.g. a user manual, workshops or worked examples), or any other suggestions to make the Data Model clearer and/or more digestible?

Summary of responses:

Respondents agreed that a spreadsheet is the most appropriate format to ensure broad accessibility of the Model. LSEG for example noted that a spreadsheet is a “nearly universal tool that will be regularly accessible to the widest selection of market participants [...] Given the breadth of the information captured by the model, this will be crucial to ensure that it is used by market participants. Requiring a separate, less universal program to engage with the model would present a barrier to use for many market participants.” However, several respondents including the Hedera Foundation cautioned against reliance on proprietary software and called for open-source formats - csv files, for example - that could deliver the same accessibility benefits while avoiding vendor-dependence.

Consultation responses also included suggestions to enhance the format, as well as version control and security features of the spreadsheet. For example, a global bank

suggested “adding a simplified flow chart(s) upfront showing 1) the classification funnel and 2) a layman’s process sequence of how the data is derived and how it will be used” to enable usability. Suggestions to remedy concerns regarding version/error control and security risks included locked templates, web-based portals, or hybrid delivery (spreadsheet plus online interface), with potential to migrate toward online forms with built-in validation in the long run. Finally, some respondents (including Equilibrium and EY) suggested complementary resources, including developer packs, worked examples, and data dictionaries.

CDSC response:

Given the balance of feedback, and the need to maintain accessibility of the resource in line with the guiding principle set out by the SFWG, version 2.0 of the Data Model will continue to use a spreadsheet. The piloting phase will consider potential modifications for user clarity and security informed by the consultation feedback. It will also explore open-source file formats to avoid the need for proprietary software.

The development of complementary resources will be explored in the piloting phase in consultation with market participants.

1.2.4 Data fields captured in the Data Model (including data descriptions, picklists and static/dynamic nature)

Consultation Questions

- Does the Data Model capture all the necessary data fields to support a recommended common foundation for data standardisation and are the right data fields included in the right tables?
- Do you agree with the picklist values included in the Data Model? Are there any data fields that, in your view, should have a picklist but currently do not? Do the values assigned to picklists strike an appropriate balance between the need for granular information and flexibility, versus the need to allow meaningful aggregation of data if users require this?
- Are data field descriptions sufficiently clear?
- Are fields correctly noted as static or changing?

Summary of responses

While there was broad support for the data fields included in Version 1.0 of the Data Model, respondents had several suggestions on additional fields to include. Some respondents commended the Data Model for its comprehensive nature. IETA, for example, noted that “the inclusion of some fields goes beyond other standardisation initiatives (baseline dMRV, pricing, transaction).” However, some respondents, such as IEEFA, posited

that the Data Model “does not yet capture all the [recommended] fields necessary to establish a robust minimum baseline for standardisation”.

Additional data fields suggested by respondents spanned a broad range of topics, which are listed here for completeness. These were:

- **Project-level carbon accounting and quality variables:** Some respondents, (including BeZero, IEEFA, Equilibrium, Carbon Direct), requested the inclusion of data fields related to the size of buffer pools, leakage, permanence and reversal variables to indicate the carbon accounting treatment of non-permanent carbon removals and reversal risk.
- **Project development stakeholders:** Some respondents noted that the Data Model does not capture all stakeholders involved in projects, with suggested additions including fields for aggregation models across smallholder programs. Carbonfuture noted the importance of capturing countries and entities across the chain of custody for carbon removals.
- **Pre-issuance fields:** Some respondents, (including Carbon Direct) suggested the inclusion of a new data table with data fields capturing details of offtake agreements to enable “accurate supply forecasting and risk assessment before issuance.”
- **Non-carbon benefits and environmental attributes:** Some respondents (including IEEFA, Hedera Foundation, Carbon Direct, Gold Standard, Equilibrium, Climate Action Platform for Africa), requested the inclusion of benefits outside of carbon mitigation, including on projects’ impact on Sustainable Development Goals, social safeguard frameworks, community benefit sharing metrics, nature impacts, and gender impacts, including at the subnational level.
- **Project categorisation:** Some respondents (including a large project developer), noted that the current list of project types does not capture the granularity common in carbon credit market transactions, suggesting a nested structure with a main project type and a project subtype.
- **Project documentation:** Some respondents (including BeZero), noted that project technical reports were not exhaustive, suggesting adding links to a monitoring report and an additionality assessment report.
- **Transaction-related variables:** Some respondents questioned how the Data Model would capture data related to credit transactions beyond individual spot trades. For example, Abatable asked, “How would you capture volumes and prices agreed under future deliveries, or other financial instruments such as credits options?”. LSEG also noted that credits “bought in bulk as a “portfolio” with a wide variety of other credits” would be difficult to capture. Equilibrium suggested adding further counterparties for transactions, e.g., brokers and custodians.

- **Buyer details:** Some respondents, (including Intellectcap) noted that “details on type of buyers” could improve carbon credit market transparency.
- **Climate finance-related data:** Some respondents suggested that finance readiness and risk could be captured in the Data Model. IEEFA noted that key elements not included in the model include “funding model, blending instruments, price band [and] sale type.”
- **National carbon accounting variables:** Some respondents (such as IEEFA) requested the addition of “NDC budget alignment fields to prevent over-authorization under Article 6.” A large project developer noted that including IPCC sectors would facilitate understanding of whether a project is within the scope of an NDC.
- **Legal treatment of credits:** Some respondents, (including IEEFA, Greenery, and EY) requested the inclusion of data fields to clarify legal status. For example, respondents suggested adding “rights and obligations” for ownership of credits, including capturing “multi-party rights”, and the explicit inclusion of legal authorisation and country approval status. EY noted that the Data Model would benefit from “incorporat[ing] legal and regulatory considerations such as Rights to Land, Illegal Activities, Conflicts, Approval from Appropriate Authorities, Ownership of Carbon.”
- **Legal identifiers for organisations:** Some respondents (including a market intermediary) requested “organization identifiers for market participants where available”, including LEIs for developers, registries, VVBs, and beneficiaries of retirement
- **Blockchain and tokenisation identifiers:** Some respondents (including IEEFA), requested the inclusion of blockchain and tokenisation identifiers “to avoid double counting between traditional and tokenised markets”

Respondents noted the importance of adaptability of the Data Model over time. ISDA emphasised that “no Data Model is ever complete, and it is more important to construct an effective governance process to develop, evolve and maintain such a model.” Several respondents noted that Article 6 may require further changes in the future.

While views on the values included in picklists were generally supportive, there were a few areas where respondents suggested a change in approach. CAD Trust noted that “The current picklists strike an appropriate balance between providing granular information and enabling meaningful data aggregation”. However, respondents suggested that certain topics would benefit from an alternative approach:

- **Project type:** Some respondents suggested a change in taxonomy for project type. For example, CAD Trust suggested using the UNFCCC activity type picklist, and BeZero suggested a taxonomy they had developed.
- **Sectors:** Some respondents, including a large project developer, suggested using IPCC sectors rather than ISIC sectors
- **Purpose of retirement:** Many respondents were in favour of introducing a picklist for purpose of retirement (see Section 1.3.6)

On balance respondents agreed that data field descriptions are sufficiently clear, with one change suggested. Adelphi recommended that the description for registration date be changed, noting that “a registration date is typically the date of finishing the registration process, which is not necessarily the same date on which a project is technically entered into the respective registry”.

Respondents additionally agreed that fields were correctly noted as static or changing.

CDSC response:

The broad and thoughtful set of feedback received is welcomed, and in many cases has been integrated into Version 2.0 of the Data Model including:

- **Project-level carbon accounting and quality variables:** Two dedicated data tables for buffer pools and reversal events have been introduced, recognising the importance of capturing buffer pools comprehensively
- **Project development stakeholders:** A dedicated stakeholder data table has been introduced to capture stakeholders across the project development chain of custody
- **Picklists:** Version 2.0 adopts the UNFCCC activity type picklist for the project type data field. A picklist has also been introduced for purpose of retirement.
- **Data field descriptions:** The description for the registration date data field has also been revised, noting the feedback.

In some cases, given the balance of responses, existing features were retained; however, these topics will continue to be monitored throughout the piloting phase. The decision not to include certain additional fields was guided by the principle of prioritising only those that form a core common foundation and are critical to carbon credit market functioning, rather than fields that, while important, do not yet require standardised treatment across the market.

- **Certain pre-issuance fields:** These fields were not included in Version 2.0 of the Data Model as offtake agreements do not occur for a broad or large enough set of projects and credit transactions (noting this may change in the future).

