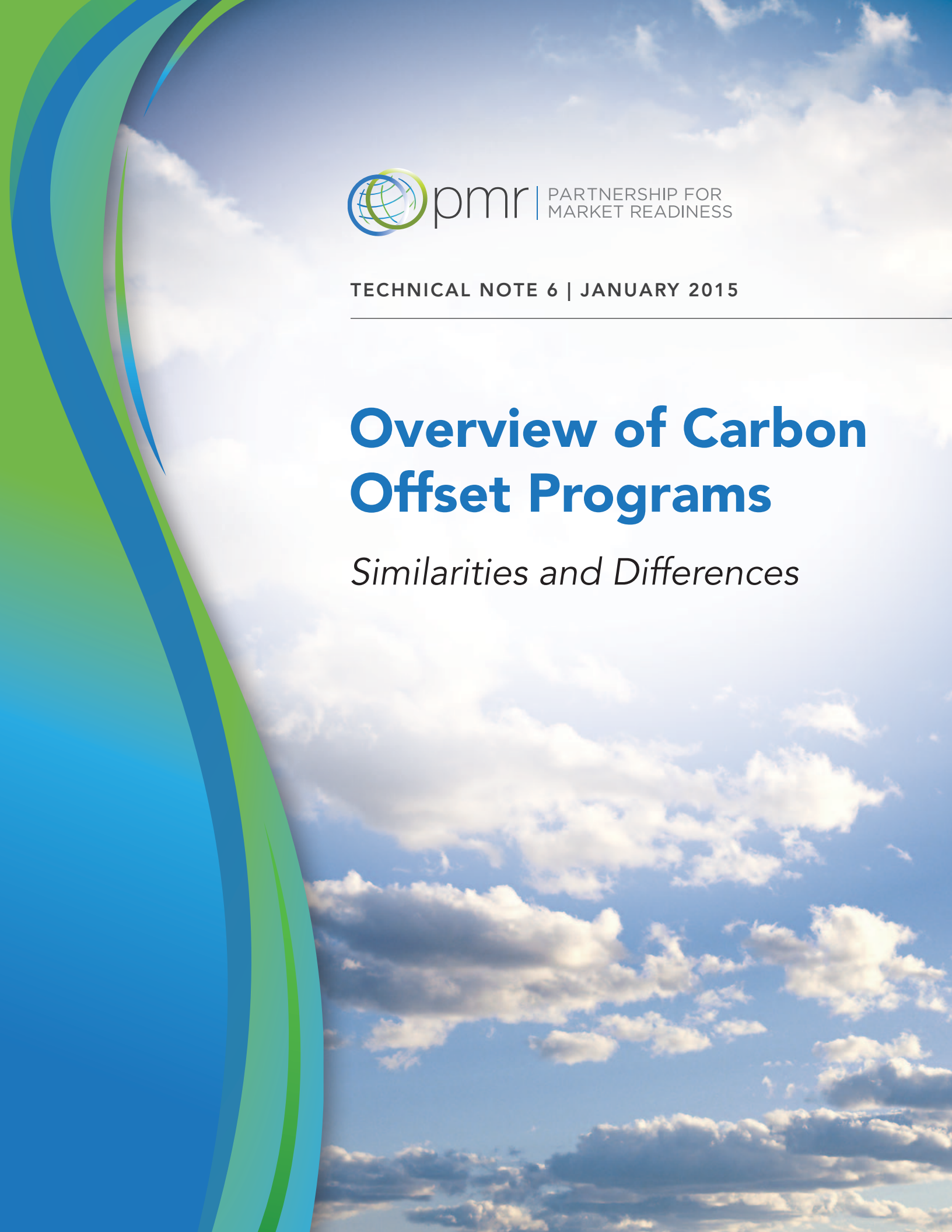

PARTNERSHIP FOR MARKET READINESS

TECHNICAL NOTE 6 | JANUARY 2015

Overview of Carbon Offset Programs

Similarities and Differences

This Technical Note was drafted and updated for the Partnership for Market Readiness (PMR) Secretariat by Anja Kollmuss and Jürg Füssler (INFRAS) with support from Felicity Spors, Pauline Kennedy and Pierre Guigon in the PMR Secretariat.

The document is based on publicly available information on the Clean Development Mechanism (CDM), Joint Implementation (JI), the Gold Standard (GS), the Climate Action Reserve (CAR), the Québec Offset Program, Japan's Joint Crediting Mechanism (JCM), the China CER (CCER), and the Verified Carbon Standard (VCS), as well as on interviews and feedback from officials and experts from these programs. The Technical Note was updated in October 2014 to include California's Compliance Offset Program (CA COP), Australia's Carbon Farming Initiative (AU CFI), and Switzerland's Offset Program (CH OP). The update also includes relevant new developments under all of the originally covered offset standards and programs. The authors and the PMR Secretariat thank the representatives from the 11 programs for their much-appreciated collaboration and constructive feedback.

An earlier draft of the first version was presented and discussed at the PMR Technical Workshop in Barcelona, Spain, on May 26, 2013. Feedback from participants has been taken into account for this final report. Special thanks go to Jessica Allen (Australia), Thomas Bernheim (European Commission), Bengt Boström (Sweden), and Rachel Child (Project Developers Forum). For the updated version, special thanks go to Stephen Shelby (California Air Resources Board), Ella McKinley (Australian Carbon Farming Initiative), Michelle Hermann (Federal Office for the Environment), and Tang Jin (SinocCarbon).

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For more information on the PMR, please visit **www.thepmr.org**.

Technical Note 6 | January 2015

Overview of Carbon Offset Programs

Similarities and Differences

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1. Introduction

1.1. Objective

In an effort to reduce greenhouse gas emissions, countries are implementing a broad range of market-based approaches and carbon price-based mechanisms, including emissions trading schemes (ETSs), scaled-up crediting, offset schemes, and carbon taxes.[1] Over almost two decades, a rich body of experience with offset mechanisms has been gained, which, in turn, is informing the considerations, design, and regulation of existing, proposed, and planned offset programs.

This Technical Note documents a mapping exercise that outlines the key elements and design features of offset programs. It discusses the essential differences and similarities between programs. It identifies the main elements and design features of 11 different offset programs and discusses how these programs address key issues including efficiency, environmental integrity, applicability, and transaction costs.

The Technical Note is prepared with the intent to provide an overview of the key features of selected offset programs and to draw out similarities and differences; it does not evaluate the implications of the different features. This may be useful for the Partnership for Market Readiness (PMR) Implementing Countries that are contemplating different designs of crediting mechanisms. It may also contribute to the general discussion on the options for the design of crediting mechanisms in the context of policy action for climate change mitigation.

1.2. Approach

This Technical Note examines 11 offset programs. The programs were selected based on their relevance and because together they represent a wide range of different offset program designs.

A study framework for mapping the 11 offset programs was developed that seeks to outline the main characteristics of each.[2] The framework considered the following characteristics of each offset program:

- Overview of offset programs
- Principles and goals
- Operationalized principles
- Governance structure
- Project registration procedures
- Monitoring, Reporting, and Verification (MRV) and credit issuance procedures
- Sustainable development aspects

The analysis included desk reviews of literature and program documentation and was complemented with interviews and written input from program administrators. The design features of the 11 programs

[1] In this Technical Note, the term *carbon offset program* is used to avoid potential confusion that may arise with terms such as *standards* or *registry*. A carbon offset program combines (a) accounting rules; (b) Monitoring, Reporting, Verification and certification rules; and (c) registration and enforcement systems. See also SEI and GHG Management Institute.

[2] The Technical Note does not, however, seek to assess the overall benefits and potential limitations of offsets per se.

are summarized in the tables in annex A.[3] The most salient design features were examined to identify similarities, differences, and trends. A list of other offset programs that may be relevant but were not considered in the present study are provided in annex B.

Preliminary results of this work were presented at the 5th PMR Partnership Assembly Meeting in Washington, DC, in March 2013, where preliminary feedback from participants was collected. A subsequent draft of the Technical Note was reviewed by the representatives of each offset program for another round of feedback; it was then presented at the PMR Technical Workshop in Barcelona, Spain, in May 2013 for further discussion and feedback. The Technical Note was published in August 2013.

The first version of the Technical Note included the Clean Development (CDM), Joint Implementation (JI), the Gold Standard (GS), the Climate Action Reserve, the Québec Offset Program, Japan's Joint Crediting Mechanism (JCM), the China CER (CCER), and the Verified Carbon Standard (VCS). The Technical Note was updated in 2014 to include California's Compliance Offset Program (CA COP), Australia's Carbon Farming Initiative (AU CFI), and Switzerland's Offset Program (CH OP). The update also includes relevant new developments under all of the originally covered offset standards and programs.

2. Overview of Programs

2.1. Considered Programs

The Technical Note examines 11 offset[4] programs that represent a wide spectrum of approaches in terms of design and implementation (see box 1).

Box 1. Overview of Considered Offset Programs[a]

There are two offset mechanisms under the Kyoto Protocol. Offsets from these programs are used by countries with a reduction commitment under the Kyoto Protocol, by private buyers that are covered under an emissions trading scheme (e.g., EU-ETS), and by voluntary buyers.

- **Clean Development Mechanism** (CDM): Offset projects have to be located in developing countries that have ratified the Kyoto Protocol.
- **Joint Implementation** (JI) Track 1: Offset projects have to be located in countries that have a reduction commitment under the Kyoto Protocol. JI can be implemented under Track 1, under which host countries are responsible for most aspects of the project cycle (including registration and issuance). Under Track 2, which is overseen by the UNFCCC, requirements and procedures are similar to those of the CDM. This Technical Note focuses on Track 1 because of its relevance for national programs and because 97 percent of all JI offsets have been issued under Track 1.

box continues next page

[3] It should be noted that while some of the standards examined have been in operation for a number of years and thus have road-tested procedures (e.g., the CDM, GS, CAR, or VCS), others are very new (e.g., Japan's Joint Crediting mechanism and the China CER).

[4] In this Technical Note, the terms *offsets* and *credits* are used interchangeably because different offset programs refer interchangeably to these terms.

Box 1. Overview of Considered Offset Programs *(continued)*

This Technical Note looks at several offset programs developed and administrated by governments to supply offsets for their domestic climate mitigation programs:

Programs generating domestic offsets:

- **Australian Carbon Farming Initiative** (AU CFI): These offsets were primarily used for compliance by entities covered by the carbon pricing mechanism established by the *Clean Energy Act 2011*, which was repealed on July 17, 2014. The Australian Government has committed to expand the scope of the CFI and to establish the Emissions Reduction Fund, under which it would be the primary purchaser of offsets.[b]
- **California's Compliance Offset Program** (CA COP): These offsets are used for compliance by entities covered by California's and Québec's ETSs.
- **China CER** (CCER): These offsets can be used for compliance under the pilot cap-and-trade systems that are being developed inter alia in five Chinese provinces and two cities.
- **Québec's Offset Program (Québec):** These offsets are used by entities covered by the Québec and the California ETSs for compliance.[c]
- **Switzerland's Offset Program** (CH OP): These offsets are used for compliance by producers and importers of motor fuels, and potentially by fossil-thermal power plant operators as well, to meet their mitigation obligations under the Swiss CO_2 law.

Program generating international offsets:

- **Japanese Joint Crediting Mechanism** (JCM):[d] A bilateral project-based offset mechanism that both Japan and the host country may use to meet national climate targets.

Voluntary programs that generate offsets that are used in the voluntary market as well as for compliance under some government compliance schemes:

- **Climate Action Reserve** (CAR)
- **Verified Carbon Standard** (VCS)

As approved Offset Project Registries, CAR- and VCS-certified projects that apply offset protocols approved by California are eligible to operate in the California ETS (CA ETS). Both programs can issue offsets for certain project types under the California Air Resources Board (CARB) Compliance Offset Protocols. These offsets then have to be transitioned into ARB Offset Credits to be used for compliance under the CA ETS.

Voluntary programs that generate offsets that are used in the voluntary market:

- **Gold Standard** (GS): These offsets can be used as an add-on certification to CDM and JI or as a standalone offset program for voluntary projects.

[a] A list of other offset programs can be found in annex B.
[b] Like an offset mechanism, it will establish baselines for projects that, once approved, can bid into a government-funded auction. The latest information on this policy is available at http://www.cleanenergyregulator.gov.au/Emissions-Reduction-Fund/Pages/default.aspx and http://www.environment.gov.au/climate-change/emissions-reduction-fund/about.
[c] The Québec and California cap-and-trade systems have been linked since January 1, 2014.
[d] Also known as Bilateral Offsets Crediting Mechanism.

The regulatory, institutional and political landscape in which an offset program is designed influences its policy objectives, program design, and implementation.[5] Objectives, scope, and size of offset programs, therefore, vary substantially. Table A.1 summarizes the regional and political scope, size, and age of each of the 11 programs examined.

2.2. Size of Programs

The size of the program and the number of offsets issued varies significantly among programs. This is because some are still at an early stage of implementation while others have been operational for several years. In addition, some programs have fewer credits issued because they have a more limited scope in terms of eligible project types and geographic coverage.

The offset mechanisms under the Kyoto Protocol—CDM and JI Track 1—are responsible for the lion's share of issued offsets so far (of the 11 considered programs, CDM and JI Track 1 account for over 90 percent of credits issued (i.e., 59 percent and 33 percent of total credits issued, respectively). The CDM is also the mechanism that has by far the most registered projects (i.e., CDM projects account for 77 percent of all projects registered, followed by VCS at 10 percent and JI Track 1 at 5 percent). This in part reflects the longevity of the CDM and JI, which are two of the longest running offset standards; it also in part reflects their scope, which is both global and allows the accreditation of project activities that generate relatively large quantities of emissions reductions (e.g., industrial gas projects).

The average number of offsets a project receives varies dramatically among the different programs (see figure 2). The number of credits depends on the project size and the length of the period for which it has received credits. The CDM has issued on average close to 200,000 offsets. The GS, California's Compliance Offset Program (CA COP), and AU CFI have issued on average only about a third as many offsets per project as the CDM. In the case of AU CFI, this may be due to the limited number of years for which projects have received offsets; in the case of GS and CA COP this is probably due to smaller projects size (e.g., neither program includes large industrial gas projects that can generate very large number of offsets). The CH OP system focuses on micro projects, as larger emissions sources are generally covered by other carbon regulation. JI Track 1 issued over 1.5 million offsets per project, an order of magnitude more than any other program. This is due to a number of very large projects that were registered in 2012 and that have received credits retroactively. Almost all of these projects were implemented well before they applied for JI status. The quality of these projects has therefore been questioned.[6]

2.3. Scope of Programs

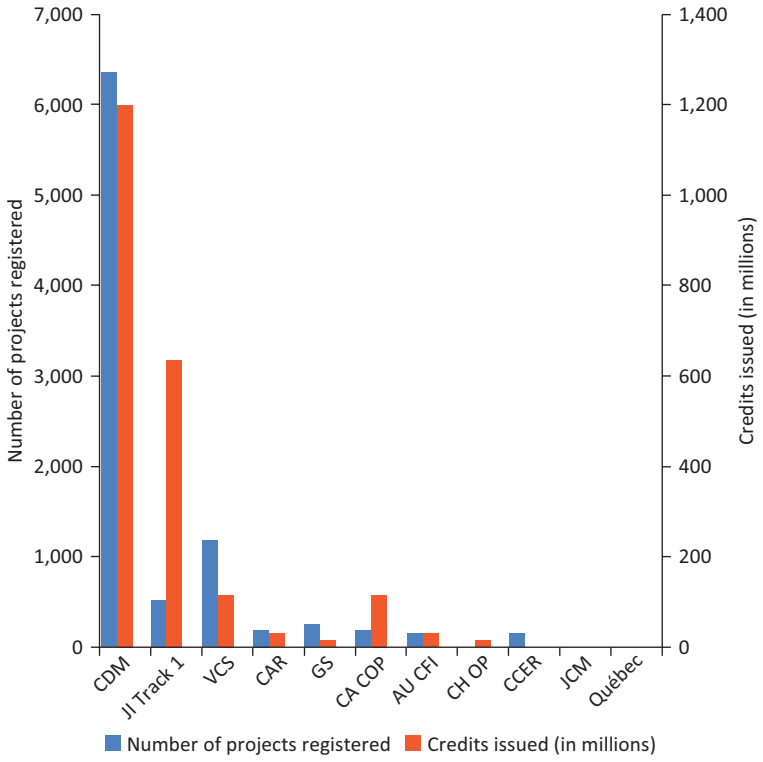
The following figure provides a simplified overview of the scope of eligible project types in the considered offset programs. Scope includes both the geographic and the sectoral eligibility of an offset program.