- **Non-carbon benefits and environmental attributes:** Due to the large array of possible benefits that could be captured, and the importance of measuring each benefit separately, standardisation towards a common foundation was not deemed feasible for this iteration of the Data Model.
- **Project categorisation:** Version 2.0 of the Data Model has adopted the Article 6.2 AEF common nomenclature activity types, rather than other taxonomy suggestions (including a nested structure) to align with the UNFCCC's global guidance.
- **Project documentation:** The Data Model includes document links for the project design document, verification reports, and validation reports. Given the balance of responses, this was deemed to be sufficient for a common foundation.
- **Transaction-related variables including buyer details:** While this area has been noted for future consideration in piloting – particularly if an exchange is able and willing to pilot the Data Model – Version 2.0 does not include transaction-related data fields (beyond spot trades) for tractability.
- **Climate finance-related data:** These fields were not included in Version 2.0 of the Data Model given the relatively small share of projects that are currently funded using blended climate financing instruments (noting this may change in the future).
- **National carbon accounting variables:** While this area has been noted for future consideration in piloting – particularly if a national registry is willing to pilot the Data Model – version 2.0 does not include national carbon accounting related data fields as this was deemed to be a sovereign decision for policymakers.
- **Legal treatment of credits:** As the legal status and treatment of credits varies significantly by jurisdiction, standardisation towards a common foundation was not deemed feasible for this iteration of the Data Model.
- **Blockchain and tokenisation identifiers:** This area has been noted as one for further consideration during piloting phase.
- **Picklists:** Version 2.0 of the Data Model will continue to use ISIC sectors, given their alignment with other national statistics, noting that the UNFCCC AEF sectors are also included in the Data Model

1.3 Key design decisions

1.3.1 Unique IDs

Consultation Questions:

- Section 4.2.1 of the Note outlines a proposal to introduce a system of carbon credit ecosystem-wide unique identifiers to support market integrity and reduce the risk of double counting. Do you have a view on this proposal? Do you have feedback on the design of the identifiers, including the focus on batch-level identifiers (versus credit-level identifiers)? Do you have feedback on the implementation of a system of unique identifiers, including on a suitable body that could issue identifiers? What do you see as the potential benefits of a common approach to unique identifiers in carbon credit markets?
- Is a batch level identifier sufficiently granular for most use cases? What use cases would require a credit-level identifier?
- Section 4.2.1 of the Note lays out, in detail, the rationale for the proposed unique identifier format, and the attributes that are captured within it (versus elsewhere in the Data Model). Do you agree with this approach, or should other attributes be captured in the proposed unique identifier format?
- Section 4.2.1 of the Note sets out an approach to implementing unique identifiers, through Suitably Qualified Bodies (SQBs) in willing pilot jurisdictions. Do you have any feedback on this proposed approach?

Summary of responses:

Actors across the carbon credit value chain strongly supported the principle of unique identifiers for carbon crediting projects. More than half of consultation respondents engaged with this question, and overwhelmingly recognised the benefits of unique identifiers for reducing double counting and for improving linkages between carbon credit markets and financial markets. This includes stakeholders such as:

- **Government bodies** (Financial Sector Conduct Authority of South Africa and an Asian regulator)
- **Financial Institutions** (Standard Bank and other anonymised financial institution)
- **Project developers** (Anthesis, Equilibrium, Solar Rais and a large project developer)
- **Exchanges** (LSEG, JSE)
- **Registries** (CAR, Global CarbonTrace, Isometric)
- **VVBs** (SustainCert)
- **International organisations** (World Bank, IETA)

One **carbon standard** who wished to remain anonymous stated the potential benefits of a voluntarily harmonised approach: “When we receive a new project for certification, one of

our first responsibilities is to ensure it does not overlap with existing projects. This is essential to prevent double counting. However, without a unified system or shared data format across registries, this verification process is manual, resource-intensive, and susceptible to error.”

Most respondents additionally supported the suggestion to include batch-level identifiers with an optional extension to the credit level. Supportive respondents noted the practicality of this approach and its usefulness for integrating carbon credits into the broader financial system. Examples of supportive responses include:

- IETA: “Batch-level identifiers provide a pragmatic balance between granularity and administrative feasibility”
- CAP-A (a capacity builder): “We agree with the focus on batch-level identifiers as a practical first step. Batch-level tracking strikes a balance between granularity and feasibility, capturing the most relevant issuance event data without overburdening registries and developers.”
- SustainCert (a VVB): “The ISIN-inspired format strikes the right balance, and batch-level identifiers are appropriate since most trading occurs at this level.”
- Equilibrium (a project developer): “Batch-level identifiers as the default are appropriate and handle most use cases while keeping issuance tractable. Credit-level IDs should be optional and event-driven (e.g., fractional settlement, custody chain integrity).”. This sentiment was echoed by a large project developer, who noted that the proposed approach would “greatly bring more transparency to the market”.
- Isometric (a registry): “The overall idea of having ecosystem-wide unique identifiers makes sense. Batch level identifiers are a good idea as well - credit level tracking would be very difficult to scale.”

A minority of respondents were in favour of credit-level identifiers as the default option. Gold Standard noted that credit batches are frequently split if account holders sell a portion of their holdings, and that the proposed system of identifiers would need to account for these. Another investor argued that credit-level identifiers enable better transparency.

Respondents across the life cycle voiced support for the proposed format for unique identifiers - in particular that the format mirrors that of ISINs used in securities markets – with some exceptions. The World Bank and Solar Rais (a project developer) supported the proposed format, and SustainCert (a VVB) noted that the ISIN-inspired format “strikes the right balance.” Three alternative suggestions on format were proposed: (i) using the Global Carbon Trace Platform format (AfDB), (ii) mirroring the negotiated Article 6 formats

for unique identifiers (Japanese Bankers' Association) and (iii) using the CUSIP format (BeZero).¹¹

Responses also highlighted the need to carefully test and refine the proposed model for the issuance of unique identifiers. Most respondents who engaged with the proposed issuance process focused on the proposed role of the Suitably Qualified Body (SQB), as set out in the Technical Consultative Note, that would be responsible for issuing project and batch level identifiers before credit issuance. Adelphi noted that “involving SQBs in willing pilot jurisdictions can promote high standards of quality control.” Another anonymous respondent considered the proposed issuance process “practical” and “clearly defined”. CAD Trust commended the push “to use existing national arrangements (e.g., DNAs or National Numbering Agencies) for overseeing the implementation of unique IDs in a particular jurisdiction and tracking their issuance.” CAD Trust did, however, note that SQBs would need to verify that project identifiers are unique, and that this process is not straightforward – a concern echoed by CAP-A and Egypt’s Financial Regulatory Authority. CAR additionally pointed to the potential for bureaucratic bottlenecks and delays in the proposed issuance proposes. The Secretariat acknowledges these concerns and recognises that the proposed issuance process may need to be refined in response to learnings from the piloting and implementation phase.

¹¹ Further detail on the Global Carbon Trace Program can be found [here](#).

CDSC response:

Responses showed broad support for the principle of project and batch-level identifiers, with many respondents supporting optional credit identifiers. Based on the balance of responses, it is proposed to retain the overarching structure of the proposed unique identifiers at this stage.

There is recognition of the broad range of feedback received on the proposed format, which is designed to mirror ISINs in securities markets. Due to the potential benefits from a fungibility and financial market connectivity perspective, it is proposed to continue with the proposed format during a piloting and implementation phase, noting that it may require refinements and adaptations when applied in practice. This includes trialling and testing this approach within the International Standards Organisation (TC322, WG/5), who are considering the possibility of standardising some aspects of carbon credit data.

While three alternative suggestions were carefully considered, these options have additional technical drawbacks that motivate continued testing and refinement of the format proposed in the Consultation. Specifically:

- **CUSIPs** are primarily geographically restricted to North America. As the development of the Data Model is grounded in principles of accessibility and multilateral input, the Secretariat considers it inappropriate to apply a format only applicable to a specific region.
- **Global Carbon Trace** is a registry and traceability platform, with an accompanying crediting program (like Gold Standard or Verra). The Secretariat did not consider it appropriate to require connection to a specific platform for unique identifier issuance, as the proposed SQB model is deliberately designed to afford jurisdictional authorities policy autonomy and oversight over issuances.
- The **Article 6** formats differ substantially depending on the type of Article 6 instrument (specifically, Article 6.2 ITMOs, Article 6.4 ERs, Article 6.4 MCUs).¹² The Data Model is designed subject to an overarching policy principle of respect for multilateral and UNFCCC-negotiated outcomes. The Secretariat therefore does not consider it appropriate to recommend that one specific Article 6 format be applied to all credits on the market, and in the Technical Note accompanying the consultation, suggested instead a mapping process that SQBs would undertake between the proposed unique identifier format, and the specific UNFCCC format[s].

Finally, the feedback on possible implementation challenges and the proposed role for SQBs is welcomed. As a next step, there will be broad and open engagement with partners interested in piloting the Data Model – in particular governments and registries – on developing and refining a smooth and practical issuance process throughout the piloting period. The proposed issuance process will also be trialled, tested and refined with ISO

experts, who will be asked to bring to bear their experience in managing a similar process for the issuance and maintenance of ISINs.

1.3.2 Project and sub-project tables (including treatment of sectors and methodologies)

Consultation Questions:

- The Data Model proposes using ISICs Division level (01-99) to capture information related to the sectoral classification of the project. Does the ISIC Division level provide sufficient granularity for capturing key differences between project types? Are there any alternative internationally recognised and widely applied classifications of economic activity that could also be considered?
- Are the picklist values provided for ‘project type’ and ‘methodology’ in the Data Model comprehensive? Are there any methodologies that you do not think can be categorised into one of the project types?
- Do you have suggestions on what process could be followed for maintaining the project type and methodology picklists? Feedback on methodologies approved by national regulators or carbon crediting programs is welcome.
- Do you have a view on the suggested approach to the following design choices outlined in Section 4 of the Note? Specifically, capturing the fact that a single project might deploy multiple methodologies or span multiple regions using sub-project tables (see Section 4.1.1 of the Note)?
- The Data Model is designed around a principle of data normalisation – which requires that every cell has a unique value, and every record be unique wherever possible – however, within a given project, there may be data fields that require capturing multiple values. For example, a single project may deploy multiple methodologies. To address these challenges, the Data Model uses picklists wherever possible, and for key project-related variables introduces a Sub-Project Information data table, to capture variables that can be recorded more than once within a single project. Do you agree overall with this approach? Do the variables captured in the Sub-Project Information data table namely, ‘project type’, ‘methodology’, ‘sector’, and ‘mitigation type’, adequately capture data fields within the same project that may require recording multiple values?

¹² PACM allows for two new sub-categories of instruments to be traded: Article 6.4 Emissions Reductions (ERs) and Article 6.4 Mitigation Contribution Units (MCUs). Host countries must apply a corresponding adjustment (CA) to Article 6.4 ERs – i.e., upon authorising the transfer under Article 6, they are required to subtract the emissions reductions associated with the transfer from their NDC, which is then added to the NDC of the buyer country. CAs are not applied to Article 6.4 MCUs. PACM also introduces a third subcategory of instrument for legacy credits from the Clean Development Mechanism. More details are available in UNFCCC CMA [decisions](#).

Summary of responses:

Responses to these questions touched on two related issues – the specific choice of picklists for sectors, methodologies and project types, and the structural relationship between methodologies, sub-projects, projects and sectors in the Data Model.

Most respondents did not engage specifically with the choice of sectoral classifiers – but those that did were, on balance, supportive. The consultation version of the Data Model proposes using ISICs Division Level (01 – 99) as its primary sectoral classifier. This choice was motivated by the need to strike the right balance on granularity, as well as to choose a classification system with multilateral oversight and legitimacy. Responses to this choice were positive:

- **Adelphi Consult**, an **advisory** company, supported this approach: “It provides a suitable level of granularity to capture key differences between project types, enabling effective sectoral classification while maintaining simplicity and consistency across projects”
- **CAD Trust** noted the benefits of alignment with ISICs for other applications but cautioned that sectoral classification often depends on the final use case for the Data Model. They noted that in their recent V2.0 update to their own data model, they use the common nomenclature developed for the Article 6 AEF.
- A project developer, however cautioned that ISICs were not designed with carbon markets in mind, and suggested using IPCC sectors instead.

While respondents agreed with the current version of the picklist for the Methodology field, they suggested alternative approaches to maintaining the field to ensure it remained comprehensive. Version 1,0 of the Data Model allowed users to choose a methodology from a picklist that would be regularly updated to contain all existing methodologies in the carbon credit market. Some respondents supported an approach that allowed for an expansive set of methodologies to be captured in the Data Model, and for additional inputs from national regulators to be considered in the picklist. Adelphi suggested that the body responsible for maintaining the Data Model could allow competent authorities to submit updates to the proposed picklist for methodologies through a web-based form. CAD Trust noted that in their updated data model V2.0, they produce a separate methodology table, where additional methodologies can be entered as freeform text. They suggested that this approach reflects the reality that the universe of methodologies changes frequently. They additionally flagged the potential administrative burden of maintaining a picklist of all possible methodologies.

Responses were inconclusive on picklist proposed for ‘project type’. The consultation version of the Data Model included a single picklist for carbon crediting projects, based on the CAD Trust 1.0 data model. Adelphi considered the choices “comprehensive and exhaustive” but suggested the inclusion of an “energy efficiency” category of projects. However, CAD Trust noted that in its updated data model V2.0, they have shifted to using the Article 6 common nomenclatures rather than their original picklist. A large project developer additionally noted that the project-type picklist in the project table themselves may not capture regionally specific ecology (e.g., wetlands) or nuances in how reforestation projects are classified. This feedback was echoed by BeZero, a rating agency, who suggested using their project type classification, which has been developed over several years with market participants.

Turning to feedback on how these variables relate to each other structurally in the Data Model, there was overwhelming support for the addition of a ‘Sub-project’ table, to capture instances of multiple methodologies being associated with the same project. Version 1.0 of the Data Model included a ‘Sub-project’ table to capture instances of multiple methodologies being associated with the same project. Supportive responses came from capacity builders (eg: CAP-A), advisory firms (eg: Adelphi, Carbon Direct), market infrastructure firms (many of whom wished to remain anonymous), project developers (Equilibrium, Greenery INC) and investors. Respondents generally noted the need for the Data Model to capture multiplicity and supported the proposed approach for doing so. For example, a market intermediary noted that: “The Sub-Project Information table is the right way to handle multiplicity (project type, methodology, sector, mitigation type) while keeping the core tables normalized and machine-readable”. Several respondents did, however, feel that the purpose of the sub-project table could be clarified better in notes and metadata, even if its utility was broadly accepted.

Feedback was more mixed on how projects, methodologies and sectors relate to each other in Version 1.0 of the Data Model. Version 1.0 of the Data Model included single values for ‘project type’, ‘methodology’ and ‘sector’ in the same table. This means, in practice, that although multiple values of these variables could exist within an individual *project* (e.g., a carbon crediting project with fuel switching and energy efficiency measures), it was *not* possible for one methodology to apply to multiple project types or sectors at the sub-project level. Some respondents noted that single project types can apply to more than one possible sector, while Abatable additionally questioned the design choice to enforce a single project type per methodology at the sub-project level. They pointed out that project types within a given methodology can be overlapping – for example, efficient cookstoves and renewable energy. CAD Trust also pointed out that the Data Model in its current form could

not capture instances where multiple projects of different types would be included in the same programme of activities.

CDSC response:

The feedback on these design questions is addressed in turn below:

Picklists for sectoral classifiers: in view of the inconclusive feedback on this question, Version 2.0 of the Data Model will retain the current approach of using ISICs Division Level (01 – 99), given the positive feedback received on its level of granularity. This classification system has the additional benefit of being maintained by the UN, which provides multilateral legitimacy. This choice will be carefully tested during the piloting and implementation phase with market participants and refined as needed.

Picklists for project types: this picklist will be updated to match the UNFCCC ‘Activity Type’, per the Article 6 Common Nomenclatures to promote alignment with Article 6 reporting guidance and CAD Trust V2.0.

Picklists for methodologies: In line with feedback received, Version 2.0 of the Data Model will include a new data table for methodology, which allows registries and crediting standards to input their own methodologies, reducing the maintenance burden and aligning with the CAD Trust v2.0 data model. While the Secretariat considered the suggestion to allow submissions of additional methodologies to be maintained through an online form, it was ultimately decided that this would continue to impose an undue administrative burden on the body that maintains the Data Model going forward.

Sub-project table: In view of the broad support articulated for the Data Model’s handling of multiplicity, Version 2.0 of the Data Model will retain the ‘Sub-project’ table as presented. Further guidance will be added in the data dictionary to advise on the purpose of the sub-project field.

Relationships within the sub-project table: To address the feedback that one project type or methodology might apply to multiple sectors, Version 2.0 of the Data Model will include a new ‘Sector’ table. However, it will be important from a data normalisation perspective to encourage users to input one methodology per project type at the sub-project level. To accommodate edge cases of more than one project type applying to a single methodology, the sub-project table could be filled out more than once.

The specific feedback on capturing programs of activities is addressed in Section 1.3.3 below.

1.3.3 Program type

Consultation Questions:

- The activities that generate carbon credits can range from individual projects to programs that cover entire jurisdictions or sectors (see Section 4.2.2 of the Note for further details). Does the Data Model adequately reflect the possible types of programs or is more granularity needed?
- Carbon crediting projects can theoretically span multiple geographies – however, emission reductions typically need attribution to single countries. The Data Model therefore recommends splitting these projects into two entries, one for each country. The two entries would have the same unique identifier, and their relationship would be captured in the ‘related projects’ data field (see Section 4.2.3 of the Note for further details). Does this approach make sense for balancing the need to attribute emissions reductions to single countries, against the need to avoid multiplicity of responses in the Data Model? Are you satisfied that the ‘related projects’ field is sufficient to identify these multi-country projects?

Summary of responses:

A program is an umbrella framework that allows multiple similar projects that reduce or remove emissions to be registered and implemented together, making it easier to scale and reducing transaction costs compared to registering projects individually. Programs can be jurisdictional or sectoral in nature, or they can be ‘programs of activities’ (PoAs) where projects can be grouped together across different methodologies, sectors and jurisdictions.

Version 1.0 of the Data Model captured these cases through the ‘program type’ data field, which allowed users to select from: standalone project (not part of a program), scaled-up approach (the umbrella or parent program), or nested project (one of several projects within the umbrella). An additional ‘related projects’ field (free text) was also proposed to capture project relationships.

However, feedback indicated that the approach taken to programs did not sufficiently capture the different types of programs, nor the nuances of how programs and underlying projects are related. CAD Trust noted that it is “unclear how the relationship between multiple projects in a program is linked together. If this is handled by a single data field in the project table, it may not adequately capture the complexity of program-level relationships.” This was reinforced by Adelphi’s feedback which stated that the “Programmes of Activities (PoAs) approach cannot be correctly reflected. The PoA structure would require a hierarchy between the PoA (framework-project, as parent) which contains the general, common structure, and the specific sub-projects (for example implemented in

different regions / countries) as children. At the moment, related projects from the same PoA can be listed in ‘Related Projects’, but without the possibility to connect them to a common parent structure via reference key.” Similar feedback was provided by the OECD through the CDSC’s Policy Working Group (PWG).

CDSC response:

Version 2.0 introduces a dedicated ‘Program’ data table to record different types of programs and define the links between projects nested within them, including across multiple jurisdictions, to enable more accurate bottom-up carbon accounting.

The ‘related projects’ field will be retained but used instead to note that a project has transitioned from one carbon crediting standard to another (e.g., from CDM) enable traceability over time.

1.3.4 Location data

Consultation Questions:

There is increased recognition that precise geographical boundaries are required for accurate emissions accounting. The Data Model therefore suggests a multi-tiered approach to recording location data, including spatial data specifications (see Section 4.2.6 of the Note for further detail). Is this approach sufficient? Are there additional standardised geographic data indicators that you would like to see included in the Data Model?

The Data Model does not propose a specific file format capturing geographical boundaries (see Section 4.2.6 of the Note). Do you agree with this approach, and if not, would you recommend a particular file type to be included?