Two different approaches in terms of the scope of eligible project types can be distinguished:

- *Broad Sectoral and Geographic Scope*: These programs are generally open to all project types, with some very limited exceptions (e.g., nuclear projects are excluded in most examined standards).

[5] Table A.2 provides an overview of the primary users of credits/offsets generated by the offset programs.
[6] Analysis by the authors based on UNEP Riso JI database, April 2014.

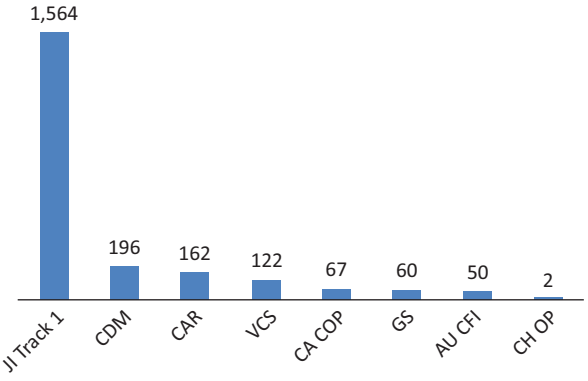
Figure 1. Number of Registered Projects and Units Issued, as of July 2014



Source: Information provided by offset programs and UNFCCC websites. The CCER, JCM, and Québec program had not issued units as of July 2014.

Note: One unit typically represents 1 metric ton of CO_2 equivalent in GHG reductions. AU CFI = Australia's Carbon Farming Initiative; CA COP = California's Compliance Offset Program; CAR = Climate Action Reserve; CCER = China CER; CDM = Clean Development Mechanism; CH OP = Switzerland's Offset Program; GS = Gold Standard; JCM = Joint Crediting Mechanism; JI = Joint Implementation; Québec = Québec Offset Program; VCS = Verified Carbon Standard.

Figure 2. Average Number of Credits Issued per Registered Project (in Thousands) as of July 2014



Note: Programs ordered by total credit issuance (highest issuance left, no issuances right). One credit represents 1 metric ton of CO_2 equivalent in GHG reductions. AU CFI = Australia's Carbon Farming Initiative; CA COP = California's Compliance Offset Program; CAR = Climate Action Reserve; CDM = Clean Development Mechanism; CH OP = Switzerland's Offset Program; JI = Joint Implementation; VCS = Verified Carbon Standard.

Programs with a broad scope include the CDM, JI Track 1, CCER, JCM, and VCS. With the exception of the CCER these are all programs with international scope.

- *Selective Sectoral and Geographic Scope*: These programs are usually national or sub-national in scope and are designed to complement other domestic mitigation policies (such as domestic cap-and-trade systems and other domestic mitigation/energy policies). These programs have a limited number of eligible project types. Examples include AU CFI, CA COP, the Québec program, and CAR.

Offset programs with a broad scope aim to ensure maximum coverage to foster offset projects in many different areas and sectors. They may be able to tap into a large pool of potential offset projects and thereby potentially offer greater opportunities for mitigation. But establishing project baselines and additionality[7] and accounting for mitigation action may be challenging for programs with a broad scope that includes projects that generate offsets in sectors covered by other policies and instruments. For example, issues such as the risk of double counting in case of overlap with a cap-and-trade system[8] need to be addressed. As a result, programs with a broad scope are often established in sectors or countries that do not have mitigation pledges (e.g., CDM) or have strict accounting requirements to avoid double counting of emissions reductions. For example, JI projects are located in countries with a mitigation commitment under the Kyoto Protocol. To avoid a situation where emissions reductions from JI projects are counted by both the host and the buyer country, the host country has to convert one of its Kyoto allowances for each JI offset it issues.

Even if a country does not have a mitigation pledge, some sectors may be covered by other regulation or policies that impact greenhouse gas (GHG) emissions (e.g., feed-in tariffs for renewables). This can pose serious challenges in determining additionality and defining an accurate baseline (e.g., the so-called "E+/E- issue" discussed under the CDM[9]). Programs with a broad scope therefore require in-depth proof of additionality and baseline setting, which may add costs and uncertainty for the project developers.

[7] In the context of CDM, *additionality* is defined as follows: "A CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity" (3/CMP.1, annex, paragraph 43).

In practice, additionality is the principle that only those projects that would not have happened anyway should receive carbon credits. A project is additional if its proponents can document that realistic alternative scenarios to the proposed project would be more economically attractive or that the project faces barriers that carbon finance helps it overcome. Some offset programs determine ex ante a list of project types that are automatically deemed additional.

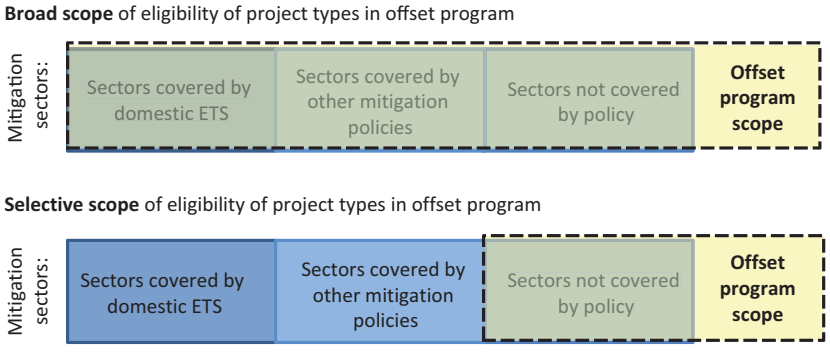
[8] For more information on the risk of potential double-counting, see Schneider, L., Kollmuss, A., and Lazarus, M. (2014). "Addressing the Risk of Double-Counting Emission Reductions under the UNFCCC." SEI Working Paper No. 2014-02., Stockholm Environment Institute, Seattle, WA. See also Erickson, P. A., and Lazarus, M. (2013). "Implications of International GHG Offsets on Global Climate Change Mitigation." *Climate Policy*, 13(4). 433–50. DOI:10.1080/14693062.2013.777632.

[9] For more information on additionality and baseline determination challenges in the context of other mitigation policies and pledges/contributions see annex III of Füssler, J. (2012). "CDM Baseline Approaches for PoA Upscaling and New Market Mechanisms (NMM):. Building NMM on CDM Elements. Final Report, KfW Bankengruppe, Zurich, Switzerland. See also Füssler, J., Herren, M., and Kollmuss, A., with Lazarus, M., and Schneider, L. (2014). "Crediting Emission Reductions in New Market-Based Mechanisms—Part II: Additionality Assessment & Baseline Setting under Pledges." Final Report, Ministry of Infrastructure and the Environment (I&M) of the Netherlands and the Federal Office of the Environment (FOEN) of Switzerland.

Figure 3. Simplified Overview of Coverage of the Considered Programs in Terms of Project Types and Sector and International vs. Domestic Scope

Note: AU CFI = Australia's Carbon Farming Initiative; CA COP = California's Compliance Offset Program; CAR = Climate Action Reserve; CCER = China CER; CDM = Clean Development Mechanism; CH OP = Switzerland's Offset Program; GS = Gold Standard; JCM = Joint Crediting Mechanism; JI = Joint Implementation; Québec = Québec's Offset Program; VCS = Verified Carbon Standard.

Figure 4. Offset Programs with a Broad Scope that Covers All Sectors in a Host Country versus Programs with a Selective Scope that Covers Only Sectors Not Included in a Domestic Emissions Trading Scheme or by Mitigation Policies



Note: ETS = emissions trading scheme.

Offset programs with a more selective scope, on the other hand, are able to restrict eligibility of project types to those activities where demonstration of additionality is more straightforward and where double-counting risks are lower. A selective scope may limit the program's overall potential to generate large volumes of offset credits. The rationale for adopting such an approach may be to provide clear signals as to which types of projects are to be incentivized through offsets (e.g., to ensure avoidance of double counting with projects covered under a cap-and-trade system). Furthermore, a selective scope can have the positive effect of limiting the ambiguity surrounding emissions reduction calculations as well as lowering costs and risks for project developers. For example, entities covered by the California ETS or by the Québec ETS may use offsets to cover up to 8 percent of their compliance obligation under the ETS. To avoid double counting, no offset can be issued in sectors covered under the ETS or in those that fall into specific regulation (e.g., landfills in California).

3. Principles and Goals of the Programs

All offset programs state environmental integrity and economic efficiency as their main goals for achieving mitigation action. See tables A.2–A.4 for a summary of the stated principles and goals of offset programs.

The way these principles are interpreted and operationalized varies significantly. Tables A.3 and A.4 summarize how these overall principles are operationalized including:

- Eligibility of projects types under the program
- Processes for the development and approval of methodologies
- Additionality and baseline rules
- Requirements for third-party validation and verification
- Transparency and stakeholder participation

4. Approaches to Methodology Design

The considered offset programs differ in terms of how they develop their project rules. Methodologies spell out the rules and procedures that determine how emissions reductions are to be measured and calculated for a particular project type. This section discusses how these methodologies are developed under each program and the use of project-based and standardized approaches for determining additionality and baselines.

4.1. Bottom-Up versus Top-Down Approaches to Methodology Development

Bottom-Up

Programs that were started earlier, such as the CDM and JI Track 1, have tended to use a more bottom-up process to develop project methodologies. Under a bottom-up process, methodologies are typically developed by individual project participants who propose specific methodological approaches for their project.[10] These are then evaluated and approved by the relevant authority of the offset programs.

[10] Although methodologies are often prepared by individual project developers, they typically become available to others once they are approved by the relevant authority.

Offset programs that use a bottom-up process tend to have a broader scope in terms of geographic coverage (i.e., international) and in terms of project eligibility (i.e., few limitations on eligible project types). Examples of such bottom-up programs include CDM, JI, VCS, and GS. The CDM has generated the largest number of methodologies, and many of the CDM methodologies have been used as the basis for the majority of methodologies of other offset programs. The CDM methodologies are either directly eligible by other offset programs (e.g., JI, GS, VCS) or have been modified by other programs to fit their scope and circumstances (e.g., CAR, CCER, GS, VCS, CH OP).

Top-Down

Under a top-down approach, methodologies are developed by the programs themselves, usually in consultation with external experts and stakeholders. Programs that are more selective in terms of their geographic scope and their project type eligibility often use a more top-down approach (e.g., CA COP, the Québec offset program, and CAR). These programs may have sought to avoid the experience of the bottom-up approach, which is, in general, more costly for project developers and can provide less predictability (in terms of ensuring that a project or methodology will be eligible). Most programs use a combination of top-down and bottom-up approaches. Bottom-up approaches rely on project developers to develop a methodological approach that, once approved, can then be used by others. In recent years, bottom-up programs have also worked to introduce methodologies, defined in a "top-down" approach, to try to address gaps in methodological coverage. For example, the CDM has a whole work program that includes the development of top-down methodologies for project types that have been deemed priorities.[11]

4.2. Standardized Approaches

Standardized approaches have been applied to setting baseline emissions, determining additionality and for streamlining and simplifying certain parameters for project emission calculations. Table 1 compares standardized and project-based offset program approaches. Table 2 provides an overview of the common types of standardization.

All offset programs use standardized approaches to some extent, such as the use of default parameters instead of requiring monitoring of actual emissions or the use of sector-wide performance standards to assess additionality and baseline setting. Such standardization tends to reduce costs and risks for project developers. For example, under a "positive list" approach (or list of predetermined eligible project types), all projects of a particular type are automatically deemed additional and therefore do not have to go through a lengthy process of proving additionality for each individual project.

It appears that programs that use a more top-down approach to methodology development also tend to use a more standardized approach to determining additionality and baselines. Even programs that were originally set up with a bottom-up approach—often to be able to start rapidly and to be open to different mitigation opportunities in different contexts and countries—have recently started to use more top-down,

[11] For example, CDM EB Meeting 78, April 2014: Annex 8—Further Work on Methodologies, Tools, and Standards.

Table 1. Project-Based versus Standardized Approaches to Crediting Methodologies

Project based	Fully standardized
Can take project-specific conditions into account (e.g., baseline, monitoring, additionality)	Common standards applied to all projects of a given type
In-depth project evaluation is necessary for each individual project Evaluations often have subjective components	Simplified, more transparent, and streamlined project approval process Subjectivity during the design phase of the performance standard. (e.g., decisions on stringency levels)
Typically, project-specific additionality tests (e.g., investment and barriers analysis) that take into account project-specific conditions	Additionality of a project can be easily determined and is based on predetermined criteria (e.g., emissions threshold or technology list)
Expensive and time-consuming for project developers and evaluators. Project developers may face risk of project rejection.	Costly and time-consuming to design (and update) Reduced risk of project rejection during approval process

Table 2. Definitions of Types of Standardization

Term	Definition	Examples
Standardized approach	Catch-all term that includes all of the approaches noted below	
Common criteria applicable across multiple methodologies	Terms or conditions applied across multiple methodologies *Commonly applied to additionality language*	• "Not mandatory by law" • "Does not generate non-carbon related revenue"
Common methods, factors, and equations applicable across multiple methodologies	Emissions factors, default value, and estimation methods used to address common circumstances in a consistent fashion across multiple project types	• IPCC 2006 Guidelines • Avoided electricity emissions module used across CDM methodologies • Uncertainty discounts based on IPCC guidance (used in CDM)
Project-specific default values	Used to calculate baseline and/or project emissions; only applicable to a specific project type	• 90 percent N_2O destruction as baseline for adipic acid JI projects
Performance standard: emissions intensity benchmark	Emissions rate/intensity per unit of output, input, or throughput *Applied to baseline and/or additionality determination*	• Emissions rate: X tons of CO_2 per ton of cement • Often based on a top percentile approach (e.g., CDM often use average of top 20 percent performance)
Performance standard: market penetration rate	Market share of current product sales or cumulative market penetration rate (of existing stock) of a technology or practice *Applied to additionality determination*	• Cumulative penetration rate: e.g., technology in use at 20 percent or less of all installations (e.g., methane recovery and combustion at landfills) • Market share: e.g., less than 5 percent of current sales (e.g., air conditioners exceeding a certain coefficient of performance)

table continues next page

Table 2. Definitions of Types of Standardization *(continued)*

Term	Definition	Examples
Positive lists	Usually a technology-specific list that deems all projects of that technology additional The underlying rationale is usually performance based	• Specific project types (e.g., small-scale projects, agricultural methane destruction, solar PV) might be considered automatically eligible (no additionality assessment required)
Standardized monitoring	Standardization of requirements for baseline and project monitoring across project types	• Prescription of minimum accuracy of measurement equipment • Tools for determination of boiler efficiency

Note: CDM = Clean Development Mechanism; IPCC = Intergovernmental Panel on Climate Change; PV = photovoltaic.

standardized approaches. For example, CDM, VCS, and GS have developed procedures to streamline and to standardize methodologies.[12]

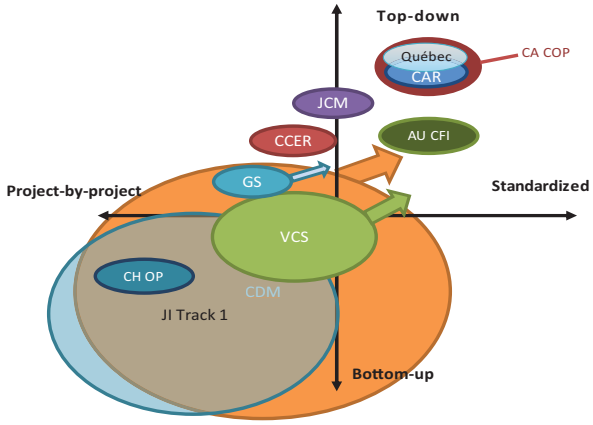
Highly standardized project methodologies reduce costs and risks for project developers and may also reduce the administrative burden during the project approval and credit issuance process. It is important to note that although highly standardized project methodologies reduce administration costs for the program at the point of project registration as well as at credit issuance, these may not necessarily reduce the costs of the offset programs overall. Standardized approaches require offset programs to carefully assess how particular parameters or project types can be standardized. This requires significant research and data availability for the sectors to be covered.