Summary of responses:

Version 1.0 of the Data Model captured five fields related to project location, within the ‘project design’ table:

- *country* to specify jurisdiction in which project is located – using ISO 3166 Alpha 2 codes
- *subnationalJurisdiction* to specify state/region/other subnational jurisdiction in which project is located – using freeform text
- *projectLatitude* to specify single latitude coordinate point of project
- *projectLongitude* to specify single longitude coordinate point of project

- *projectGeographicBoundaries* to provide URL link to file containing full geographic boundaries – no specific file format was specified

Detailed feedback was received on these project location fields – both related to the granularity of location information captured at the project level, and how these fields are structurally embedded in the Data Model.

On the specific location fields to be captured, several points were raised:

- **Sub-national jurisdictions:** Minimal feedback was received on the *country* variable, however CDOP and IEEFA suggested that subnational jurisdictions could be further standardised. CDOP specifically noted that their schema employs ISO 3166-2 codes for country subdivisions.
- **Use of single coordinates for projects:** Respondents (including BeZero and CAD Trust) cautioned that the approach of using a single co-ordinate to capture project location could quickly become outdated as projects are increasingly spread across multiple locations. CAD Trust noted that their Data Model V2.0 captured this reality more systematically through a separate ‘location’ table. BeZero and CAD Trust additionally noted that project locations need not be overlapping. Carbon Future offered similar feedback specific to durable removals, where carbon may be captured in one location and moved to another for storage. They pointed out that the chain of custody for durable removals is not accurately captured in the current project location field.
- **File types:** CAD Trust recognised that, from an accessibility perspective, there is benefit in not limiting eligible file types for location boundaries. Adelphi voiced similar feedback. However, a large project developer flagged that there is a significant information gap on project boundaries and suggested defining an approved set of file types to fill this gap. BeZero strongly recommended using shapefile-compatible formats (e.g. GeoPackage .gpkg, GeoJSON) because “these formats are widely accepted and interchangeable”. Multiple respondents suggested aligning with the CDOP data schema on this question.

Finally, a large project developer suggested that the Data Model should capture much more granular fields relevant to specific project types: “For instance, for nature based related project types, we would expect a minimum set of boundaries to be covered such as project area, reference / donor pool / control area, leakage area, planted areas, etc.” They noted, however, that “for the first version of the data model, the multi-tier approach is sufficient.”

CDSC response:

Version 2.0 of the Data Model will include a new 'Location' data table. This has the benefit of more cleanly allowing multiple locations per project and aligning with the CAD Trust V2.0 approach. This table can be filled out more than once, to capture projects with multiple, non-overlapping locations.

Within this table, Version 2.0 of the Data Mode will incorporate the following adjustments to the fields capturing project location:

- Country subdivisions: There was broad agreement in the feedback that subnational jurisdictions would benefit from greater standardisation in the Data Model. Version 2.0 of the Data Model will include a new field entitled 'location subdivision', with a picklist for the ISO 3166-2 country subdivision codes. This additionally has the benefit of aligning with CDOPs location data schema.
- Location granularity and file types: There is recognition that single GPS coordinates do not offer sufficient precision for project location, and that there are benefits to encouraging the use of a standardised file-type for project location boundaries. However, respondent feedback also indicated that there are the benefits to remaining file type-neutral in the interests of accessibility. To balance these considerations, Version 2.0 of the Data Model will – following the suggestion of BeZero and others -retain a file type-neutral field for map files of any format, but additionally include a field for GeoJSON files as well as an accompanying data field detailing the type of GEOJSON file (e.g., point, polygon, multipolygon) These choices will be carefully tested during the piloting and implementation phase.
- Removals chain of custody: To more fully capture the chain of custody associated with durable removals, the location data table will include a field for '**Location type**'. This field will capture – through a picklist with options 'Project development location' and 'Downstream activity location'- whether a location is part of the crediting project or other activities downstream..

Finally, Version 2.0 of the Data Model will not include granular location information specific to project types at this stage, as these would go beyond the requirements of a common foundation. The question of project type-specific fields at a granular level is additionally addressed for MRV/dMRV, in section 1.3.8 below.

1.3.5 Eligibility labels

Consultation Questions:

- Do you have a view on the suggested approach to the following design choices outlined in Section 4 of the Note? Specifically, applying Eligibility labels for credits

that policymakers have deemed eligible for use in carbon pricing mechanisms (see Section 4.2.8 of the Note).

- Buyers of credits have indicated that eligibility labels - which identify credits policymakers have deemed eligible for limited use in their carbon pricing systems - are of value to them and will help to simplify purchasing decisions. Do you agree with including these labels in the Data Model?
- The Data Model includes individual fields for eligibility labels for each carbon pricing mechanism because some credits may be eligible for more than one scheme. This is why a single picklist of eligibility labels is not feasible. The Data Model currently includes individual eligibility labels, recorded in the project, sub-project or batch tables as appropriate. Do you agree with this approach, or are there more efficient alternatives? Do you foresee any challenges in applying this approach?

Summary of responses:

There was broad consensus that factual, regulator-defined labels enhance transparency, with more than 20 stakeholders expressing support. LSEG, for example, noted that “the fact that the model captures these layered components of carbon credits is of substantial value to data standardisation, as this is not well-captured through the current ad hoc reporting approach.” Similar views were echoed by CAP-A, ISDA, and ICVCM, all of whom emphasised that labels being recorded in a standardised fashion is important for carbon credit market clarity and transparency.

Some respondents did, however, raise considerations on the governance and maintenance of eligibility labels, as well as how and where they are recorded in the Data Model. This includes feedback on:

- **Preventing misuse:** one policymaker, as well as a project developer (Greenery INC) and an exchange (JSE), flagged a risk that market participants could self-assign labels. They additionally stressed the need to avoid pre-empting substantive policy decisions on eligibility by regulators, and in JSE’s case, the importance of linking labels to legal references and effective expiry dates. A multilateral stakeholder suggested that the Data Model not include eligibility labels, as they could potentially be misleading if the information was not up to date or accurate, and users should instead seek official sources for such information.
- **Level of application:** Version 1.0 of the Data Model applies labels at their highest possible level of aggregation (project, batch or methodology), depending on the requirements imposed by the relevant scheme. CAD Trust suggested that labels should in general be applied at the unit (credit) level, following the approach used by

incumbent registries. ICVCM requested that their CCP label be applied at the batch (not methodology) level, to future proof the Data Model as CCP eligibility criteria may change over time.

- **Structural considerations:** The consultation version of the Data Model includes a separate data field for each compliance scheme for which credits may be eligible (i.e. a separate data field for each “eligibility label”)—for example, one for the South Africa carbon tax and another for the Korean Emissions Trading System. In addition, these labels are recorded in the consultation version of the Data Model in separate tables to match the level at which they apply in practice. For example, the South Africa Carbon tax label is captured in a project label table, as eligibility is decided at the project level, while the Chile carbon tax label is captured in a more granular batch label table, to reflect that in Chile, vintage is additionally a determinant of eligibility. These structural design choices elicited contrasting feedback:
 - Several stakeholders supported the proposed multiple-label approach, emphasizing that only this structure can adequately reflect projects qualifying under multiple criteria. One market intermediary, for example, observed that “separate label tables at project/sub-project/batch levels reflect real-world differences.”
 - However, six stakeholders in different positions in the value chain, (CAD Trust, BeZero, Adelphi, LSEG, a project developer, and a trading platform) supported a picklist approach. They argued that multiple-label tables risk introducing unnecessary overhead and costs, and that each new label would require model expansion.

In addition to the above, two respondents – one financial institution (Standard Bank) and another governmental stakeholder – supported the inclusion of eligibility labels, but noted that in some jurisdictions, ‘eligibility’ and ‘approval’ are separate steps. Standard Bank flagged, for instance, noted that under the rules for South Africa’s carbon tax, “... a project can be eligible, but a Project Developer needs to apply to the administrator for approval before they are actually eligible”. In contrast, schemes like Singapore’s carbon tax define *ex ante* eligibility rules, and credits meeting these are automatically eligible to meet a share of compliance obligations.¹³ This has implications for how the labelling variables are named, and what picklists are recorded for them:

- Version 1.0 of the Data Model appended an ‘eligibility’ suffix to all label names – eg, ‘southAfricaCarbonTaxEligibility’. This does not accurately reflect schemes with an additional stage of approval.

¹³ National Climate Change Secretariat (Singapore), [Carbon Tax](#) (2025)

- Version 1,0 of the Data Model additionally applied a uniform picklist to all labels, with the following options: ‘not applied’, ‘under consideration’, ‘approved’, ‘rejected’, ‘undergoing reassessment’, ‘suspended’, or ‘withdrawn’. This, conversely, captures cases like South Africa’s carbon tax with a stepwise process for approval, but not cases like Singapore’s carbon tax with *ex ante* eligibility requirements.

CDSC response:

Overall, the strong support for eligibility labels is welcomed. On the specific concerns regarding misuse and governance, per disclaimers on use in the Technical Note and Data Model, the labels are not intended to be self-assigned. Piloting will further explore approaches to governance and preventing misuse. No further edits are therefore proposed at this stage. However, a more comprehensive plan for long-term governance of the Data Model will need to be developed during the piloting phase, and the management of eligibility labels will need to feature as part of that plan.

The requests for labels to be presented as a picklist, to minimise computing requirements and simplify the Data Model, was also considered given the relatively high computing burden imposed by the current structure. Ultimately, however, the fact that multiple labels can apply at once, and fungibility benefits of applying these at the highest level of disaggregation still present a persuasive rationale for retaining the current structure. As such, Version 2.0 of the Data Model will retain the current structure but will be carefully tested during the piloting phase with market participants.

The specific request to implement eligibility labels for ICVCM CCPs at the batch level has been actioned in Version 2.0 of the Data Model.