Standardized approaches are often praised for removing the subjectivity during the project review process. It is important to keep in mind, however, that such subjectivity is not eliminated in a standardized approach but rather separated from the individual project approval process. In other words, decisions about scope and stringency of a standardized approach are also subjective (i.e., influenced by the program goals, the political context in which it is implemented, and the overall mitigation strategy of the region). These policy decisions are made upfront during the development of the standardized methodology. Once the parameters are defined, they apply equally to all projects and therefore increase certainty for project developers and help streamline the approval process.

Figure 5 maps the considered standards in terms of their design and highlights some of the dynamics of more standardization and top-down approaches. Developing positive lists of specific eligibility criteria may more easily allow for the standardization and streamlining of baseline and additionality determination (see box 2).

[12] For CDM, see http://cdm.unfccc.int/methodologies/standard_base/index.html. For VCS, see http://v-c-s.org/standardized-methods

Figure 5. Methodology Development Approaches of Offset Programs



Note: AU CFI = Australia's Carbon Farming Initiative; CA COP = California's Compliance Offset Program; CAR = Climate Action Reserve; CCER = China CER; CDM = Clean Development Mechanism; CH OP = Switzerland's Offset Program; GS = Gold Standard; JCM = Joint Crediting Mechanism; JI = Joint Implementation; Québec = Québec's offset program; VCS = Verified Carbon Standard.

Box 2. Does a Selective Scope Simplify Standardization of Approaches?

A selective scope for geographic and project type eligibility may more easily allow for the standardization and streamlining of baseline and additionality determination, as it allows for the selection, upfront, of project types that are especially suitable for such approaches. California's Compliance Offset Program and Québec's offset program, for example, have only five and three approved methodologies, respectively; all but one of these (forestry sinks) are for non-CO_2 project types (e.g., methane, nitric acid, and ozone-depleting substances) that are not covered under other mitigation or energy policies. In some cases, these project types do not generate other revenue streams (i.e., there are no other significant revenues than those associated with emissions reductions).

The eligible project types and technologies are also rarely observed to be implemented without support of an offsetting scheme or specific policies and can therefore be categorized as "not common practice" (e.g., methane projects from small landfills and livestock operations). It appears that limiting (or preselecting) the eligibility of projects to those that are not covered by other mitigation policies and that are not likely to generate significant revenues other than those from generating offsets makes it easier to apply standardized approaches to additionality determination.

Developing positive lists that include technologies and project types that are automatically considered additional and establishing standardized additionality benchmarks in sectors seems more difficult for programs that are international in scope and cover project types in sectors that generate significant revenue and are likely to be covered by other policies (e.g., the power sector). Under the Clean Development Mechanism, for example, the majority of projects, and a substantial fraction of credits, are associated with project types for which there is considerable business-as-usual activity–energy efficiency, renewable energy, and fuel switching–and straightforward practice-based or performance-based standards are particularly difficult to establish.

5. Governance Structure

Governance and decision-making structures are set up to balance the goals of quality assurance and economic efficiency. The examined programs have similar governance structures, and include an executive body, program administrators, advisory boards, and third-party auditors. Table A.5 summarizes the governance structures of offset programs. Although the governance bodies differ to some extent in terms of their roles and responsibilities, there are common features in all the considered programs:

5.1. Executive Body

The executive body provides strategic governance and guidance and approves new methodologies and significant revisions. Under some programs, the executive body also approves project registrations and credit issuance and accredits and monitors auditors.

5.2. Program Administrators

Program administrators ensure the day-to-day operation of an offset program. They conduct completeness checks for project registrations and credit issuance documentation. In some programs, administrators also work on the approval or development of methodologies and procedures (together with advisory boards). They are responsible for communication on the rules and procedures of the program and may also provide training to a variety of stakeholders (e.g., auditors and project developers). Adequate capacity of administrators and sufficient training for stakeholders and auditors are important factors for offset programs.

5.3. Advisory Boards

Advisory boards develop technical guidelines and the rules for specific topics (e.g., forestry, standardization, accreditation of auditors). All the programs examined use technical advisory boards and external experts. This allows the programs to take advantage of external expertise for project evaluation, protocol development, review, and other technical issues that need to be addressed.

5.4. Third-Party Auditors

All programs require the use of third-party auditors to validate (if done separately) and verify projects and their emissions reductions. Third-party auditors are a key component of offset programs' overall quality assurance procedures. They must be competent to execute the project validation and/or to verify the reported emissions reductions. Having a robust accreditation and quality control system for auditors is seen as critical in establishing a successful offset program. Of the examined programs, all require accreditation of project auditors.

California's COP accredits and oversees third-party verifiers and may perform site visit spot audits. Both CA COP and CAR ensure that verifiers work with the same project operator only for a limited time to avoid conflict of interest (i.e., up to six years, followed by a three-year cool-off period). Training for verifiers is required for each applicable CA COP and CAR protocol. CAR, Québec, and (partly) VCS rely on the American National Standards Institute–which offers an accreditation program for third-party auditors of offset projects and is based on the requirements of ISO 14065–to provide accreditation to their respective program's auditors. The CDM has an auditor accreditation process in place and also conducts spot checks to ensure that CDM auditors perform adequately. When deemed necessary, the CDM and CAR issue

warnings and can suspend verifiers for poor performance. The GS requires CDM-accredited auditors and provides requisite training on sustainable development audits.

A well-designed program infrastructure helps to ensure quality and to reduce transaction costs. The particular structure of an offset program has to be shaped by its objective and scope. Although all of the examined programs have similar governance structures, there are differences in terms of the responsibilities that these bodies have. Clarity of rules and guidance and predictability in decision making are important elements to encourage investment in an offset program. The next section examines in more detail how decisions are made during the offset project cycle.

6. Monitoring, Reporting, and Verification (MRV) and Project Cycles

MRV[13] systems aim to ensure that the number of offset credits issued is equal to the number of achieved GHG reductions. The project cycles of the programs examined have common features and elements, but also some noteworthy differences that we elaborate on in the following sections.

6.1. Project Registration Procedures

The initial project review process includes the **assessment and approval (or rejection)** of an offset project by a program. This review process usually occurs before or during the early stages of implementation. Approval of a project commonly includes listing the project in the program's registry or database. Figure 6 lays out the general sequence of the project registration process. The dashed lines indicate steps that are not required by all programs.

Table A.6 summarizes the project registration procedures and is structured based on the general sequence of steps in the project registration process.

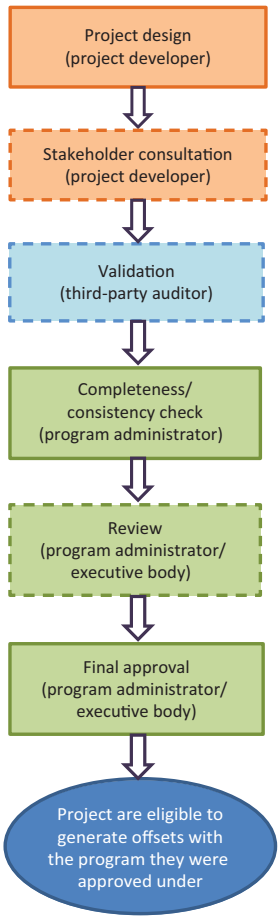
This Technical Note uses the following terms:

Validation is the detailed assessment of a proposed offset project to evaluate whether the project meets the offset program requirements and standards as an eligible project. Validation may include an evaluation of baseline determination, additionality testing, and monitoring plans. Validation is most commonly done by a third-party auditor. This step is part of the project registration process in CDM, JI, CCER, CH OP, and GS. There is no separate validation step under AU CFI, CA COP, CAR, VCS, and Québec. Instead, validation is done as part of verification (see section 6.2 for a discussion of verification).

Completeness/Consistency Check refers to a review to ensure that the project application, including the validation report (where relevant), is complete and consistent with program rules and that all legal requirements have been fulfilled. This step is usually done by program administrators. In the 11 programs examined, only CCER has the completeness check done by the auditor.

[13] In the context of carbon offset programs, the "M" in "MRV" is used for the more specific term *monitoring* rather than the more vague term *measurement*.

Figure 6. General Sequence of Project Registration



Note: Dashed lines indicate steps that are skipped by some of the examined offset programs.

Review[14] refers to an assessment of all project documents, including the validation report. A review is more in-depth than a completeness check and is commonly done by the program administrator and/or the decision-making body. The extent of the review varies by program. Voluntary programs such as VCS, GS, and CAR rely on the third-party auditor to conduct the validation and/or verification (and have no or only limited reviews). Furthermore, top-down programs with a more limited scope, such as CA COP, Québec, and CAR, have a more limited review process than broad-scope programs (i.e., CDM and JI).

Final Project Approval refers to the acceptance of a project based on a positive determination of each of the preceding process steps. Final decision-making power lies with the program decision-making body; in practice, however, it is often the program administrator or the auditor that determines if a project can

[14] Under the CDM, *review* refers specifically to a request by the CDM Executive Board for further review if it has doubts about the validity of (certain aspects of) a project. The term is used in this Technical Note more generally to refer to an in-depth examination.

be approved. After final approval, projects are registered[15] with the program's registry or database. This means that the project has been deemed eligible to generate offset credits from the program under which it was approved.

Observations from Offset Program Comparisons

Differences in project approval processes are correlated to the type of methodologies employed by the programs. More in-depth reviews are required by programs with a wider scope and project-by-project additionality and baseline determination approaches (e.g., CDM, JI, CH OP, VCS, and GS). These programs tend to rely on the CDM additionality tool, which involves assessing additionality based on the particular barriers (financial, investment, institutional, or other) faced by individual projects in comparison to other alternative investments or activities.

The CA COP, Québec's offset program, and CAR, on the other hand, use standardized additionality determination: all eligible project types are considered additional. Initial project approval under programs with more standardized methodologies therefore generally requires less in-depth project information because projects do not have to prove additionality and/or baseline scenarios on an individual basis. This reduces the administrative burden during the project approval process. The types of activities recognized as "additional" and eligible to earn credits are determined upfront in a kind of positive list by the program authority. The project approval stage is therefore more streamlined for individual project developers. This is also reflected in the length of the project documents. In the CDM, for example, they are usually 40–60 pages; in CA COP, they average six pages. A regular project submitted to CAR usually requires about one to two hours for a staff person to review (three staff members review the same project to ensure consistency and accuracy). Under the CDM, on the other hand, a project review—once the third-party validation has been completed—may require one to two days depending on the complexity of the project.

6.2. Project Verification and Issuance Procedures

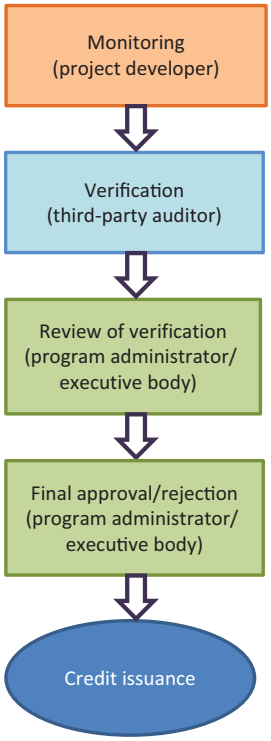
Once a project has been registered and implemented, it can submit claims for emissions reductions or removals and request the issuance of credits. Verification is the step that seeks to ensure that the credits that are issued correspond to the actual emissions reductions achieved. The emissions reductions have to be achieved in accordance with requirements of the applicable offset protocol for monitoring, quantification, and reporting. Verification is typically conducted by a third-party auditor at regular intervals after project implementation, as specified by the protocol and project type. Once the verification report has been accepted by the program authority, offset credits are then issued and placed in the project proponent's account on the program's registry. Figure 7 lays out the general sequence of the verification and credit issuance process. Table A.7 summarizes the MRV and credit issuance procedures.

Observations from Offset Program Comparison

Unlike the project registration process, all of the reviewed offset programs use the same sequence during the credit issuance process. All of the programs require that emissions reductions are verified

[15] Under CAR, projects are first listed—and only registered after the first verification.

Figure 7. General Sequence of Project Verification and Issuance Procedure



by third-party auditors. The verification report is submitted to the program administrator, where it is evaluated and, if approved, credits are issued. AU CFI, CA COP, CAR, VCS, and GS A/R have combined the validation and verification steps. Both validation and verification are conducted at the same point in time by the same auditor the first time a project submits documentation to receive offset credits.

The programs that use a top-down approach limited to a few eligible project types (AU CFI, CA COP, Québec, and CAR) have most likely minimized validation requirements because the approved project types have been deemed additional ex ante. As a result, the level of scrutiny required at the project or activity registration stage is reduced. The sequence of credit issuance may be similar in all programs because confirmation of the actual emissions reductions achieved requires careful MRV for almost all types of projects.

Differences exist in terms of the depth of information provided at verification. Project types that are based on methodologies that use standardized baseline scenarios and default values (such as grid emissions factors) require in general less detailed monitoring and verification information than programs and project types that require more project-specific information.

Scope for Streamlining in Verification

At the verification and credit issuance stages, offset programs aim to ensure the conservative and accurate accounting of emissions reductions while minimizing transaction costs for programs and project developers.

Offering standardized forms and tools can streamline and simplify the review as well as the application process for offset projects. Examples include look-up tables, default emissions factors, and standardized validation and verification forms, as well as "how to" manuals such as the GS Toolkit, the CDM Validation and Verification manual, and the CAR Program and Verification manuals. Such standardized approaches may not be suitable in cases where emissions vary greatly from project to project.

The following are other approaches to keep transaction costs low:

- Defining materiality thresholds (i.e., to provide for simple approaches in case of minor errors or deviations)
- Balancing frequency of credit issuance (as higher frequency increases issuance costs)
- Allowing aggregation of projects to make use of up-scaling, including programmatic approaches
- Standardizing and streamlining procedures
- Providing clear and unambiguous rules
- Providing guidance tools
- Ensuring consistency of evaluations
- Maximizing transparency

Programs are evolving and seem to increasingly use these streamlining tools. Coping with a heterogeneous range of activities under one program, however, poses challenges to streamlining processes.

7. Sustainable Development Aspects

While the key role of GHG offset programs is to recognize the emissions reductions (or emissions sequestration) of project activities compared with a baseline, offset activities can also contribute to other co-benefits, such as addressing local air or water pollution, enhancing access to energy services, and creating employment opportunities. These benefits are typically seen as the overall sustainable development benefits associated with individual offset project activities. All programs require that projects comply with sustainable development requirements in the jurisdiction where they are located. But the importance and or recognition that offset programs give to sustainable development aspects varies significantly among the programs considered in this note.

Eight of the considered offset programs mention the contribution to sustainable development in their program principles. The CDM, JI, AU CFI, CCER, JCM, CAR, VCS, and GS all mention sustainable development at as a goal for at least some project types. While such mention is common, the rules and procedures to require or enhance sustainable benefit aspects of offset projects vary significantly. Table A.9 summarizes the differing approaches, including stakeholder consultation requirements, sustainability benefit requirements, and do-no-harm safeguards.

Among the offset programs examined for this update, the GS has the most stringent and detailed requirements with respect to sustainable development contributions of eligible offset projects. A comprehensive sustainability assessment has to be performed for each GS project both before project registration and after project implementation, and the assessment is part of the verification process by

an independent third party. The GS includes an appeals body and a grievance mechanism to remediate issues during the crediting periods. The MRV of sustainability benefits in the GS leads to additional costs compared with other offset programs. On the other hand, GS projects on average fetch premium prices[16] as some voluntary offset buyers are ready to pay more for GS offsets[17] because they wish to support projects with independently verified sustainability co-benefits (e.g., because the offset program's requirements may mitigate reputational risks).

Under the CDM, eligible project activities should contribute both to meeting emissions reductions objectives and to the sustainable development of the host country. Each project has to list, in the project design document, what sustainability benefits it aims to deliver. The determination of what contributes to sustainable development is the prerogative of each individual CDM host country. Sustainable development requirements and benefits associated with CDM projects are therefore defined and evaluated by the relevant host country authority. There are significant differences in terms of what is required by host countries. The CDM does not have requirements to check ex-post if sustainability benefits have been achieved. As a result, the sustainability contributions of CDM project vary from project to project and are not easy to evaluate.[18]

CA COP, CAR, and VCS have specific sustainability requirements for land-use/forestry projects but not for other project types. CCER and JCM are still in the process of developing their sustainability requirements and procedures. AU CFI and CH OP have negative lists that exclude project types that may potentially be harmful to the environment or to communities. Sustainable development benefits are rarely considered by host countries in JI.

A stakeholder process is an important means to minimize the potential negative impacts of offset projects and to ensure potential sustainable development benefits when developing and approving offset projects. Such a process gives the affected population an opportunity to voice concerns and support and potential preferences. The requirements are considerably different among the programs; for example, the GS has extensive stakeholder requirements, the CDM has some (but not detailed) requirements, and other programs have limited or no such requirements (e.g., JI Track 1, AU CFI, CA COP, CH OP, VCS, CAR, and Québec).

Sustainable development as a distinct objective for offsets may be less relevant in some jurisdictions than in others. For example, in Australia, Switzerland, California, and Québec, the political and economic context for domestic offsets is very different from that of the CDM and GS (which are internationally focused and often hosted in less developed countries). It may be for this reason that CA COP, Québec, and CH OP do not include specific sustainability criteria.

[16] Information based on communications with GS.
[17] VERs are around $6, CERs and ERUs around $0.4 or less.
[18] It should also be mentioned that several buyers of offsets, including multilateral institutions, apply internal bank safeguards that may include similar sustainable development assessments. Sovereign buyers may also take these sustainability issues into account, typically in their due diligence of potential offset projects and in Emissions Reduction Purchase Agreements.

8. Conclusions

This Technical Note presents a comparison of 11 offset programs and provides an overview of the range of approaches used to design and administer offset programs (see tables in annex A).

The considered offset programs build on many common elements in terms of governance structure, methodologies, and processes. The offset programs can broadly be put into two groups:

Offset programs with broad scope	*Offset programs with selective scope*
• Few eligibility restrictions • International scope • Bottom-up • Limited standardization • Additionality determination is mostly project based	• Eligibility restricted to a few project types • Limited geographic scope • Top-down • Increased standardization, especially for additionality determinations
Examples: CDM, JI Track 1, CCER, JCM, GS, and VCS	Examples: AU CFI, CA COP, Québec, and CAR

In this categorization, the Swiss CH OP is a kind of hybrid: while the program is restricted in scope to entities and installations that are not covered by other carbon market instruments (such as the Swiss ETS), it is rather broad in terms of the scope of eligible project types.

Offset programs continue to evolve, and a wealth of experience has been gained over the last decade. Newer programs tend to learn from existing ones. In particular, the CDM has served as an important model and reference for all other offsets programs. Many of its procedural, methodological, and institutional elements have been copied and adapted. For example, the CDM has developed over 180 project methodologies. All of the other examined standards are using or have modified CDM methodologies and processes for their own programs.

Building on established international standards and infrastructure can reduce set-up costs and may bring credibility and compatibility, but local innovation in offset programs can address national priorities and also drive international progress on mitigation.

In addition to the CDM, other offset programs have brought innovations to the field as well:

- The GS developed a comprehensive framework to document, monitor, and verify sustainability benefits
- VCS has advanced the development of new project types (e.g., forestry) and standardization approaches
- CAR has pioneered a selective, top-down approach, standardizing approaches and simplifying the project cycle
- To manage risks of reversal or potential double counting Californian offsets can be invalidated up to eight years after the end of the reporting period (or after issuance for early action projects).
- Québec has an “environmental integrity” account that is filled with 3 percent of the credits of each project, taken at the point of issuance. In the event that a credit is found to be illegitimate, the

project developer is expected to replace it. If not, the credit can be replaced with a credit from the environmental integrity account and the project developer will face legal proceedings. There is therefore no liability on the buyer.

- CA COP, VCS, and CAR use buffers to address the risk of reversal for sequestration activities. These buffers can be tapped into for credit replacement.

While there are important similarities among the various offset programs, the variability of approaches confirms that there is no absolute one-size-fits-all. Offset program design depends on many factors, including:

- **Targeted Market Segment:** Offset programs have to target a certain market and then cater to the needs of buyers in that market. These needs may include a requirement for the program to be able to issue units recognized for compliance with the buyer's emissions trading system or a specific demand for units with specific characteristics (e.g., sustainability). The scope of the program will impact the amount of offsets supplied; thus, the scope should also be defined in light of the potential demand.
- **Regulatory Framework:** Offset programs need to take into account the regulatory framework In both the host and targeted buyers' countries (e.g., what is possible in host countries and what are the opportunities or restrictions for offsets to be eligible in potential buyer countries' systems).
- **Design:** The overall approach to standard design (top-down vs. bottom-up) in offset programs has to address whether a program encourages project developers to submit new methodologies for different project types in a broad scope of project types for the consideration and approval of the standard's regulatory body or whether a standard's regulatory body defines upfront the eligibility/additionality of a selective number of project types along with associated baseline and monitoring methodologies for project participants to be used when submitting new projects.
- **Technical and Institutional Capacities and Resources:** Offset programs have to consider available capacities and resources (e.g., different designs of offset programs have different implications in terms of the technical and institutional resources needed to run them).

All offset programs aim to balance the goal of quality assurance (i.e., safeguarding environmental integrity) with the need to keep costs and risks for programs and project developers minimal and to provide clear and predictable rules and guidance. Existing bottom-up programs, such as the CDM, VCS, and GS, are increasingly adding top-down procedure and standardization of approaches—and yet they remain, in principle, bottom-up, broad-scope programs. Standardization of approaches tends to reduce transaction costs for project developers but may lead to higher burdens for the development of standards for program administrators.

Learning from existing programs may be beneficial for emerging offset programs to avoid reinventing the wheel, as well as to ensure optimum program design and attractiveness to the market. Aiming for a certain level of consistency and comparability in the design between the different programs may also be beneficial to enable potential future linking between systems.

Annex A: Overview Tables of Evaluated Offset Programs

Text in italic indicates quoted text from program documents

Table A.1. Overview of Programs (as of July 2014)

Name of program	Type of program	Regional scope	Start of program	Projects registered as of July 2014 or as indicated	Tradable unit name	Units issued as of July 2014 or as indicated	Primary users of credits
Clean Development Mechanism (CDM)	Offset mechanism under the Kyoto Protocol (Article 12) Primarily project-based Also recognizes program-based mitigation	International host countries have to be developing (non-annex A) countries that have ratified the Kyoto Protocol	General rules established in 2001; first offset issued in 2005	7,554 as of Sept 2014	Certified Emission Reductions (CERs)	Over 1.4 billion as of Sept 2014	annex A countries that have a reduction commitment under the Kyoto Protocol Private buyers that are covered under an ETS (e.g., EU-ETS) Voluntary buyers
Joint Implementation (JI) Track 1	Offset mechanism under the Kyoto Protocol (Article 6) Primarily project-based Also recognizes program-based mitigation	International host countries have to be developed (annex B) countries that have a reduction target under the Kyoto Protocol	General rules established in 2001; national rules established individually in each country; first offset issued in 2008	532 as of Aug 2014	Emission Reduction Units (ERUs)	Over 830 million as of Aug 2014	annex A countries that have a reduction commitment under the Kyoto Protocol Private buyers that are covered under an ETS (e.g., EU-ETS) Voluntary buyers

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Table A.1. Overview of Programs (as of July 2014) *(continued)*

Name of program	Type of program	Regional scope	Start of program	Projects registered as of July 2014 or as indicated	Tradable unit name	Units issued as of July 2014 or as indicated	Primary users of credits
Australia's Carbon Farming Initiative (AU CFI)	Project-based offset mechanism The Clean Energy Act 2011 under which ACCUs were primarily used was repealed on July 17, 2014. The Australian Government has committed to expand the scope of the CFI and to establish the Emissions Reduction Fund under which it would be the primary purchaser of ACCUs.	Australia	December 2011	153	Australian carbon credit units (ACCUs)	Over 7.6 million as of August 2014	The primary users of ACCUs were entities that were required to meet the liabilities prescribed under the Clean Energy Act 2011 which established a carbon pricing mechanism. Voluntary buyers The Australian Government may become the primary purchaser of ACCUs under the Emissions Reduction Fund
California Compliance Offset Program (CA COP)	Project-based offset mechanism	Currently limited to United States as defined in the eligible methodologies as well as to Quebec through the linking of the two ETSs	Rules adopted in October 2011; first offset credits issued in September 2013	90 (plus 90 early action projects)	ARB offset credits	4.8 million (12 million including early action)	Entities covered by California's and the Quebec's Cap-and-Trade Programs Voluntary buyers

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Table A.1. Overview of Programs (as of July 2014) *(continued)*

Name of program	Type of program	Regional scope	Start of program	Projects registered as of July 2014 or as indicated	Tradable unit name	Units issued as of July 2014 or as indicated	Primary users of credits
Chinese CER (CCER)	Project-based offset mechanism	China	General rules established in 2012; project registration started in 2013	49	Chinese Certified Emission Reductions (CCERs)	0	Voluntary buyers (both Chinese and international) Compliance buyers from Chinese pilot ETSs
Québec's Regulation respecting a Cap-and-Trade System for GHG Allowances (Québec)	Project-based offset mechanism under the Québec ETS	Québec (Canada for 1 project type)	January 2013	0	Offsets	0	Entities covered by the Québec ETS and the California ETS Voluntary buyers
Switzerland's Offset Program (CH OP)	National offset mechanism Primarily project-based Also recognizes program-based mitigation	National	2008	26	Attestations	16,000	Attestations are typically used for compensation of CO_2 emissions by producers and importers of motor fuels (since 2013) and potentially by fossil-thermal power plant operators (since 2008). Attestations are not eligible for compliance in the Swiss ETS.

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Table A.1. Overview of Programs (as of July 2014) *(continued)*

Name of program	Type of program	Regional scope	Start of program	Projects registered as of July 2014 or as indicated	Tradable unit name	Units issued as of July 2014 or as indicated	Primary users of credits
Japan's Joint Crediting Mechanism (JCM)[a]	Bilateral project-based offset mechanism	International JCM partner countries include (as of Oct 2014) Bangladesh, Cambodia, Costa Rica, Ethiopia, Indonesia, Kenya, Lao PDR, Maldives, Mexico, Mongolia, Palau, and Vietnam.	First signing in January 2013 (with Mongolia)	0	Units currently not traded (*non-tradable credit type mechanism*); may become trading mechanism at a later date	0	Both government and private sector can be financing entities Both government and private sector entities can be allocated units
The Climate Action Reserve (CAR)	Project-based, voluntary offset mechanism Nonprofit organization Approved as a compliance offset project registry for CA cap-and-trade regulation	U.S. and Mexico	2008 (the California Climate Action Registry started in 2002)	221 as of August 13, 2014	Climate Reserve Tons (CRT)	53 million as of August 13, 2014	Voluntary buyers in the U.S. As an approved Offset Project Registry under the CA ETS, CAR can issue offsets for certain project types under ARB Compliance Offset Protocols. These offsets then have to be transitioned into ARB Offset Credits to be used for compliance under CA ETS.

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Table A.1. Overview of Programs (as of July 2014) *(continued)*

Name of program	Type of program	Regional scope	Start of program	Projects registered as of July 2014 or as indicated	Tradable unit name	Units issued as of July 2014 or as indicated	Primary users of credits
Gold Standard (GS)	Project-based voluntary offset mechanism Nonprofit organization Project-based, voluntary offset mechanism that can be used as add-on certification to CDM and JI projects or for voluntary projects	International	2003	VER: 285 CER: 183 LUF: 8	Gold Standard Voluntary Emission Reductions (GS VERs) GS CERs for CDM projects GS ERUs for JI projects	VER: 32 million CER GS label: 4.5 million	Mostly voluntary buyers GS CERs and ERUs—a few annex A countries that have a reduction commitment under the Kyoto Protocol (e.g., Switzerland). Private buyers that are covered under an ETS (e.g., EU-ETS)
Verified Carbon Standard (VCS)	Project-based voluntary offset mechanism Nonprofit organization Jurisdictional-level REDD+ programs Approved as a compliance offset project registry for CA cap-and-trade regulation	International	Launched in 2007 (version 1 in 2006)	1188	Verified Carbon Units (VCUs)	153 million	Voluntary buyers mainly in the U.S. and Europe As an approved Offset Project Registry under the CA ETS, the VCS can issue offsets for certain project types under ARB Compliance Offset Protocols. These offsets then have to be transitioned into ARB Offset Credits to be used for compliance under CA ETS.

[a] Please note that all technical details provided for the JCM are subject to further consideration and discussion with host countries.

Table A.2. Principles and Goals of Programs

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
CDM	*To assist Parties not included in annex I to the Convention in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3 of the Kyoto Protocol*. (Article 12, Kyoto Protocol)	*5. Emission reductions resulting from each project activity shall be certified […] on the basis of:* *(b) Real, measurable, and long-term benefits related to the mitigation of climate change; and* *(c) Reductions in emissions that are additional to any that would occur in the absence of the certified project activity.* (Article 12, Kyoto Protocol)	Decision 3/CMP.1 mentions conservativeness as a requirement when establishing baselines and standardization	Decision 3/CMP.1 mentionstransparency as a requirement, *inter alia*, for establishing baselines, monitoring and verification, and conduct of CDM Executive Board (EB) and other bodies. The Registry that tracks credits is open and can be followed by the public. Most documents are publically available; EB meetings partially streamed	One of the two main objectives of the mechanism (see Stated Purpose)	Projects can be hosted only by countries that have ratified the Kyoto Protocol and do not have emissions reduction targets under the Kyoto Protocol CERs are issued into the CDM Registry Each CER has a unique serial number, which includes a project identifier, party of origin and commitment period Transactions are tracked via the international transaction log (ITL) and national registries.