In addition, the nuance provided by Standard Bank and others on the difference between ‘eligibility’ and ‘approval’ in some jurisdictions is welcomed, and Version 2.0 of the Data Model will implement the following changes:

- For schemes with separate eligibility and approval processes (eg: South Africa), the existing picklist will be retained, but variable names will be adjusted to reflect that the end state is approval, *not* eligibility. In other words, the label for South Africa’s carbon tax will now read ‘southAfricaCarbonTaxApproval’
- For schemes with *ex ante* eligibility requirements, variable names will remain unchanged – however, the updated Data Model will now include binary picklists in such cases, denoting ‘Eligible’ and ‘Not Eligible’ as the only options.

1.3.6 Retirements

Consultation Question:

Do you have a view on the suggested approach to the following design choices outlined in Section 4 of the Note? Specifically, capturing the purpose of retirement and potential picklist values for this data field, if a picklist is desirable (see Section 4.2.9 of the Note)

Given the variety of use cases of credits, the Data Model recommends a free-form text field to capture the purpose of retirement. Do you agree with this approach, or would you prefer to see additional standardisation within the Data Model via a picklist? If incorporating a picklist is preferred, what values would you suggest including in the picklist?

Are there further data fields that are needed to capture the ultimate ‘beneficiaries’ of retirements (if, for example, credits are retired by a broker or market marker on behalf of someone else)?

Summary of responses:

More than 20 respondents expressed strong support for incorporating the purpose of retirement in the Data Model. For example, BeZero responded that “it would be extremely helpful for market analysts to have “retirement purpose” data in a more standardised format”, while Adelphi noted that “capturing the purpose of retirements is a valuable feature that can greatly aid data aggregation and analysis.”

However, views diverged on implementation. Some (e.g., Global CarbonTrace, CAD Trust) favoured the flexibility of free-text input, noting that purposes may evolve over time and multiple purposes may need to be recorded. Others (e.g., Equilibrium, ICVCM) advocated for a standardised picklist to strengthen data quality, comparability, and consistent terminology across carbon credit markets. Several respondents proposed a compromise: a picklist of common categories complemented by an 'Other – specify' option.

Finally, respondents also welcomed the inclusion of an optional field to differentiate between the retiring party and the ultimate beneficiary, particularly in voluntary markets. Caution was raised, however, regarding the need to respect registries’ disclosure practices as well as the need to consider broader carbon credit market guidelines (e.g., ICVCM’s CIWPs).

CDSC response:

The consultation showed broad support for a standardised way to capture purpose of retirement, even if respondents differed on whether to include this as freeform text or as a picklist – and in the case of a picklist, how granular that picklist should be.

To balance this diversity of feedback, Version 2.0 of the Data Model adopts a hybrid approach. The ‘Purpose of Retirement’ field has now been updated to include a standardised picklist of four, high-level options: voluntary reasons, compliance reasons, both, or cancellation. ‘Both’ refers to cases of voluntary participation in a compliance scheme (eg: participation in the CORSIA pilot). However, two additional freeform text fields have been added to capture additional nuance on the purpose of retirement and, in the case of credits being retired against compliance obligations, the name of the relevant compliance scheme.

There was additionally widespread agreement among consultation respondents on the need to capture third-party retirement beneficiaries. A new field has been added to Version 2.0 of the Data Model to allow this to be captured as freeform text.

These elements will be reviewed in consultation with stakeholders during the pilot phase.

1.3.7 AEF integration

Consultation Questions:

- Do you have a view on the suggested approach to the following design choices outlined in Section 4 of the Note? Specifically, integrating the Authorized Electronic Format (AEF) for Article 6 reporting (see Section 4.1.3 of the Note)
- The Data Model contains the following categories of tables: Baseline tables related to the carbon credit lifecycle; Article 6 tables replicating the Authorized Electronic Format (AEF); Illustrative auxiliary tables and A metadata table. This structure is detailed in Section 3.2 and illustrated in Figure 7 of the Note. Given the illustrative nature of the auxiliary and metadata tables, and that the AEF is governed by the UNFCCC, please provide feedback on the baseline tables. Do the baseline tables link to each other appropriately, and are primary and reference keys through which they link appropriately designed?
- Would it be helpful for the Data Model to more fully integrate AEF data fields in other baseline tables? Finally, where AEF fields are included in the baseline Data Model, have they been recorded in the correct place?

Summary of responses:

Respondents welcomed the Data Model's integration of Article 6 reporting fields.

Consistent with the SFWG's steer to respect negotiated UNFCCC outcomes and align with Article 6 agreements, there was widespread support for the inclusion of Article 6-related fields in the Data Model. Stakeholders including CAP-A, ICVCM, and ISDA, emphasised that this approach reduces duplication and accelerates Article 6 reporting, provided it is properly managed.

While all respondents that engaged with this question welcomed the decision to embed Article 6 reporting fields in the Data Model, some offered feedback on how these fields are structurally embedded in the data model. Version 1,0 of the Data Model replicates the tables in the UNFCCC's AEF for Article 6.2 - as set out in the COP29 Agreements - exactly – i.e., as separate tables annexed to the main Data Model, consistent with each table in the AEF.¹⁴ There was contrasting feedback on this choice:

- One market intermediary supportive of this approach highlighted that the model's "replication of the Article 6.2 AEF in separate tables with mapping guidance was useful for jurisdictions reporting into the International Registry while keeping the baseline life-cycle scope clean."
- However, other respondents (e.g., Anthesis, Japanese Bankers Association, a major project developer) recognised the risk of duplication posed by this approach and suggested integrating the AEF fields – where appropriate – into the primary issuance tables in the Data Model.
- CAD trust additionally noted that the AEF tables do not all link to each other with primary and reference keys - the Data Model only links Credit Issuance to Submission, while the Authorization links only to Holdings.

Respondents recognised, however, that any embedding of AEF-related fields into the core Data Model will take time. There was broad support for a cautious approach in the near-term, to avoid destabilising the core model during the piloting phase.

¹⁴ See decisions on AEF [here](#).

CDSC response

While the positive feedback on the Data Model's alignment with Article 6.2 reporting requirements is welcome, there is recognition that the full replication of the Article 6.2 AEF, as separate tables in the Data Model, comes with some risk of duplication. Given the critical importance of reflecting Article 6 reporting fields as faithfully as possible (as mandated by the SFWG and UNFCCC Secretariat) no structural changes to this section of the Data Model are proposed at this stage.

Version 2.0 of the Data Model will retain the AEF tables as separate from the baseline. Their applicability to national emissions accounting will be tested and iterated during the pilot. As Article 6 processes mature, integration of the AEF tables into the core issuance tables may be considered.

Close collaboration with the UNFCCC Secretariat in developing future drafts of the Data Model will continue, including faithfully reflecting the Paris Agreement Crediting Mechanism (Article 6.4) registry requirements after these are finalised.

1.3.8 MRV/dMRV

Consultation Question:

The Data Model is limited to MRV fields that are standardisable across project types, noting the potential for future enrichment of the resource in the future (see Section 4.2.7 of the Note for further detail). What additional fields, including Digital MRV (dMRV) fields, could be prioritised for future iterations of the Data Model, that are standardisable across different project types? How can standardisation across project types be encouraged?

Summary of responses:

This issue did not receive as detailed responses as other design choices in the consultation version of the Data Model. Responses that were offered were broadly positive and recognised the constraints of standardising mRV fields across project types. Specifically:

- **IETA and an intermediary** noted that the data model provided an appropriate level of baseline MRV fields, noting that “the approach to MRV is appropriately minimal and cross-project”.
- **A wider range of respondents** confirmed that standardising fields for MRV across project types is challenging, and beyond the requirements of a recommended common foundation model:

- **CAD Trust** noted that “Different project types and methodologies will have different parameters for their MRV reports, and standardisation will need further discussion, including with major independent crediting programs and governments currently undertaking dMRV projects.”
- **Hedera Foundation** echoed this sentiment, but additionally suggested cross-industry collaboration, including with practitioner-led efforts like CDOP, to build out a standardised set of MRV and dMRV fields over time.

CDSC response:

There continues to be a recognition of the short-term challenges of standardising variables related to MRV and dMRV, given how specific these are to different project types. Accordingly, no immediate changes will be made to Version 2.0 of the Data Model. The piloting phase will, however, prioritize this as a key area for future model development, and will engage with stakeholders and standardisation initiatives over the medium term.

1.4 Adoption, Implementation and Piloting

1.4.1 Adoption

Consultation Questions:

- Are the adoption levers identified in Section 5 of the Note comprehensive and appropriate? Are there additional levers that could support model adoption?
- Are there specific barriers to adoption that you believe the pilot phase should anticipate and seek to address?

Summary of responses:

Respondents broadly agreed that the Technical Note had outlined the key levers that could drive broad-based adoption. They highlighted that further engagement with market participants – including through piloting – would be needed to support refinement and adoption of the Data Model.

Respondents agreed that it would be important to engage with key parts of the carbon credit ecosystem to fostering voluntary uptake, including:

- **Registries:** Many respondents saw fostering uptake of the Data Model by registries as key given their critical role in the system supporting project development and credit registration, steps where much of the data is originated. However, challenges were also well recognised; registries face constrained resources and have existing technology stacks and data approaches (though some of these are in the process of being updated).

CAD Trust noted steps they had taken to support registries in mapping the data model supporting their meta registry to registries own models, as a precursor to uploading registry data to their platform. A large project developer also noted that there could be scope to draw on the Data Model in development of upcoming Article 6.4 or Paris Agreement Crediting Mechanism (PACM) registry.

- **Project developers:** Respondents noted it would be important to keep in view the role of project developers, who play an important role at the start of the lifecycle. Project developers could benefit from reduced frictions around registration with time, but care was needed in fostering use of the Data Model to avoid frustrating development and innovation which were much needed for the carbon credit market evolve and grow.
- **Buyers:** That buyers could create a pull factor was well recognised, including the value of engagement with buyers' coalitions.