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
JI Track 1	JI was established for the *purpose of meeting [...] commitments* of Parties included in annex I (Article 6 Kyoto Protocol)	*Any such project provides a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur* (Article 6 Kyoto Protocol) Varies by host Party Under Track 1, additionality requirements are set by the host Party; thus the level of requirements with regard to the environmental integrity varies by host Party Typically environmental impacts have to be considered Some parties require EIA for all or certain project types.	Varies by host Party Under Track 1, requirements are set by the host Party In practice, JI Track 2 rules are usually applied, which require that baselines are established *taking account of uncertainties and using conservative assumptions* and ER calculations are *based on conservative assumptions* Decision 9/CMP.1 And Guidance on criteria for baseline setting and monitoring	Varies by host Party Host Parties are required to publish their JI rules, information on projects, and ERU transactions (Decisions 9/CMP.1 and 13/CMP.1) There have been issues with transparency, however, and this requirement has been reiterated by the CMP (e.g., COP 18 Decision on JI) Registered projects are listed on the UNFCCC website; the information is provided by host Parties The UNFCCC is not responsible for completeness or accuracy of documents The Registry that tracks credits is open and can be followed by the public.	Requirements are set by the host Party: *It is the host Party's prerogative to confirm whether an Article 6 project activity assists it in achieving sustainable development* (Decision 16/CP.7) In practice, sustainability benefits have not been regarded as critical by host countries	Projects can be hosted only by annex I Parties with emissions reduction targets under the Kyoto Protocol and established assigned amount units ERUs are issued through the conversion of assigned amount units (AAUs) or removal units (RMUs) Each ERU has a unique serial number, which includes a project identifier, party of origin, and commitment period Transactions are tracked via the international transaction log (ITL) and national registries.

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
AU CFI	To help Australia meet its international obligations under the UNFCCC and the Kyoto Protocol To create incentives for certain offsets that are consistent with the protection of Australia's natural environment To improve resilience to the effects of climate change	The scheme only credits emissions reductions that are genuine—that are both real and additional to business as usual. To be eligible, activities must be on the positive list. To be on the positive list, activities must be assessed to be additional.	The offsets integrity standards require that emissions reductions should be estimated on the basis of conservative assumptions.	The Clean Energy Regulator keeps an online public registry of Carbon Farming Initiative projects and credits issued.	The CFI includes a "negative list" to prevent projects that might cause adverse outcomes for the environment or the community (see table A.9).	ACCUs are created, traded, tracked, and retired in the CFL Registry Each ACCU has a unique serial number
CA COP	To lower compliance costs for entities covered under California's Cap-and-Trade Program To incentivize emissions reductions in sources not covered by the program	An ARB offset credit must represent a GHG emissions reduction or GHG removal enhancement that is real, additional, quantifiable, permanent, verifiable, and enforceable.	Standardized baselines built into the protocols are set conservatively	Projects must use an approved Compliance Offset Protocol. Projects must meet listing, reporting, and verification requirements. Listings, Offset Project Data Reports, and Offset Verification Statements are publicly available.	No specific sustainability requirement	ARB offset credits are created, traded, tracked, and retired in the Western Climate Initiative's (WCI) Compliance Instrument Tracking System Service (CITSS). Regulated entities are liable for invalidated offsets that they have tendered for compliance

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
CCER	To support China's 2020 target of 40–45 percent CO_2 emissions reductions per domestic GDP by 2020 compared to 2005 level To promote voluntary GHG emissions trading	The GHG emissions reductions should be real, measurable, verifiable, and additional	*Guidelines on Validation and Verification of Voluntary GHG Emission Reductions Projects* mentions conservativeness as a requirement when establishing baselines and standardization.	National registry is open for public and credits can be traced in registry PDD will probably be accessible to the public	Sustainability is one of the requirements in the process of project application approval by NDRC	Offsets are tracked in a national registry. Each CCER has a unique serial number, which includes party of origin and commitment period In pilots, CCERs from projects within the boundary of covered entities cannot be used for compliance
Québec	To lower compliance costs To incentivize emissions reductions in sectors not covered by the Qc-ETS Source	The reductions in GHG emissions must be real, permanent, and irreversible, as well as additional and verifiable Source	Standardized baselines built into the protocols are set conservatively	The Ministry of the Environment of Québec will keep a registry including contact information of project developers, registration information listing project reports, project reports, validation and verification reports, and information on project status	No requirements for sustainability benefits	The project developer has to declare that will not apply for credits for the GHG emissions reductions under another GHG emissions reduction program

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
CH OP	To assist Switzerland in achieving compliance with its mitigation commitments under the Kyoto Protocol To achieve prescribed emissions reductions from emissions by producers and importers of motor fuels and by fossil-thermal power plant operators as required by the Swiss CO_2 law	The GHG emissions reductions have to be verifiable and quantifiable. The project has to show that it would not be feasible without the revenue from the sale of certificates and is not economically viable.	Guidelines for validation and verification of the offset program mention conservativeness as a requirement when establishing baselines and standardization	Many documents (e.g., project fact sheets, methodological guidance, workshop material) are publically available on a website	No requirements for sustainability benefits A negative list excludes potentially harmful project types	Certificates (vouchers) from national projects can only be sold to restricted national buyers (e.g., fuel importers) and are tracked Certificates cannot be used for international compliance There is specific guidance on avoiding double counting on a national level (e.g., with the use of biofuels)
JCM	Fostering low-carbon growth Facilitating diffusion of leading low carbon technologies and services To achieve Japan's emissions reduction target Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emissions reductions or removals, complementing the CDM	Environmental integrity should be taken into account in the design and implementation of JCM JCM is seeking a net decrease of GHG emissions (in line with the Framework for Various Approaches) JCM aims to implement this by assuring that reference emissions scenarios are below business as usual (BAU)	A crediting threshold should be established conservatively in order to calculate reference emissions below BAU emissions Default values to calculate project emissions (instead of measuring) are derived conservatively	*Transparency* should be *taken into account* in design and implementation	C*ontributing to sustainable development of developing countries* is part of the JCM's *Basic Concept*	Double counting is excluded: preventing uses of any mitigation projects registered under the JCM for the purpose of any other international climate mitigation mechanisms to avoid double counting of GHG emissions reductions or removals Depending on the agreement between countries, emissions reductions are shared between the host country and Japan so there is no double counting If a project is registered under the JCM, it may not be registered in another program (Rules of Procedures)

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
CAR	*Promote the reduction of greenhouse gas emissions by pioneering credible market-based policies and solutions. http://www.climateactionreserve.org/about-us/mission/*	*The Reserve's program rules and procedures, eligibility criteria, and quantification and verification protocols are designed to ensure that GHG emission reductions certified by the Reserve are:* › *Real […]* › *Additional […]* › *Permanent […]* › *Verified […]* › *Owned Unambiguously […]* (Section 1.2 Program Manual)	› *Conservative assumptions, values, and procedures should be used to ensure that GHG reductions are not overestimated* › *Reserve protocols employ conservative estimation methods whenever data and assumptions are uncertain and measures to reduce uncertainty would be impractical.* (Program Manual)	*Sufficient information should be disclosed to allow reviewers and stakeholders to make decisions about the credibility and reliability of GHG reduction claims with reasonable confidence* (Section 2.2 Program Manual) › CAR uses an open, stakeholder-driven process for developing methodologies; › Methodologies are publicly available; › Documentation for all listed projects is publically available on the CAR's registry	*Project activities should not cause or contribute to negative social, economic or environmental outcomes and ideally should result in benefits beyond climate change mitigation* (Section 1.2 Program Manual)	CAR rules are designed to ensure that: *GHG emission reductions certified by the Reserve are:* *Owned Unambiguously: No parties other than the registered project developer must be able to reasonably claim ownership of the GHG reductions* (Section 1.2 Program Manual) Project developers sign an Attestation of Title that protects against double counting each time CRTs are issued (Section 3.1.6, Program Manual) CRTs tracked in CAR's registry, units have individual serial numbers. CAR staff cross reference each project with projects listed on publicly available registries prior to issuing CRTs

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
GS	*[…] to ensure that [GS carbon offset projects] demonstrate real and permanent greenhouse gas (GHG) reductions and sustainable development benefits in local communities that are measured, reported and verified* (NGOs and The Gold Standard) *[…] the purpose of The Gold Standard is to encourage innovation, provide legitimacy, and enable pragmatism in the compliance and voluntary market for the technologies within scope* (The Gold Standard Requirements)	*To be eligible for GS certification, projects must:* › *Adhere to the strictest standards on additionality* › *Positively impact the economy, health, welfare and environment of the local community hosting the project*	Conservativeness is stated as one of the fundamental principles of the GS: *[…] The Gold Standard relies on conservative choices that are well-documented and traceable* (The Gold Standard Requirements)	*[…] a commitment to verifiable information and transparency* is listed among the key principles of the GS (The Gold Standard Requirements) Project participants have to transparently demonstrate their compliance with the GS requirements Documentation for all registered projects is publicly available on the GS Project Registry	Sustainability is a core requirement Sustainability aspects of the projects are examined before and after implementation through a sustainability assessment, in addition to emissions reduction reporting Sustainable development indicators are monitored, reported, and verified	For CDM and JI projects certified by GS, respective CDM and JI registries are used The GS maintains a registry of projects and VER credits, which have unique serial numbers A project participant shall provide *[…] a clear and convincing demonstration that no double counting and/or claiming would arise from the issuance of Gold Standard carbon credits.* (The Gold Standard Requirements) Projects not allowed in annex B countries

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Table A.2. Principles and Goals of Programs *(continued)*

Name of program	Stated purpose	Environmental integrity	Conservativeness	Transparency	Sustainability	Avoidance of double counting
VCS	*To provide a trusted, robust and user-friendly program that brings quality assurance to voluntary carbon markets* *To pioneer innovative rules and tools that open new avenues for carbon crediting and allow businesses, non-profits and government entities to engage in on-the-ground climate action* *To share knowledge and encourage the uptake of best practice in carbon markets so that markets develop along coherent and compatible lines even as top-down regulations take shape http://v-c-s.org/who-we-are/mission-history*	VCS Program Criteria for GHG Projects GHG emissions reductions and removals verified and issued as VCUs must be: › Real › Measurable › Permanent › Additional › Independently Audited › Unique › Transparent › Conservative (VCS Program Guide 3.4)	Conservativeness is defined as *use conservative assumptions, values and procedures to ensure that net GHG emission reductions or removals are not overestimated* *When highly uncertain data and information are relied upon, conservative values shall be selected that ensure that the quantification does not lead to an overestimation of net GHG emission reductions or removals* VCS Standard 3.3	Transparency is defined as *disclose sufficient and appropriate GHG-related information to allow intended users to make decisions with reasonable confidence* Documentation for all registered projects and VCUs is publicly available on the VCS Project Database	AFOLU projects must identify negative environmental and socioeconomic impacts and take steps to mitigate them All projects are required to report on environmental impact assessments and stakeholder consultations All projects are encouraged to demonstrate social and environmental benefits beyond carbon, especially through certification with standards such as CCBS and Social Carbon (VCUs can be tagged with these certifications)	*There must be no double counting of the environmental benefit, in respect of the GHG emission reductions or removals* (VCS Program Guide 3.4) A secure registry system that offers assurance against double counting and provides transparency to the public Project proponents must demonstrate, and VCS registry administrators check, that GHG emissions reductions or removals presented for VCU issuance have not also been issued under any other GHG program or been recognized as another form of GHG-related environmental credit (such as RECs) Projects are not allowed in countries with a reduction target under the Kyoto Protocol, unless cancellation of AAUs occurs (VCS Double Counting: Clarification of Rules)

Table A.3. Operationalized Principles (as of July 2014)

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
CDM	All except nuclear facilities Forestry projects are limited to afforestation and reforestation (e.g. no protection of existing forests)	Bottom-up, project-by-project, as well as top-down	184 total (89 large scale, 92 small scale, 4 LULUCF), as of Sept 2014	› The project participant develops and proposes a new methodology through a DOE › The secretariat makes it available for public comments and prepares a draft recommendation › The relevant Meth Panel or working group makes its draft recommendation to the EB › EB makes the final approval decision	*In an operational context, the terms "measurable" and "attributable" in paragraph 51 of the CDM modalities and procedures should be read as "which can be measured" and "directly attributable", respectively* (EB 5, annex 3, paragraph 10(d)). Considered: precise rules depend on methodology	Considered Specific rules vary by methodology

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
JI Track 1	All except nuclear facilities	Bottom-up, project-by-project Requirements set by host Party. In practice, rules are usually based on JI track 2 which allows (A) CDM methodologies; or (B) elements thereof; or (C) project-specific approaches	Not determined, as projects can develop project-specific approaches (or use CDM methodologies)	No formal methodology approval process The description of the methodology is included in the PDD and assessed by an AIE as part of the determination process	Under track 1, requirements are set by the host Party. Typically, the rules are based on track 2: *Project participants must undertake an assessment of the potential leakage of the proposed JI project and explain which sources of leakage are to be calculated, and which can be neglected. Leakage to be included shall be quantified and a procedure provided for an ex ante estimate* (Guidance on criteria for baseline setting and monitoring.)	Under track 1, requirements are set by the host Party. Typically indirect emissions are considered, as it is required in track 2

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
AU CFI	Emissions avoidance and sequestration projects in the land sector Legacy waste projects are also eligible	Methods are assessed by the Domestic Offsets Integrity Committee Both bottom-up and top down approaches have been used	25 (as of August 2014)	Methods are reviewed by the Domestic Offsets Integrity Committee (an independent expert committee) and then approved by the Minister for the Environment	Methods must account for increases in emissions as a result of the project	Considered in methodology development and approval
CA COP	Currently approved: › Livestock › Mine methane capture › Ozone-depleting substances › U.S. forest › Urban forest Scope may be broadened via new protocols	Based on the most updated science and information, including quantification methods in existing voluntary program protocols B and C Developed top-down	5	ARB staff periodically review voluntary offset protocols and coordinate with WCI partners to assess the protocols Protocols proposed by ARB staff go through a public stakeholder development process and must be approved in a formal rulemaking process Source	Compliance Offset Protocols must account for activity-shifting leakage and market-shifting leakage for the offset project type, unless the protocol stipulates eligibility conditions that eliminate the risk of activity-shifting and/or market-shifting leakage	GHG emissions reductions must be a direct reduction within a confined project boundary

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
CCER	The regulation is applied to trading activities of the following six GHG emissions: CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 (i.e. no explicit exclusion of REDD or nuclear activities but there are currently no methodologies for these sectors)	NDRC organizes experts to evaluate CDM methodologies Criteria: CDM methodologies are translated into Chinese and should be simplified and adapted for China NDRC evaluates new methodologies submitted by project developers or research institutions	Currently 178 CCER methodologies approved by NDRC (96 large scale, 78 small scale, 4 forest and agriculture), 173 of which CDM methodologies	For non-CDM-based methodologies, project participant develops and submits to NDRC. NDRC assigns 2–3 independent experts to do technical evaluations (60 working days) NDRC takes into account the experts' opinions and approves or rejects them within 30 working days	Considered Precise rules depend on methodology	Same rules as under the CDM
Québec	Livestock manure management Landfill gas Ozone-depleting substances from appliance foams and refrigerants More protocols are being developed	Top-down Developed by the government of Quebec (Sustainable Development, Environment, and the Fight against Climate Change) based on existing protocols and the Western Climate Initiative's rules	3	› All current protocols developed by the government › Western Climate Initiative will serve as a forum for the development of more methodologies › Each new protocol added to the regulation is subject to a 60-day consultation period	Considered Precise rules depend on methodology	Considered Precise rules depend on methodology

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
CH OP	All types allowed except for: › Nuclear energy › CCS › R&D activities › Biofuels that do not fulfill prescribed ecological standards › Fuel switch to natural gas in transport and building sector	Bottom-up, project-by-project, as well as top-down development B and C	Each project/ program applies individual methodology. See the list of approved projects here. Currently three standardized methodologies under top-down development	› The project participant develops and proposes a new methodology in the context of the project documentation › A validator evaluates the methodology and drafts recommendations › The governmental agency in charge makes the final approval decision	Considered Precise rules depend on methodology	Considered Specific rules vary by methodology
JCM	No restrictions	Bottom-up, and top-down, project-by-project and standardized baselines as threshold will be determined for each sector/technology for each country Requirements set by the *Joint Committee*. B, and C	Three methodologies have been approved (Mongolia and Indonesia)	› Bottom-up methodologies are submitted by project participants (private sector) › Completeness check by secretariat (7 days) › Public inputs (15 days) › Assessment (60–90 days) › Approval by JC	All major emissions sources have to be included Precise rules depend on methodology	There are no explicit procedures to include upstream emissions Precise rules depend on methodology

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
CAR	Coal mine methane Forestry* Landfill gas (U.S. and Mexico) Livestock manure management (U.S. and Mexico)* Nitrogen management N_2O abatement at nitric acid plants Organic waste composting Organic waste digestion O_3-depleting substances* Rice cultivation Urban forest* * Project types eligible under CA (only located in the U.S.)	Top-down developed by CAR B, C*: Quantification often based on CDM methodologies but tailored for U.S. circumstances More standardized additionality and baseline criteria than under CDM	15	Methodologies developed in consultation with multi-stakeholder workgroup Draft methodologies posted on website throughout development and for final 30-day public comment period Technical reviewers are asked to submit comments Public workshop is held during public comment period to solicit additional comments Final approval by Board (at meetings, which are open for public comment)	*The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage").* (Program Manual) Considered and addressed in each protocol	Preference is to focus on project types that yield direct emissions reductions (Section 4.1, Program Manual) If there are significant sources of indirect emissions affected by the project, indirect emissions are included in quantification Indirect emissions may also be excluded if it is conservative to do so (Section 2.5, Program Manual)

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
GS	Renewable energy Energy efficiency—industrial Waste handling and disposal Land use and forests	Bottom-up, project-by-project. A, B, C Applicable CDM methodologies Eight GS approved methodologies	14 GS VER methodologies and applicable CDM methodologies	The project participant develops and proposes a methodology to the GS Secretariat GS involves two external experts to review the methodology The GS independent Technical Advisory Committee (TAC) makes the approval decision The process is different for projects developed under the GS micro-scale scheme, where methodologies can be proposed along with projects applying for registration	Considered Precise rules depend on methodology	Considered Precise rules depend on methodology

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Table A.3. Operationalized Principles (as of July 2014) *(continued)*

Name of program	Projects types	Methodology development Code used for type of methodologies used in other programs: A= CDM, B= CDM-based and amended or simplified C= new methodologies	Number of methodologies as of July 2014 or as indicated	Methodologies approval process	Leakage (increase in emissions outside the project boundary caused by the offset activity)	Indirect emissions (refer to the energy use in end-use sectors and account for the emissions associated with the upstream production of the end-use energy)
VCS	All CDM sectoral scopes ODS AFOLU (afforestation, reforestation, revegetation, forest management, REDD, agriculture, avoided grassland/ shrubland conversion, wetland restoration/ conservation) Projects that reduce HFC-23 emissions are not eligible	Bottom-up, project-by-project Focus on standardization (see here) A, B, C* All CAR (except CAR forest protocols) and CDM methodologies To incentivize new, broadly applicable methodologies, VCS rebates 20 percent of the levy on VCU issued to methodology developers when a project uses the methodology they developed	30 VCS methodologies plus CAR and CDM methodologies	The project participant develops and proposes a methodology to the VCS Secretariat Draft methodologies are posted on the website for a 30-day public comment period Two approved validation/verification bodies (VVBs) independently assess the methodology and must provide a positive assessment The VCSA conducts an in-depth review of the methodology and assessment reports Final approval by the VCSA (VCS Methodology Approval Process Section 3.3.2, 3.4.5, 3.6.2)	Considered Specific rules vary by methodology In particular, AFOLU projects must account for relevant market, activity shifting, and ecological leakage	Considered Specific rules vary by methodology

Table A.4. Operationalized Principles: Additionality and Baselines

Name of program	Rules on additionality determination	Rules on baseline setting
CDM	Usually determined project-by-project Some small-scale positive lists have been developed, and technologies on a positive list are automatically considered additional *A CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity* (Decision 3/CMP.1) Rules on demonstrating additionality defined in Additionality Tool: › Step 1: Identification of alternatives to the project activity › Step 2: Investment analysis to determine that the proposed project activity is either (a) not the most economically or financially attractive or (b) not economically or financially feasible › Step 3: Barrier analysis › Step 4: Common practice analysis	Usually determined project-by-project Standardized approaches are currently being developed for some project types *The baseline for a CDM project activity is the scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity* (Decision 3/CMP.1) Rules on setting baselines defined in combined Additionality and Baseline Setting Tool and the relevant methodologies
JI Track 1	Under track 1, requirements are set by the host Party and determined on a project-by-project basis *[...] a host Party may verify reductions in anthropogenic emissions by sources or enhancements of anthropogenic removals by sinks from an Article 6 project as being additional to any that would otherwise occur [...]* (Decision 9/CMP.1) In practice, verification of additionality varies significantly by host Party, and JI track 2 rules are often applied, which allow for use of the CDM Additionality Tool	Under track 1, requirements are set by the host Party and determined on a project-by-project basis *The baseline for an Article 6 project is the scenario that reasonably represents the anthropogenic emissions by sources or anthropogenic removals by sinks of greenhouse gases that would occur in the absence of the proposed project* (Decision 9/CMP.1) In practice, Track 2 Guidance on Criteria for Baseline Setting and Monitoring is often used
AU CFI	Additionality test requires: › the project must go beyond common practice › must not be required by another law	Baseline must represent what would likely occur in the absence of the project Baselines must be set according to the provisions of an approved method

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Table A.4. Operationalized Principles: Additionality and Baselines *(continued)*

Name of program	Rules on additionality determination	Rules on baseline setting
CA COP	GHG emissions reductions and GHG removal enhancements must be beyond what would otherwise be required by law, regulation, or legally binding mandate, and exceed what would otherwise occur in a conservative business-as-usual scenario Offset credits can only be generated in sectors not covered by the CA Cap-and-Trade Program	Protocols incorporate standardized baselines set in accord with regulations and common practice Before protocols are adopted, ARB staff undertakes a public process consulting with stakeholders through workshops and/or technical working groups before proposing a protocol After proposing a protocol, ARB staff takes its proposed protocol through a full stakeholder process consistent with California's Administrative Procedures Act
CCER	Same as in CDM	178 methodologies as of Feb. 2014, of which 173 originated from CDM
Quebec	The reductions in GHG emissions: *(a)* must result from a project that is voluntary, that is that it is not being carried out, at the time or registration of renewal, in response to a legislative or regulatory provision, a permit or other type of authorization, an order made under an Act or regulation, or a court decision *(b)* must result from a project that goes beyond the current practices described in the applicable protocol for the project	Standardized baselines are developed considering other regulations and common practice Before the regulation is adopted, including its offsets methodologies, a consultation period allows for comments from industry and other interested parties
CH OP	Usually determined on a project-by-project basis Rules on demonstrating additionality: › Step 1: Identification of alternatives to the project activity › Step 2: Investment analysis to determine that the proposed project activity is either (a) not the most economically or financially attractive or (b) not economically or financially feasible › Step 3: Barrier analysis › Step 4: Common practice analysis In programs, additionality can be determined for single activities on the basis of additionality criteria, similarly to the approach in the programmatic CDM	Usually determined on a project-by-project basis The approach is very similar to CDM

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Table A.4. Operationalized Principles: Additionality and Baselines *(continued)*

Name of program	Rules on additionality determination	Rules on baseline setting
JCM	Additionality determination is substituted by eligibility criteria for each of the methodologies, similar to a positive list Both governments (Japan and the host country) determine what technologies, products, etc., should be included in the eligibility criteria through the approval process of the JCM methodologies by the Joint Committee Eligibility criteria for registration can be based on: › the efficiency of products/technologies (e.g., tons output/ kWh), a *benchmark approach*, or › type of product/technology (i.e., the group of accumulating methodologies will eventually form a kind of *positive list*) › Only projects that started their operation on or after January 1, 2013, are eligible for the JCM (Rules of the procedures for the JC—Mongolia)	The methodologies do not require the analysis of different hypothetical scenarios for baseline scenario determination; rather they prescribe one "reference emissions scenario" and reference emissions are calculated by multiplying a "crediting threshold" which is typically expressed as GHG emissions per unit of output by total outputs The crediting threshold is calculated ex ante in the methodology for a specific project type and country It is established conservatively in order to calculate reference emissions below BAU emissions
CAR	***Additional****: GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions—i.e., those that would occur in the absence of a GHG reduction market—should not be eligible for registration.* (Section 1.2 Program Manual) CAR additionality criteria include: (1) a legal requirement test (2) a performance standard test (Section 2.4 of the Program Manual)	The Reserve uses standardized baselines in its protocols to the extent possible Standardized baselines are developed in consultation with stakeholders by considering broad trends in the industry or sector relevant to a project type and determining what future "business-as-usual" alternatives are likely to be. Some project-specific calculations and emissions factors may be used to ensure accuracy, or where standardized methods would result in estimates that are overly conservative. (Section 2.6.1, Program Manual)

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Table A.4. Operationalized Principles: Additionality and Baselines *(continued)*

Name of program	Rules on additionality determination	Rules on baseline setting
GS	› GS relies on the UNFCCC's decision on additionality for CDM or JI projects applying for GS registration, and GS CDM or JI projects are not required to carry out further demonstration of additionality › GS VER projects apply UNFCCC additionality requirements, including small-scale projects, validated by the DOEs and further checked by the GS Secretariat › Positive list approach for GS micro-scale projects	Determined project-by-project *"Baseline" means the amount of greenhouse gas emissions that would be produced in the absence of the carbon credit project, also known as the business-as-usual scenario, which forms the basis for calculating a project's emissions reductions and helps determine additionality.* (The Gold Standard Requirements) Baseline setting in VER projects is similar to that in CDM and JI
VCS	All projects approved under the VCS must be additional, and the additionality requirements are those set out in the methodology that the project uses (e.g., the CDM Additionality Tool) New methodologies can include new approaches for the demonstration of additionality, either within the methodology or as a separate tool; both are subject to the VCS Methodology Approval Process (see Section 4.6 of the VCS Standard 3.3) A number of methodologies under development are applying a positive list for additionality, in line with the VCS framework for standardized methods	Usually determined on a project-by-project basis, although standardized approaches are under development for a number of project types *In developing the baseline scenario, assumptions, values, and procedures shall be selected that help ensure that net GHG emission reductions and removals are not overestimated* (VCS Standard 3.3)

Table A.5. Governance Structure

Name of program	Executive body	Program administrators	Advisory boards	Auditors and accreditation as of July 2014
CDM	**The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol** (CMP) includes all counties who have ratified the Kyoto Protocol. CMP has authority over and makes rules for the CDM, decides on the recommendations made to the Executive Board, and designates auditors (DOEs) that are provisionally accredited by the Executive Board. **CDM Executive Board (CDM EB, 10 members plus 10 alternates)** provides final approval of: › project registrations › credit issuance › methodologies › accrediting auditors The EB meets bimonthly and reports to the CMP	› **UNFCCC Sustainable Development Mechanisms (SDM); Registration and Performance Monitoring/ Issuance and Performance Monitoring Team** (177)**:** › Review validation or verification reports › Prepare background information and analysis on project activities › Undertake technical assessments of the compliance of new requests for issuance	› **CDM Methodology Panel** (16 members) › **CDM Afforestation/ Reforestation Working Group** (8 members) › **CDM Small-Scale Working Group** (8 members) analyzes and makes recommendations related to new and approved methodologies › **CDM Accreditation Panel** (10 members) analyzes and makes recommendations related to accrediting DOEs › **Carbon Dioxide Capture and Storage Working group** (7 members) prepares recommendations proposals for new baseline and monitoring methodologies	**Designated Operational Entities** (DOEs) 45 accredited companies: › conduct validations and verifications of CDM projects › DOEs are accredited by CDM EB based on recommendations by the CDM accreditation panel › DOE performance is spot-checked. › In case of non-compliance, DOEs can be suspended by the CDM EB › DOEs are paid by project developers
JI Track 1	***The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol*** *(CMP) shall provide guidance regarding the implementation of Article 6 [...]*. Decision 9/CMP.1 › **National governments** establish procedures for: › project approval › accreditation of auditors › project registration › MRV credit issuance	**National Designated Focal Points (DFPs)** are in charge of: › appraisal of project idea and its endorsement (most countries have this initial step) › project approval › project registration › accrediting auditors (if envisaged, otherwise Track 2 AIEs are used) › decision on ERU issuance	Varies by host Party In some cases DFPs may consult with in-house or external experts	**Accredited Independent Entities** (AIEs) › Under track 1, accreditation requirements are set by the host Party › In practice, in most countries auditors accredited by the JI Supervisory Committee (JISC) for Track 2 are used › AIEs accredited for Track 2 are not accountable to the JISC for performance under Track 1 › Auditors are paid by project developers

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Table A.5. Governance Structure *(continued)*

Name of program	Executive body	Program administrators	Advisory boards	Auditors and accreditation as of July 2014
AU CFI	The Australian Government The Department for the Environment develops methods which are approved by the Minister for the Environment	The Clean Energy Regulator is responsible for project approval and issuing ACCUs for emissions reductions	Proposed CFI methods are assessed by an independent expert committee, the Domestic Offsets Integrity Committee	The *National Greenhouse and Energy Reporting Act 2007* empowers the Clean Energy Regulator to register individuals as greenhouse and energy auditors and to keep a register of those individuals. CFI and Emissions Reduction Fund auditors must be accredited through this process. › Auditors are paid by project developers
CA COP	› California Air Resources Board members, appointed by the Governor and confirmed by the Senate, adopt the California Cap-and-Trade Regulation, its amendments, and its Compliance Offset Protocols › Executive Officer approves Offset Project Registries and accredits both verification bodies and verifiers	ARB staff in Program Operations Section, Climate Change Program Evaluation Branch, Industrial Strategies Division (ARB/ISD/CCPEB/POS): Oversee entire Compliance Offset Program and issue ARB offset credits in CITSS. Approve Offset Project Registries list projects, review project reporting documents, review verification documents, and issue registry offset credits	*Stakeholder workgroups*	*Verification Bodies and verifiers must be accredited by ARB, meeting requirements in Section 95978 of Cap-and-Trade Regulation and Section 95132 of Mandatory Reporting Regulation* › Auditors are paid by project developers
CCER	National Development and Reform Committee is coordinating the process together with related ministries (e.g., Ministry of Science and Technology, Foreign Affairs, Finance, Environmental Protection)	Climate change department in NDRC	Ad hoc selection of experts	› NDRC accredits 6 auditors Requirements are issued and guideline for validation and verification similar to VVS › Auditors are paid by project developers

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Table A.5. Governance Structure *(continued)*

Name of program	Executive body	Program administrators	Advisory boards	Auditors and accreditation as of July 2014
Québec	*Ministry of Sustainable Development, Environment and the fight against climate change* (MDE) is responsible for: › Project approval › Project registration › Methodologies › Approving verification done by third parties › Approving auditor accreditation › Credit issuance › Approving new protocols › Approving significant revisions to existing protocols Providing strategic guidance to organization and areas of new protocol development	MDE staff: › Review all the documentation requested by the promoters (registration form, project report) › Review verification reports	In house experts of the MDE and other government experts	› Auditors must be accredited under ISO 14065 by a member of the International Accreditation Forum (ANSI or Standard Council of Canada) according to an ISO 17011 program › Auditors are paid by project developers
CH OP	› Overall strategic decisions are taken by a steering committee with representatives from the Federal Office for the Environment (FOEN) and the Swiss Federal Office of Energy › A national agency operated by FOEN is in charge of implementation and further development of the OP	Governmental agency under FOEN: › Pre-evaluate proposed projects › Review validation or verification reports of methodology and monitoring › Conduct final assessments of the compliance of new requests for issuance › Issue certificates › Prepare background information and standardized methodologies	› Pool of expert validators and verifiers to assess the projects › Experts are employed for research and consulting concerning methodological questions › Regular workshops with stakeholders	**Designated Operational Entities** (DOEs) Nine approved companies: › conduct validations and verifications of projects and monitoring reports › DOEs are accredited by governmental agency based on their expertise › DOE performance is checked through spot-checks and verification procedures by other DOE › In case of non-compliance DOEs can be suspended by the agency › DOEs are paid by project developers