Respondents also noted that the signals sent by, and actions taken by, policymakers matter. Most directly policymakers and regulators could use the Data Model as a reference for national or sub-national registry development. This use case was seen as particularly relevant at this time given that several countries are in the process of developing their registries and could be relevant for pilots. Some respondents recognised that policymakers and regulators could also encourage use of the Model, and there were several references to the importance of rules set by market regulators. The Technical Note also considered encouraging the use of the Data Model in relation to credits authorised under Article 6. There was a mixed response to this suggestion; some respondents - such as the MDB Working Group on Article 6 - suggested a common data model could be helpful in reducing cost and complexity of Article 6 reporting and improve interoperability with other carbon credit market segments. On the other hand, a policymaker expressed caution, feeling the Data Model had potential to cause confusion relative to international arrangements and national implementation.

A consistent theme in the feedback was that achieving data standardisation in practice requires the Data Model pilot to actively engage with other relevant initiatives (CAP-A, Gold Standard, IETA, MDB Article 6 Group, Sylvera). CAD Trust harmonises data using a 'common denominator' approach - maintaining alignment with registries' existing methods and standardising fields only when practices diverge. Respondents welcomed the policymaker lens and insight from financial sector best practice provided by the Data Model, and suggested technical alignment of these two approaches could support better carbon credit market functioning overall. Similarly, engagement with CDOP – which aims to standardise a larger set of data fields relevant to more sophisticated users of carbon credit data such as specialised ratings agencies - was encouraged. Sylvera, a co-chair of the CDOP

initiative, noted that their “data requirements go into more depth to allow for project-level due diligence (e.g. requesting data on co-benefits, carbon accounting boundaries, financial modelling), which are not covered in the [Data Model] [...] The pilot phase is a great opportunity to [...] mitigate confusion amongst market participants and users, and catalyse widespread adoption of common data practices in carbon markets.”

In addition to engaging with other data standardisation initiatives, respondents highlighted emerging and ongoing standard setting processes which could draw on the Data Model with time. Organisations and processes mentioned include:

- **Sector standard setters and industry organisations:** The important role of voluntary sector standard setters such as ICROA and ICVCM was recognised by some particularly the potential for these standard setters (and perhaps ratings agencies) to integrate factors relating to data as one facet of carbon credit quality and integrity.
- **International Standards Organisation (ISO):** Several respondents noted planned work by ISO, which has consulted on developing a standard for carbon credit data. Respondents encouraged the CDSC to engage in that process to ensure the progress made through the Data Model was reflected in the ISO work. The CDSC Secretariat participated in ISO’s TC322 WG/5 meetings (10 – 15 October 2025) and will continue working with ISO to ensure coordination, particularly on the topic of unique identifiers, where ISO’s deep expertise will be critical to the success of the proposed approach.
- **Disclosure frameworks:** That national and international disclosure requirements can play a role at the end of the lifecycle – for the retiring entity – was noted by several respondents. It was noted that the ISSB standards set high-level expectations around disclosures on use of carbon credits, and more specificity may be found in a small number of jurisdictions setting more detailed requirements.

In closing, respondents made a series of useful suggestions around enabling factors that could support adoption through time:

- **Governance:** Clarity on the overarching approach to governance and its inclusivity – across a wide range of countries and carbon credit ecosystem participants – was highlighted as important. The MDB Article 6 Group further noted that it was important to continue to involve G20 countries as well as engage with a broader set of EMDEs.
- **Flexibility:** Several respondents noted that it was important to ensure the Data Model was not too complex and was able to accommodate different starting conditions in terms of system maturity and legal systems (including by an EMDE regulator).

- **Digital infrastructure readiness:** Respondents with direct experience of developing systems and workflows for the carbon credit ecosystem, recognised the need to show both that the Data Model could be use with existing infrastructure, without redundancy and excessive cost, while also accommodating future use cases, including jurisdictions and carbon credit market participants seeking to adopt advanced technologies such as DLT or blockchain. Several highlighted the importance of open-source solutions and APIs to enable faster integration for smaller registries and project developers, supported by accompanying documentation, training, and certification programs to facilitate implementation by data managers.
- **Regional groups and capacity building:** Respondents, particularly those based in or supporting EMDEs, thought that the Data Model could be useful to countries and other stakeholders looking to develop their emissions accounting approaches and registry architecture. An important means to support adoption would be to engage key providers of technical assistance – including the World Bank’s Partnerships for Market Implementation (PMI) – as well as key regional groups to incorporate the model into the extensive technical assistance and capacity building that is provided to support carbon pricing and carbon credit market architecture, including Article 6 readiness.¹⁵

CDSC response

There is clear recognition that registries, project developers and buyers will be key stakeholders not only in testing and improving the Model during the piloting phase, but in cascading adoption throughout the carbon credit ecosystem after piloting. As such, exploring the feasibility of incorporating the Data Model into existing registry approaches and data systems without undue disruption and cost will be a focus in coming months. Enabling factors raised by respondents will also be considered during the piloting phase.

The piloting phase will also involve dedicated focus on policymaker engagement, including on how the Data Model may be used in national registries that choose to pilot this resource. Given the work is for voluntary adoption, the Data Model would not directly impact disclosure frameworks but could help to improve the data ecosystem overall and could be referenced by international and national policymakers if they so wished.

¹⁵ Regional groups include for example, for Africa, the West African Alliance on Carbon Markets and Climate Finance, and regional economic communities like SADC, ECOWAS and EAC.

Alignment with existing data standardisation initiatives has already commenced; Version 2.0 of the Data Model has been largely mutually aligned with CAD Trust, and CDOP has also expressed appetite to use the Data Model's common foundation as a basis from which to build more detailed guidance.¹⁶ Given dependencies on other carbon credit ecosystem participants for certain recommendations - regulators in the case of unique identifiers and registries in the case of a shift to batch-level recording of data – CAD Trust cannot at this stage incorporate these recommendations, but work is underway to set out a longer term glidepath for technical alignment, and for cooperation on future evolution of the Data Model.

1.4.2 Implementation

Consultation Question:

Do you agree with the phased implementation plan – beginning with targeted pilots for 12-18 months – to test the Data Model and identify what refinement is needed? Do you have suggestions of which jurisdiction[s] would be best placed to participate in such a pilot phase?

Summary of responses:

There was broad support for a phased implementation plan – with a 12–18-month piloting phase – to test and refine the Data Model as well as to support wider adoption.

In general, respondents felt that the timeframe set was appropriate given the complexity, although a handful of respondents noted that it might be too long a period given the urgent need to scale carbon credit markets, and the opportunity to act while registries and other market participants were in the process of digitising their data infrastructure.

Stakeholders recommended pilots across a broad range of countries, both developed and emerging markets, and with major regions represented. A large project developer summed up the broad sentiment: “It is important that the pilot testing is not limited to a single jurisdiction or registry but covers a wide range of geographies and methodologies. It is also important to obtain feedback from market actors sitting in different phases of the value chain, including carbon asset developers. This is important to make sure that the model is inclusive of the many nuances associated with carbon markets.” Some respondents helpfully suggested criteria for identifying these jurisdictions including: to capture a wide range of market activity (recognising different jurisdictions have differing project mixes), a range of market maturity across early design through to well established

¹⁶ This intent has been confirmed publicly through a [press statement](#) issued by CDOP at New York Climate Week in September 2025.

markets, varying levels of Article 6 readiness, differing technical infrastructure, and differing institutional arrangements. Specific country suggestions were made including Brazil, Chile, Colombia, EU, Kenya, France, Ghana, India, Indonesia, Peru, Senegal, Singapore, South Africa, Switzerland, Thailand and the UK (though inclusion on this list should not be seen as a confirmation of participation in piloting). Additionally, the importance of unpacking more precisely how different types of pilots, involving different carbon credit ecosystem players, would work was noted by several respondents, including a need to explore potential workflows.

Active engagement and feedback from a broad range of stakeholders across public and private sectors and along the carbon market life cycle was seen as important. As above, tie-ups with the work of CAD Trust and CDOP on piloting were recommended by several respondents.

CDSC response

Given the balance of responses was in favour of a 12–18-month period of piloting, an Expression of Interest will be launched to register interested parties. Pilots will then be chosen to represent a broad range of project mixes, maturity levels (including Article 6 readiness), technical infrastructure and institutional arrangements. Attention will also be paid to ensure those that are updating their data architecture will be able to test and integrate the Data Model as appropriate, to avoid duplication of effort over time.

1.4.3 Piloting

Consultation Questions:

- Are the three focus areas for the pilot phase – implementation of unique identifiers, testing with national and independent registries and incorporation of any additional Article 6 guidance – the right ones? Are there any additional priority areas to be tested?
- Do you have any feedback on the delivery model for such a piloting phase?
- If applicable, how aligned is your current data management approach to this model? Would you be interested in participating in a pilot?

Summary of responses:

Most respondents agreed that the three proposed focus areas – implementation of unique identifiers, testing with national and independent registries and incorporation of any additional Article 6 guidance – for the pilot phase were correct. For example, IETA wrote, “We believe that these focus areas are the right place to start. UIDs have the potential

strengthen market integrity to the point of substantially scaling markets and attracting new flows of finance. There are currently large gaps in registry infrastructure between different national and independent registries. Regarding Article 6, the guidance is still being developed.” Alignment with evolving Article 6 guidance was seen as a particular priority. CAD Trust pointed out that “the Article 6 guidance is evolving, and the UNFCCC may also want to reflect on the development and application of unique identifiers.” Incorporation of evolving Article 6 guidance was echoed by other respondents, including the MDB Working Group on Article 6, Climate Action Platform for Africa, and other anonymised respondents. Respondents also cautioned that the implementation of unique identifiers could come with challenges that will require careful navigation. LSEG noted that “Implementation of unique identifiers in particular is a large administrative task as part of the data model rollout that will require careful execution throughout the pilot phase, as it presents a change to existing practice”.

Some respondents suggested additional areas of focus, including:

- **Co-benefits, risk assessment and equitable finance allocation:** Some respondents (for example, IEEFA), proposed using the piloting stage to evaluate “the feasibility of capturing subnational origin data to support co-benefit mapping, climate risk assessment, and equitable finance allocation”, in line with suggestions to include additional data fields (see Section 1.2.3).
- **Real time data exchange between market participants including through APIs:** Respondents such as Equilibrium recommended adding “integration testing, covering API design, real-time synchronization, and cross-platform reconciliation [to] validate that conformance tools and schema versions work in production pipelines, not merely in theory”, while IEEFA emphasised machine-readable schema, including JSON schema and API compatibility to “ensure real-time data exchange.”
- **Standardisation of pre-issuance data:** One major project developer noted that it would be important to standardise “data points required for emissions calculations and baseline setting” (see Section 1.2.3).
- **Establishing maintenance processes:** One market intermediary highlighted that the Technical Note anticipated frequent picklist updates and suggested a “change-log and data-lineage conventions to strengthen auditability during migrations”.

Respondents again highlighted the importance of piloting with a broad range of stakeholders. IETA noted that “It will be important to continuously collaborate with key stakeholders including regulators, practitioners, registry providers, and other institutions, during the pilot phase and as these developments evolve.”, while Climate Action Reserve similarly noted that “Involving a broad range of stakeholders in the pilot will be essential to

ensure the Data Model is accurately tested and reflects the needs of different registry types.” Ratings agencies, including Sylvera and BeZero, emphasised the importance of testing with “those who use [data] every day beyond registries”, including project developers, entities retiring carbon credits, and market intermediaries.

Some respondents emphasised the importance of capturing concrete outcomes and metrics during the piloting phase. For example, Climate Action Platform for Africa noted that pilots should try to generate “concrete examples of how the Data Model delivers value”, while Abatable suggested “to have clear metrics of what will be tested in the pilot: ease of adoption; investment needed; training required; time-saving” in order to demonstrate the value of the Data Model.

Overall, there was enthusiasm to participate in piloting and shaping future iterations of the Data Model from a range of organisations. Several organisations, including BeZero, Sylvera, and Climate Action Reserve, indicated that minimal changes would be required to their existing data architecture and workflows, with Anthesis specifically noting that their “systems [...] already align with many CCC fields. We are eager to participate in piloting and co-developing data model integrations.” Equilibrium likewise reported general alignment with existing systems and highlighted areas of interest for testing, stating: “There is interest in participating in pilots to test ID issuance/correction flows, registry mappings, AEF integration, and eligibility label handling.” Other organisations anticipated more significant adjustments to current processes but nonetheless expressed willingness to engage, with Carbon Direct explaining: “Our current data management approach is not directly aligned with the proposed model. We maintain a proprietary internal schema tailored specifically to our project diligence process. While we will likely continue to maintain our own schema and internal knowledge base, we plan to write the necessary adapters to map data from the Common Carbon Credit (CCC) data model [if] it becomes the market standard. Regarding the pilot, our participation would depend on [incentives, including] the opportunity to help shape the standard itself.” Similarly, an anonymised market intermediary observed that “The broader and structured approach proposed in the Data Model goes beyond our present practices, yet the dataset outlined for the pilot is highly relevant to our work. We would be interested in participating in a pilot, both to contribute to its development and to adapt our processes toward a more standardised and transparent framework.”

Overall, there was strong support for a coordinated, open, and iterative delivery model but no specific preference on the entity responsible for piloting was expressed. Respondents emphasised that the pilot phase should take into account the following delivery considerations:

- **Involvement of other standardisation efforts:** Many respondents emphasised the importance of coordination with other ongoing multi-stakeholder data standardisation efforts to avoid market fragmentation, “including CAD Trust, CDOP, and the new ISO 32214 Data Model for Carbon Credit Markets” highlighting the importance of “formal feedback channels to other initiatives” (IETA).
- **Appropriate capacity building:** Some respondents, e.g., Sylvera, IETA, emphasized the importance of capacity building, including “consulting with development banks and other institutions for capacity building”.
- **Open governance and transparency:** Some respondents said that piloting should “prioritise a neutral steward with open governance, transparent change logs, and semantic versioning” (Equilibrium)

CDSC response

The enthusiasm for piloting this resource is welcomed, and an Expression of Interest for interested parties will be launched in Q4 2025. No clear preference or specific proposals emerged regarding an organisation to serve as the governance body, meaning the CDSC Secretariat may need to continue to support the piloting phase.

While the pilots will continue to focus on testing with national and independent registries, some pilots may include additional market participants (for example project developers or exchanges), potentially enabling the testing of real-time exchange and APIs, depending on technical readiness of pilot participants. While additional focus areas including pre-issuance data and co-benefits were considered, it is unlikely that pilots will have the resources to test data fields outside of the common foundation (see Section 1.2.4).

Efforts will additionally be made to include appropriate capacity building - for example through the involvement of international organisations providing such support – and to establish a transparent governance model.

Annex A: List of respondents

The Secretariat are grateful to all those who participated in the consultation. The following list contains those parties who agreed to make their involvement public.

Group	No. of responses	Publicly disclosed respondents
Carbon markets ecosystem & industry bodies	28 total, of which 26 public	• Abatable • Adelphi Consult GmbH • Anthesis • BeZero Carbon • Carbon Direct Inc. • Carbonfuture • Carbonplace • Climate Action Reserve (CAR) • CUR8 • Equilibrium • Fastmarkets • Global CarbonTrace • Gold Standard • Greenery INC • Intellectap • International Emissions Trading Association (IETA) • International Swaps and Derivatives Association (ISDA) • Isometric • MGM Climate Business Developers • RINA SERVICES SPA • Solar Rais • SustainCERT • Sylvera • The African Cookstove Company (TASC)
Standard setters	3 total, of which all 3 public	• Integrity Council for Voluntary Carbon Markets (ICVCM) • International Organization for Standardisation (ISO)

		• Neofin Advisory / British Standards Institution
Practitioner-led data initiatives	2 total, of which both public	• Carbon Open Data Protocol (CDOP) • Climate Action Data Trust Ltd (CAD Trust)
Governments, MDBs & international organisations	10 total, of which 6 public	• African Development Bank • Financial Regulatory Authority (FRA), Government of Egypt • Financial Sector and Conduct Authority (FSCA), Government of South Africa • Multilateral Development Bank (MDB) Working Group on Article 6, World Bank • Swedish Energy Agency • Thailand Greenhouse Gas Organisation
Buyers, investors & exchanges	10 total, of which 6 public	• Emergent / LEAF Coalition • Ernst & Young (EY) • Japanese Bankers Association • Johannesburg Stock Exchange (JSE) Ventures, a subsidiary of JSE Limited • London Stock Exchange Group (LSEG) • Standard Bank
NGOs, think tanks & capacity-building organisations	6 total, of which 6 public	• Climate Action Center of Excellence (CACE) • Climate Action Platform for Africa (CAP-A) • Climate Policy Institute (CPI) • Hedera Foundation • Institute for Energy Economics and Financial Analysis (IEEFA)

Annex B: Consultation questionnaire

The consultation asks questions in the following sections:

Part A – Information about respondents including name, organization, region etc.

Part B – Key Questions: Respondents’ experience of data standardisation across carbon markets, and broad views on the overall approach taken to Data Model development—including on scope, structure, and key data fields, such as unique identifiers—as well as adoption, implementation, and governance of the Data Model.

Part C – Detailed Design Questions on the technical design of the Data Model, including in relation to its structure, format, parts of the carbon credit life cycle covered and treatment of key data fields.

PART A – Respondent details

In this section you will be asked for some basic identifying information.

1. **Name:**
2. ***Email address:**
3. ***Name of organization or institution:**
4. ***What country or region does your organisation or institution primarily represent or operate in?**
(If your organisation’s work is global, please write ‘global’)
5. **What type of institution do you represent?**
 - Government agency or regulator
 - International organisation or standard setter
 - Specialised carbon markets standard setter
 - Private-sector institution - investor
 - Private-sector institution - project developer
 - Private-sector institution - registry
 - Private-sector institution - rating agency
 - Private-sector institution - trading exchange
 - Private-sector institution - carbon credit buyer
 - Private-sector institution - other market intermediary

- Civil society group
- Individual respondent
- Other

6. **Are you happy to be contacted if we identify follow-up points for discussion?**

7. **All responses will be made available on the CDSC website unless otherwise indicated. Are you content for your response to be made available?**

PART B – Key Questions

This section consists of high-priority, high-level questions covering both the technical specifications of the model as well as the potential delivery model. Respondents have the option to exit the survey after this section, or to provide more detailed feedback on the technical specifications of the Data Model in Section C.