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Table A.5. Governance Structure *(continued)*

Name of program	Executive body	Program administrators	Advisory boards	Auditors and accreditation as of July 2014
JCM	For each host country, a separate Joint Committee (JC) is formed, which consists of representatives from both governments. Each JC: › Develops/revises the rules, guidelines, and methodologies › Registers projects › Discusses the implementation of JCM › Conducts policy consultations	The Joint Committees are supported by the *Secretariat* The secretariat supports the JC in its tasks	*The JC can establish panels and appoint external experts to assist with part of its work*	*Third Party Entities,* are › UNFCCC accredited DOEs, or › Certification bodies that are accredited under ISO 14065 › Auditors are paid by project developers
CAR	**Board of Directors** (13) Approves new protocols Approves significant revisions to existing protocols Provides strategic guidance to organization and areas of new protocol development **Climate Action Reserve Staff** (23) Gives final approval of project submittal, verification, registration	**Climate Action Reserve Staff** (23) Review (and give final approval) of project submittal, verification, registration Administer all aspects of developing methodologies Provide training, oversight, and monitoring of third-party verification bodies	**Stakeholder workgroups and outside expert review groups (convened ad-hoc)** Give guidance and recommendations for developing new or revised project protocols.	**Accredited Verification Body** (10) Prepare verification report, verification opinion, and list of findings for review and final determination by CAR staff Verification bodies must be: › Accredited by ANSI under ISO 14065:2007 for specific project sector groupings related to approved protocols › Auditors are paid by project developers › Reserve conducts random audits of verification › Reserve maintains rights to rescind or suspend its recognition of a verifier or verification body (Section 2 and 5, Verification Program Manual)

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Table A.5. Governance Structure *(continued)*

Name of program	Executive body	Program administrators	Advisory boards	Auditors and accreditation as of July 2014
GS	**The Gold Standard Foundation Board** › Provides financial oversight and strategic governance of the Gold Standard Foundation **GS Secretariat** (30): › Stakeholder consultation approval › Review and approval of registration of projects › Review and approval of issuance of credits › Strategic and technical development, including new methodology and tool approvals, operational performance › Registry management Capacity building for DOEs and project developers, marketing and fundraising	See GS secretariat	**The Gold Standard Technical Advisory Committee (TAC, 13)** is an independent body composed of market specialists that provide expertise, guidance, and decisions on methodology approval, rule changes and appeals › Comments on specific issues during project reviews if requested by Gold Standard Secretariat › Conducts a full project review if requested by NGO supporters or by project proponents in case of rejection at registration or issuance stages › Is the first stage of escalation for GS Appeals and Grievance Mechanism **Land-use & Forests Advisory Panel** A specialist advisory group established to support the development of GS LULUCF scheme. **Supporting NGOs** (85 organizations) › can request clarification/ corrective action at registration and issuance stages can request full review of projects by TAC	**DOEs or AIEs accredited under UNFCCC** for the relevant scope **(see CDM and JI)** *GS recommends selecting a DOE or AIE who has an affinity with The Gold Standard values* (The Gold Standard Requirements) DOEs and AIEs conduct validations and verifications of GS projects and submit to Gold Standard Secretariat for review and approval With some exceptions, the verifying DOE has to be different from the validating DOE GS conducts DOE trainings every three months Auditors are paid by project developers

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Table A.5. Governance Structure *(continued)*

Name of program	Executive body	Program administrators	Advisory boards	Auditors and accreditation as of July 2014
VCS	**VCS Board** Is the Governance board Approves all substantive changes to the standard or the program, procedures, new standards, or guidelines **VCS Association** (VCSA) manages the VCS Program day to day: Conducts accuracy reviews of projects prior to registration and issuance Oversees the validation/verification bodies operating under the VCS Program Manages the methodology approval process Convenes steering committees, advisory committees or working groups to support its work	**VCS management & staff (21)** The program team at the VCS comprises three functional areas: › Program management › Methodologies, › Program development All substantive changes to the VCS Program must be approved by the VCS Board	**AFOLU Steering Committee** Oversight of the VCS' Agriculture, Forestry and Other Land Use (AFOLU) program, including development of new frameworks (e.g., for Jurisdictional and Nested REDD+) and AFOLU technical issues **AFOLU Expert Assessment Panel** reviews qualifications of AFOLU experts and recommends candidates to VCS Some VCS advisory groups are ad-hoc groups of outside experts, created for specific purposes, and disbanded when work is complete **AFOLU Technical Working Groups** **Standardized Methods Steering Committee**	**VCS validation/verification bodies** conduct project validations and verifications, and methodology assessments VCS auditors must have: › Approval by the UN Clean Development Mechanism (CDM) as a Designated Operational Entity (DOE) or › Approval by the UN Joint Implementation (JI) as an Accredited Independent Entity (AIE) or › Accreditation by the American National Standards Institute (ANSI) for ISO 14065 scope VCS or › Approval under the Climate Action Reserve (CAR) as a Verification Body (VB) › Auditors are paid by project developers

Table A.6. Project Registration Procedures

Name of program	Project design document	Third-party validation	Stakeholder consultation requirements	Letter of approval	Completeness/ consistency check	Review	Final decision
CDM	Project design documents include detailed project information, additionality and baseline determination, and projected emissions reductions Length typically 40–60 pages	DOE	Local stakeholders have to be informed and a meeting has to be held PDD must list stakeholder comments Guidelines are general Global: 30 days of public consultation on website CDM EB is currently discussing ways to improve the requirements	By host party DNA, including that the project activity assists it in achieving sustainable development If applicable, by annex I Party authorizing the buyer's participation in the project	UNFCCC Secretariat	Project participant (PP) or at least three EB members may request a review within 28 days of receipt of the registration request PP and DOE have 28 days to respond, and both the secretariat and two RIT members independently make the assessment If the secretariat and RIT propose the **same decision,** it becomes final within 20 days unless a CDM EB member objects—and such cases are then decided at the next EB meeting Cases where the secretariat and RIT propose **different decisions** are decided at the next EB meeting	No review: technically the EB is responsible, but in practice final decision is made by RIT and secretariat

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Table A.6. Project Registration Procedures *(continued)*

Name of program	Project design document	Third-party validation	Stakeholder consultation requirements	Letter of approval	Completeness/ consistency check	Review	Final decision
JI Track 1	Requirements set host Party JI track 2 template is usually used, which includes detailed project information, additionality and baseline determination, and projected emissions reductions Length typically 40–60 pages	Performed by an AIE Called "PDD Determination"	Host party sets requirements Normally participants are required to inform local stakeholders Some DFPs publish project information (including PDD) for public comment prior to approval	1) By a host country DFP; in some cases approval is equal to registration, which typically takes from 1–2 months to half a year 2) By an investor Party DFP (another AI Party), which also authorizes buyer's participation	Host country DFP	Requirements set by host Party Typically there are no review procedures	DFP
AU CFI	Project design must adhere to an approved CFI method Methods set out the rules for implementing a project To register a CFI project, applicants must fill out an "Application for Declaration of an Eligible Offsets Project"	Not separately required Verification bodies confirm eligibility during first verification	No stakeholder consultation requirement for project registration	The Clean Energy Regulator notifies proponents of the outcome of their application in writing If approved, the Regulator issues a Declaration that the project is an eligible offsets project	Performed by the Clean Energy Regulator	Review happens at verification/credit issuance stage	Made by the Clean Energy Regulator

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Table A.6. Project Registration Procedures *(continued)*

Name of program	Project design document	Third-party validation	Stakeholder consultation requirements	Letter of approval	Completeness/ consistency check	Review	Final decision
CA COP	Offset Project Data Reports, which become publicly available after registry offset credit issuance, must include all information required by Cap-and-Trade Regulation and applicable Compliance Offset Protocol	Not separately required Verification bodies confirm eligibility during first verification	No stakeholder consultation	Not required	Offset Project Registry staff	Review happens at first verification/ credit issuance stage.	ARB staff makes recommendation to ARB management for issuance
CCER	PDD similar to CDM	Performed by third party auditor	Each project is subject to stakeholder consultation as part of validation (same as in CDM)	Not required	Third-party auditor does pre-check	Before approval there is review process/ meeting with other related ministries	Climate change department in NDRC

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Table A.6. Project Registration Procedures *(continued)*

Name of program	Project design document	Third-party validation	Stakeholder consultation requirements	Letter of approval	Completeness/ consistency check	Review	Final decision
CH OP	Project design documents include detailed project information, baseline and monitoring methodology, additionality and baseline determination and monitoring procedures Length varies, typically 40–60 pages	DOE	No stakeholder consultation requirements	By governmental agency	DOE and governmental agency	Review happens at first verification/ credit issuance stage	Governmental agency
Québec	Detailed project information is found in the request form and the Project Report	Not separately required. Verification bodies confirm eligibility during first verification.	No stakeholder consultation.	Not required	MDE staff	Review happens at first verification/ credit issuance stage	Legally the minister of the MDE based on evaluation of the MDDELCC

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Table A.6. Project Registration Procedures *(continued)*

Name of program	Project design document	Third-party validation	Stakeholder consultation requirements	Letter of approval	Completeness/ consistency check	Review	Final decision
JCM	JCM PDDs include information on eligibility criteria, projected emissions reductions, environmental impact assessment, and stakeholder consultation No information on additionality and baseline determination due to positive list approach	Performed by *Third Party Entity* Validation consists of eligibility check	No guidelines on local stakeholder consultations have been defined so far Global: 30 days of public consultation on website	Both host country and Japan are represented in project registration; no separate letter of approval by governments	Secretariat (7 days)	There are no review procedures yet.	JC
CAR	"Project submittal form" based on standardized project type specific submission templates (see here) Typical length: 2 pages Project submittals reviewed within 10 business days of submission	Not required Verification body confirms eligibility during initial verification, but there is not a separate validation step	Not required	Not required	CAR staff conduct initial eligibility check (less involved than CDM validation) based on project submittal form project is "listed"	Review happens at first verification/ credit issuance stage (see table A.7)	Climate Action Reserve staff

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Table A.6. Project Registration Procedures *(continued)*

Name of program	Project design document	Third-party validation	Stakeholder consultation requirements	Letter of approval	Completeness/ consistency check	Review	Final decision
GS	UNFCCC PDD forms and guidelines are used for all projects (including VER) The Gold Standard Passport must be included, which includes *inter alia* sustainability monitoring plan GS PDD length similar to UNFCCC PDD GS Passport Length: typically 20–30 pages	DOE Micro-scale projects (<10,000 tCO_2e per year): GS Secretariat and/ or Objective Observer	A local stakeholder consultation is conducted early in the project cycle; listing of the project is conditional on approval of the local stakeholder consultation report During a 60-day period prior to completion of the validation process, stakeholders again have the opportunity to comment (stakeholder feedback round)	GS CDM and JI (see above) GS VER: not required but project developer has to notify the DNA	GS Secretariat Within a few days from notification of submission, less than a week	NGO supporters (review) GS Secretariat and GS-TAC (review and final decision) Total 8 weeks: 6 weeks for GS TAC and NGO Supporters, 2 weeks for GS Secretariat to compile comments Issuance stage: 2 weeks for GS TAC and NGO supporters, 1 week for GS Secretariat to compile comments (3 weeks total).	GS Secretariat and GS-TAC
VCS	VCS Template (9 pages) includes detailed project information (Project Description, v3.1)	Validation may occur before first verification or at same time as the first verification	Not required	Not required	Registries are under contract with VCS, have been trained, and are overseen by VCSA	VCS undertakes accuracy reviews of projects prior to registration or issuance	VCS staff

Table A.7. MRV and Credit Issuance Procedures

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
CDM	Monitoring requirements defined in methodologies and in other guidance and standards provided by the EB	DOE verifies information in monitoring report DOE (must differ from the one that did the validation)	UNFCCC Secretariat: certification report submitted to secretariat by DOE (Certification report: formal confirmation by a DOE that the emissions reductions which are set out in the verification report were achieved)	PP or at least 3 EB members may request a review within 28 days of the receipt of request of issuance. PP and DOE have 28 days to respond Secretariat and two RIT members independently make assessment If the secretariat and RIT propose the **same decision,** it becomes final within 20 days unless a CDM EB member objects, and such cases are then decided at the next EB meeting Cases where the secretariat and RIT propose **different decisions** are decided at the next EB meeting	No review: RIT and secretariat Review: EB	CDM Registry is administered by the UNFCCC secretariat Once the EB has approved CER issuance for a project activity, the CERs are issued into the pending account of the EB, and project participants may then request the UNFCCC secretariat to forward the issued CERs to their accounts in the CDM Registry and/or registries of annex I Parties
JI Track 1	Requirements set by host Party. Typically, the rules are similar to the Guidance on criteria for baseline setting and monitoring of JI Track 2, including rules for monitoring	AIE (unlike CDM, AIE can be the same as the one that performed determination)	Requirements set by host Party DFP checks the compliance of the verification reports with the national JI rules The depth of the revision varies by host Party	Requirements set by host Party There is no standardized review process	Host country DFP	National Registries of the host Parties DFP is responsible for ERU issuance decision, which is implemented by the Registry administrator: AAUs or RMUs are converted into ERUs and transferred to a buyer's account in respective investor Party's Registry

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
AU CFI	Proponents must monitor and calculate emissions reductions according to the rules set out in an approved method	A prescribed audit report is a mandatory requirement for proponents who wish to apply for ACCUs Auditors must be registered greenhouse and energy auditors under the *National Greenhouse and Energy Reporting Act 2007*	Review of offsets reports is conducted by the Clean Energy Regulator	Proponent submits an offsets and audit report which is then reviewed by the Clean Energy Regulator for each reporting period To be eligible for ACCUs, the project's prescribed audit report must provide either a reasonable assurance conclusion or a qualified reasonable assurance conclusion for each of the matters audited	Made by the Clean Energy Regulator.	The Clean Energy Regulator manages the Australian National Registry of Emissions Units (ANREU) The ANREU is a secure electronic system designed to accurately track the ownership of: › Emissions units issued under the Kyoto Protocol › ACCUs issued under the CFI › Carbon units issued under the former carbon price

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
CA COP	Monitoring requirements specified in Cap-and-Trade Regulation and Compliance Offset Protocols	ARB-accredited verification bodies and verifiers review information in offset project data report and other documentation about project performance and regulatory compliance	Approved Offset Project Registries and ARB staff	Offset Project Registries have 45 days to review projects after receiving an Offset Verification Statement; ARB has 45 days to review after receiving complete and accurate information for a Request for Issuance of ARB compliance offset credits	ARB staff makes recommendation to ARB management for issuance	ARB offset credits are created, traded, tracked, and retired in the Western Climate Initiative's (WCI) Compliance Instrument Tracking System Service (CITSS) Offset Project Registries (OPR) are approved by the California Air Resources Board (CARB) to help administer the program (currently three are approved—CAR, VCS and the American Carbon Registry): OPRs facilitate registration but have no formal affiliation with CARB, and cannot adopt protocols or issue CARB credits