1. **What has been your experience of data standardisation (or lack thereof) in carbon credit markets? How has this impacted your ability or willingness to support the development of, or participation in, these markets? Please share any relevant examples or case studies.**
2. **Has the scope of the Data Model been appropriately defined, noting that it includes all carbon credits (including those transacted under Article 6), and excludes non-credit based cooperation under Article 6 and emissions trading system allowances (further detail is available in Section 2.2 of the Technical Consultative Note (the Note))?**
3. **Have the key benefits and use cases of the Data Model been accurately captured in Section 2.3 of the Note? Are there additional benefits and use cases that are not captured in the Note?**
4. **Given accessibility is a guiding principle, is a spreadsheet a suitable format for the Data Model? Are there any additional resources required to support implementation of the suggested approaches to data standardisation (e.g., a user manual, workshops or worked examples)?**
5. **Each table in the Data Model relates to a stage of the carbon credit life cycle. Does this approach to structuring the Data Model meet your needs as a user? If not, what alternative approaches would you suggest?**

6. **Does the Data Model capture all the necessary data fields to support a minimum baseline for data standardisation and are the right data fields included in the right tables?**
7. **Section 4.2.1 of the Note outlines a proposal to introduce a system of ecosystem-wide unique identifiers to support market integrity and reduce the risk of double counting. Do you have a view on this proposal? Do you have feedback on the design of the identifiers, including the focus on batch-level identifiers (versus credit-level identifiers)? Do you have feedback on the implementation of a system of unique identifiers, including on a suitable body that could issue identifiers?**
8. **Do you have a view on the suggested approach to the following design choices outlined in Section 4 of the Note? This includes, but is not limited to, the approach to:**
 - a. Capturing the fact that a single project might deploy multiple methodologies or span multiple regions through the use of sub-project tables (see Section 4.1.1 of the Note)
 - b. Integrating the Authorized Electronic Format (AEF) for Article 6 reporting (see Section 4.1.3 of the Note)
 - c. Applying Eligibility labels for credits that policymakers have deemed eligible for use in carbon pricing mechanisms (see Section 4.2.8 of the Note). *"These fields are designed to capture eligibility in a strictly factual manner, if and where it exists. Where market participants do record eligibility in their own data, the Data Model seeks to facilitate their doing so in a consistent and transparent manner. The Data Model is not a tool to influence substantive policy decisions for what credits—if any—are eligible for regional, national, or sub-national carbon pricing schemes. Such schemes may have eligibility restrictions, including (but not limited to) region of origin requirements, that are decided solely at the discretion of relevant regulators and not captured here. Labels only capture eligibility that has been decided by regulators and project developers will not be able to state eligibility of their own projects or credits".* The inclusion of specific labels at either the sub-project, project, or batch level does constitute an endorsement of underlying eligibility requirements, nor is it intended to foreground specific labels over others.
 - d. Capturing the purpose of retirement and potential picklist values for this data field, if a picklist is desirable (see Section 4.2.9 of the Note)

9. **Are the adoption levers identified in Section 5 of the Note comprehensive and appropriate? Are there additional levers that could support model adoption?**
10. **Are there specific barriers to adoption that you believe the pilot phase should anticipate and seek to address?**
11. **Do you agree with the phased implementation plan—beginning with targeted pilots for 12-18 months—to test the Data Model and identify what refinement is needed? Do you have suggestions of which jurisdiction[s] would be best placed to participate in such a pilot phase?**
12. **Are the three focus areas for the pilot phase—implementation of unique identifiers; testing with national and independent registries; and incorporation of any additional Article 6 guidance—the right ones? Are there any additional priority areas to be tested?**
13. **Do you have any feedback on the delivery model for such a piloting phase?**
14. **If applicable, how aligned is your current data management approach to this model? Would you be interested in participating in a pilot?**
15. **Do you have any other comments or feedback on the Technical Consultative Note or Data Model that you'd like to share?**

OPTIONAL PART C – Do you want to provide more detailed feedback on the technical specifications of the Data Model?

PART C – Technical questions

1. **The Data Model contains the following categories of tables:**
 - a. Baseline tables related to the carbon credit lifecycle
 - b. Article 6 tables replicating the Authorized Electronic Format (AEF)
 - c. Illustrative auxiliary tables, and
 - d. A metadata table

This structure is detailed in Section 3.2 and illustrated in Figure 7 of the Note. Given the illustrative nature of the auxiliary and metadata tables, and that the AEF is governed by the UNFCCC, please provide feedback on the baseline tables.

Do the baseline tables link to each other appropriately, and are primary and reference keys through which they link appropriately designed?

2. **Are data field descriptions sufficiently clear?**
3. **Are fields correctly noted as static or changing?**
4. **The Data Model is designed around a principle of data normalisation—which requires that every cell has a unique value, and every record be unique wherever possible—however, within a given project, there may be data fields that require capturing multiple values. For example, a single project may deploy multiple methodologies.**

To address these challenges, the Data Model uses picklists wherever possible, and for key project-related variables introduces a Sub-Project Information data table to capture variables that can be recorded more than once within a single project.

Do you agree overall with this approach? Do the variables captured in the Sub-Project Information data table, namely, ‘project type’, ‘methodology’, ‘sector’, and ‘mitigation type’, adequately capture data fields within the same project that may require recording multiple values?

5. **Do you agree with the picklist values included in the Data Model? Are there any data fields that, in your view, should have a picklist but currently do not? Do the values assigned to picklists strike an appropriate balance between the need for granular information and flexibility versus the need to allow meaningful aggregation of data if users require this?**
6. **The Data Model replicates the Article 6 Authorized Electronic Format (AEF) in order to maximise alignment with UNFCCC reporting guidance. Do you agree with this choice? Would it be helpful for the Data Model to more fully integrate AEF data fields in other baseline tables? Finally, where AEF fields are included in the baseline Data Model, have they been recorded in the correct place?**
7. **What do you see as the potential benefits of a common approach to unique identifiers in carbon credit markets?**
8. **Is a batch level identifier sufficiently granular for most use cases? What use cases would require a credit-level identifier?**

9. **Section 4.2.1 of the Note lays out, in detail, the rationale for the proposed unique identifier format and the attributes that are captured within it (versus elsewhere in the Data Model). Do you agree with this approach or should other attributes be captured in the proposed unique identifier format?**
10. **Section 4.2.1 of the Note sets out an approach to implementing unique identifiers, through Suitably Qualified Bodies (SQBs) in willing pilot jurisdictions. Do you have any feedback on this proposed approach?**
11. **The activities that generate carbon credits can range from individual projects to programs that cover entire jurisdictions or sectors (see Section 4.2.2 of the Note for further details). Does the Data Model adequately reflect the possible types of programs or is more granularity needed?**
12. **Carbon crediting projects can theoretically span multiple geographies—however, emission reductions typically need attribution to single countries. The Data Model therefore recommends splitting these projects into two entries, one for each country. The two entries would have the same unique identifier and their relationship would be captured in the ‘related projects’ data field (see Section 4.2.3 of the Note for further details).**

Does this approach make sense for balancing the need to attribute emissions reductions to single countries against the need to avoid multiplicity of responses in the Data Model? Are you satisfied that the ‘related projects’ field is sufficient to identify these multi-country projects?

13. **The Data Model proposes using ISICs Division level (01-99) to capture information related to the sectoral classification of the project.**

Does the ISIC Division level provide sufficient granularity for capturing key differences between project types? Are there any alternative internationally recognised and widely applied classifications of economic activity that could also be considered?

14. **Are the picklist values provided for ‘project type’ and ‘methodology’ in the Data Model comprehensive? Are there any methodologies that you do not think can be categorised into one of the project types?**
15. **Do you have suggestions on what process could be followed for maintaining the project type and methodology picklists? In particular, feedback on methodologies approved by national regulators or carbon crediting programs is welcome.**

16. **There is increased recognition that precise geographical boundaries are required for accurate emissions accounting. The Data Model therefore suggests a multi-tiered approach to recording location data, including spatial data specifications (see Section 4.2.6 of the Note for further detail).**

Is this approach sufficient? Are there additional standardised geographic data indicators that you would like to see included in the Data Model?

17. **The Data Model does not propose a specific file format for files that capture geographical boundaries (see Section 4.2.6 of the Note). Do you agree with this approach, and if not, would you recommend a particular file type to be included?**
18. **The Data Model is limited to MRV fields that are standardisable across project types, noting the potential for future enrichment of the resource in the future (see Section 4.2.7 of the Note for further detail). What additional fields, including Digital MRV (dMRV) fields, could be prioritised for future iterations of the Data Model, that are standardisable across different project types? How can standardisation across project types be encouraged?**
19. **Buyers of credits have indicated that eligibility labels—which identify credits policymakers have deemed eligible for limited use in their carbon pricing systems—are of value to them and will help to simplify purchasing decisions.**

Do you agree with including these labels in the Data Model?

**Disclaimer - "These fields are designed to capture eligibility in a strictly factual manner, if and where it exists. Where market participants do record eligibility in their own data, the Data Model seeks to facilitate their doing so in a consistent and transparent manner."*

The Data Model is not a tool to influence substantive policy decisions for what credits—if any are eligible for regional, national, or sub-national carbon pricing schemes. Such schemes may have eligibility restrictions, including (but not limited to) region of origin requirements, that are decided solely at the discretion of relevant regulators and not captured here. Labels only capture eligibility that has been decided by regulators, and project developers will not be able to state eligibility of their own projects or credits". The inclusion of specific labels at either the sub-project, project, or batch level does constitute an endorsement of underlying eligibility requirements, nor is it intended to foreground specific labels over others.

20. **The Data Model includes individual fields for eligibility labels for each carbon pricing mechanism because some credits may be eligible for more than one scheme. This is why a single picklist of eligibility labels is not feasible. The Data Model currently includes individual eligibility labels, recorded in the project, sub-project, or batch tables, as appropriate.**

Do you agree with this approach, or are there more efficient alternatives? Do you foresee any challenges in applying this approach?

21. **Given the variety of use cases of credits, the Data Model recommends a free-form text field to capture the purpose of retirement. Do you agree with this approach, or would you prefer to see additional standardisation within the Data Model via a picklist? If incorporating a picklist is preferred, what values would you suggest including in the picklist?**
22. **Are there further data fields that are needed to capture the ultimate ‘beneficiaries’ of retirements (if, for example, credits are retired by a broker or market marker on behalf of someone else)?**