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
CCER	Monitoring requirements defined in each methodology	The validation organization that validates the project with over 60,000 tons of emissions reductions is not allowed to certify the emissions reduction of the same project	Ad hoc selection of experts	The time of reviewing shall not be longer than 30 working days	Climate Change department of NDRC	National registry run by NDRC tracks units
Québec	Monitoring defined in each methodology	Accredited Verification Body (must have verified less than seven monitoring reports for the same project and not have acted as a consultant) Verifies information in project report	Review by MDE staff	Verification report submitted by project developer to MDE and reviewed for approval Upon approval, the project developer is issued credits in their account in the registry	The minister of the MDE based on an evaluation of the MDDELCC	The government registry on the MDDELCC's website

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
CH OP	Similar to CDM Monitoring approach developed by project owner, assessed by validator and approved by governmental agency Some requirements defined in standardized methodologies and in other guidance by the governmental agency	DOE verifies information in monitoring report DOE (must differ from the one that did the validation)	Governmental agency: verification report submitted to agency by DOE (verification report: formal confirmation by a DOE that the emissions reductions which are set out in the verification report were achieved)	No review process in place	Governmental agency	The certificate registry is administered by the governmental agency Once the agency has approved the issuance for a project activity, the certificates are issued into the pending account of the agency
JCM	Monitoring requirements defined in each methodology The methodologies seek to use default values as much as possible to reduce monitoring costs	Performed by Third Party Entity Validation and verification can be conducted simultaneously or separately Verification report is submitted by Third-Party to PP, which then forwards the report to the JC (no direct submission from Third Party to JC)	The secretariat conducts a completeness check	A standardized review process has not been developed yet	Joint Committee	› Each government (host country and Japan) can establish and maintain a registry, (voluntary for host country) › On the basis of notification for issuance of credits by the JC, each government issues the notified amount of credits to its registry

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
CAR	Monitoring defined in each methodology	Accredited Verification Body: › Confirms eligibility and conformance with methodology during initial verification à project is "registered" › Verifies information in monitoring report Verification should generally take no more than six months	Climate Action Reserve staff	Verification report submitted by project developer to CAR and reviewed for approval determination Three-person internal teams of Climate Action Reserve staff review verification reports and opinions for completeness and accuracy within 10 business days A manager must sign off on the review, and verification reports may be sent back for adjustments or corrections. Verification report review generally occurs within 10 business days of submittal to CAR (although length of review varies by project and issues identified) Upon approval, the project developer is issued credits in their account in the CAR's registry	Climate Action Reserve staff	The CAR's registry is operated by APX, a U.S. environmental registry provider

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
GS	Project participants have to monitor GHG reductions and sustainable development aspects GHG monitoring is done in accordance with PDD prepared under UNFCCC standards (see CDM above) Sustainability monitoring has to conform to sustainability monitoring plan in GS Project Passport GS VER monitoring reports usually shorter than for CDM projects	DOE (for large scale projects, DOE must be different in verification from the one who performed the validation) Micro-scale project activities: GS Secretariat and Objective Observer	NGO supporters (review) GS Secretariat & GS-TAC (review and final decision)	Upon receipt of the verification report, the GS initiates a 3-week period during which GS TAC and GS NGO Supporters may request further clarification or corrective action GS Secretariat reviews verification documents GS labels CERs or ERUs, or issues credits in its VER registry Average time needed for GS secretariat review: 0.5–1.5 days	GS Secretariat & GS-TAC	The GS Registry manages the full lifecycle of GS VERs The registry also includes information on GS-labeled CDM and JI projects

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Table A.7. MRV and Credit Issuance Procedures *(continued)*

Name of program	Monitoring	Third-party verification	Review verification report	Review process	Final decision	Registry information
VCS	VCS Template: Monitoring Report, v3.2	VCS approved auditor	VCS approved auditors	Emissions reductions are verified and approved by the auditor and submitted to a VCS registry The independent VCS Registry Operators are responsible for verifying completeness of documentation and check that the project has not been previously registered under the VCS Program VCS undertakes accuracy reviews of projects prior to registration or issuance The registry administrator creates the issuance record on the VCS project database, which in turn issues VCU serial numbers	VCS staff	VCS has two approved independent VCS Registry Operators: APX Inc., and Markit VCS Registries are independent from the VCS Association and check project documents for completeness The VCS registry system is able to conduct inter-registry transfers The two VCS Registries are supplemented by the central VCS Project Database, which is the publicly available central repository of all project and VCU information and generates unique VCU serial numbers

Table A.8. Renewal of Crediting Period

Name of program	Crediting period	Rules for renewal of crediting period
CDM	10 years (non-renewable) or 7 years (renewable twice, for 21 years in total)	Baseline, estimated emissions reductions and the monitoring plan using the latest approved methodology. New LoA not required. Validity of baseline is to be reassessed (M&P); baseline scenario is not reassessed (EB guidance).
JI Track 1	Tied to length of Kyoto commitment period (i.e. 5 years for the 1st Kyoto commitment period, 8 years for the 2nd Kyoto commitment period)	The extension of the crediting period of a project to be decided by respective host Party
AU CFI	The standard crediting period is seven years unless a different crediting period is provided for the activity through the CFI Regulations. Reforestation and revegetation projects typically have a 15-year crediting period. The exception is for native forest protection projects which have a crediting period of 20 years.	Projects can be approved for subsequent crediting periods provided they continue to pass the additionality test and other criteria
CA COP	The crediting period for a non-sequestration offset project must be no less than 7 years and no greater than 10 years, unless specified otherwise in a Compliance Offset Protocol. The crediting period for a sequestration offset project must be no less than 10 years and no greater than 30 years.	A crediting period may be renewed if the offset project meets the requirements for additionality The crediting period for non-sequestration offset projects may be renewed twice; sequestration offset projects are not subject to any renewal limits
CCER	Same as in CDM, defined in the individual methodologies: 10 years (non-renewable) or 7 years (renewable twice, for 21 years in total).	Same as in CDM
Québec	› 10 years for manure and landfill projects › 5 years for ODS projects › No limit on how many times a project can renew its crediting period	At the expiration of that period, the promoter may request the renewal of the offset credit project, for the same period as the initial period Re-validation is required based on the current version of the methodology
CH OP	7 years (renewable for 3 years at a time after re-validation during the project life time) Renewal is possible until the end of the project lifetime	At the expiration of the 7-year period, the project developer may request the renewal of the offset project for three more years. This renewal request can be repeated again every three years for the project life time. A re-validation is required each time based on the current version of the methodology, and re-validation includes a reassessment of the baseline scenario and of additionality

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Table A.8. Renewal of Crediting Period *(continued)*

Name of program	Crediting period	Rules for renewal of crediting period
JCM	There is no defined crediting period JCM covers period until the reaching of an international agreement (ca. 2020)	No defined crediting period
CAR	Length of a project's crediting period is defined in each methodology In general: 2 times 10 years for non-AFOLU (Agriculture, Forestry and Other Land Use) projects For AFOLU projects, crediting period may be as few as 5 years but renewable up to three times (agriculture) and up to 100 years but not renewable (forestry)	Must meet the requirements of the most recent version of the methodology available at the time of renewal, including any updates to eligibility requirements Project developer must apply for a renewal during the last six months of the project's expiring crediting period
GS	Consistent with CDM (either one-off 10 year period or up to 3 times 7 year periods)	Baseline and sustainability assessment has to be renewed by project participants and revalidated by DOE after each 7-year period PP have to redo local stakeholder process or justify why it is not needed
VCS	Two times 10 years for non-AFOLU projects, other than AFOLU projects reducing N_2O, CH_4 or fossil-derived CO_2, minimum of 20 years, maximum 100 years for AFOLU projects, with renewal of baseline every 10 years	A full reassessment of additionality is not required Regulatory surplus has to be demonstrated Validity of the original baseline scenario has to be demonstrated or, where invalid, a new baseline scenario has to be determined (VCS Standard 3.3)

Table A.9. Sustainable Development Aspects

Name of program	Stakeholder consultation requirements	Sustainability requirements	Appeals process/grievance mechanism	Do-no-harm safeguards
CDM	Local stakeholder consultation is part of the project validation process. The Global Stakeholder Process is conducted by displaying the PDD on the UNFCCC or DOE's website for 30 days, during which time Parties, stakeholders and UNFCCC-accredited observers may make comments. These comments are also made publicly available.	No UNFCCC rules. Requirements established and enforced by each host country. Sustainability contributions evaluated ex-ante before the registration of the project. LoA by host country DNA includes host country approval of a project's sustainable contributions. Voluntary tool for describing sustainable development co-benefits was approved in 2012.	Appeals process has been discussed under SBI of the COP/MOP; so far Parties have not been able to agree on who should be able to appeal and if an appeals process should only apply for rejected requests for registration/issuance or also for approved requests	None[a]
JI Track 1	Requirements set by host Party. Typically, the local stakeholders have to be informed and local stakeholder consultation is part of the PDD determination process. Some DFPs publish project information for public comments prior to project approval.	Requirements set by host Party Sustainability is not usually regarded as a high priority in JI and not required for project approval, and yet some projects voluntarily mention sustainability aspects in PDD If appraised, sustainability contributions are evaluated ex-ante before project approval by DFP	None	None[b]
AU CFI	No stakeholder consultation requirements for project developers	In determining whether to approve a method, the Domestic Offsets Integrity Committee and the Minister consider any adverse impacts which may arise as a result of the project as well as consider whether the method includes activities excluded from the CFI on the "negative list"	The law provides that a proponent can seek an internal review of certain statutory decisions made by the Clean Energy Regulator in relation to the CFI before going to the Administrative Appeals Tribunal	The CFI includes a "negative list" to prevent projects that might cause adverse outcomes for the environment or the community Negative list activities include planting of weeds, establishment of vegetation on illegally or recently cleared land, and establishment of vegetation on illegally or recently drained wetlands

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Table A.9. Sustainable Development Aspects *(continued)*

Name of program	Stakeholder consultation requirements	Sustainability requirements	Appeals process/grievance mechanism	Do-no-harm safeguards
CA COP	No stakeholder consultation requirements for project developers	No specific sustainability requirement, but projects must fulfill all local, regional, and national environmental and health and safety laws and regulations that apply based on the offset project location and that directly apply to the offset project	In general, disagreements among offset project operators, verifiers, and the Offset Project Registries may be appealed to ARB Some determinations by ARB may be appealed to ARB for reconsideration	During adoption of the protocol, ARB does an analysis of any potential harm from a potential project under the California Environmental Quality Act
CCER	Same as in CDM	Contributing to the sustainable development of the society is one of the requirements in project registration process at NDRC	None	None
Québec	No stakeholder consultation requirements for project developers	No sustainability requirements	None	None
CH OP	No stakeholder consultation requirements for project developers	No requirements for sustainability benefits Negative list of project technologies	All decisions by BAFU can be contested before the Federal Administrative Court	There is guidance by the agency that validators should evaluate whether the project technology causes any major negative ecologic or social impacts
JCM	The local stakeholder consultation is part of the project validation process and to be documented in the PDD The global stakeholder process is conducted by displaying the PDD on the JCM's website for 30 days, during which time stakeholders may make comments; these comments are also made publicly available	An environmental impact assessment is part of the project validation process and must be documented in the PDD The EIA follows the requirements of the host country	None at this point in time	

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Table A.9. Sustainable Development Aspects *(continued)*

Name of program	Stakeholder consultation requirements	Sustainability requirements	Appeals process/grievance mechanism	Do-no-harm safeguards
CAR	No stakeholder consultation requirements for project developers	No requirements for sustainability benefits for non-forestry projects For forestry projects, project proponents must meet sustainability and natural forest management requirements, including use of native species and mixed age classes for trees	Appeals process is provided in the Verification Program Manual, Section 5.1.3 The Reserve convenes a Dispute Resolution Committee made up of staff, Board Members, and applicable outside agencies to hear the appeal	"Do No Harm" Beyond Legal Requirements[b]
VCS	No stakeholder consultation requirements for project developers	No requirements for sustainability benefits for non-AFOLU projects For AFOLU projects, project proponents must identify potential negative environmental and socioeconomic impacts and take steps to mitigate them VCS also encourages projects to use an add-on standards which serve as labels and has tagging agreements with CCB, Social Carbon, and the Thai Government's Crown Standard programs	Complaint and appeals procedure is provided in the VCS Program Guide, This is a two-step process, whereby complaints are processed by the VCS Association and overseen by the CEO. If the complainant is unsatisfied with the response to the complaint, it may appeal. Appeals are addressed and overseen by the VCS Board	For AFOLU, there are various provisions (see VCS AFOLU Requirements) For non-AFOLU, there is currently no explicit do no harm

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Table A.9. Sustainable Development Aspects *(continued)*

Name of program	Stakeholder consultation requirements	Sustainability requirements	Appeals process/grievance mechanism	Do-no-harm safeguards
GS	The GS provides DOEs with a checklist which provides guidance on how to assess issues from the Local Stakeholder Consultation outcomes and which DOEs must apply Local Stakeholder Consultation must be performed before project start date and must include a discussion on the sustainable development aspects of the project; results of the stakeholder consultation must be documented and made publicly available, after which a Stakeholder Feedback Round for 60 days is conducted to inform stakeholders about any changes made to project design based on their feedback and to receive further comments by stakeholders All Gold Standard NGO supporters have the right to comment on the project at regular, defined intervals in the project cycle	Sustainability assessment has to be performed both ex-ante (before project registration) and ex-post (after project implementation) Ex-ante includes: › Consideration of project's risks and benefits for sustainable development › Do-No-Harm Assessment › Detailed Sustainability Impact Assessment. › Preparation of Sustainability Monitoring Plan Ex-post assessment includes: › Preparation of the Sustainability Monitoring Report (to be prepared together with emissions reduction monitoring report) › Verification of the Sustainability Monitoring Report by DOE, including site visit for every verification	**Appeals Body**: provides project developers with a provision to appeal decisions by the GS with respect to project registration and to issuance or labelling of credits **Grievance Mechanism:** All projects must have a formal continuous input mechanism in place to remediate issues identified during the crediting period as early as possible and prior to verification. Unforeseen issues that may arise during the course of the project that are not identified in the Monitoring Plan can also be addressed this way and local stakeholders can suggest improvements or modifications based on their understanding of the local situation.	The approach is based on the safeguarding principles of the UNDP and derived from the Millennium Development Goals Assessment (see GS annex H) covers human rights, resettlement, removal of cultural, sustainable development and social equity, heritage, freedom of association, compulsory labor, child labor, discrimination, healthy work, environment, precautionary approach in regard to environmental challenges, degradation of critical natural habitats, and corruption

[a]Although CDM and JI do not include "do-no-harm" provisions at the program level (UNFCCC), some buyers, including the World Bank, Asian Development Bank, and other multilateral institutions apply internal bank safeguards, including do-no-harm provisions. Such provisions have also been included in some sovereign buyers' due diligence of potential CDM projects and Emissions Reduction Purchase Agreements (ERPAs).

[b]In some cases, the Reserve may determine, in consultation with stakeholders, that existing legal requirements are insufficient to guarantee protection against important environmental and social harms. In these cases, the Reserve may include additional criteria in protocols to ensure that projects will not give rise to these harms, or may screen out certain project types or activities from eligibility under a protocol altogether. (Environmental and Social Safeguards Policy Memorandum, 2012.)

Annex B: Other Offset Programs

This update of the technical report has focused on categorizing a selection of offset programs and is not an exhaustive list of all offset programs. The work has deliberately not included offset labels or norms which, unlike offset programs, do not issue their own credits or have their own registry, but rather identify specific qualities of an offset project or activity in comparison to others that do not qualify for the label. The following table includes a list of the offset programs and labels that could not be included in this report.

Offset program	Summary
American Carbon Registry (ACR)	In the voluntary market, ACR oversees the registration and independent verification of projects that meet ACR Standards and follow ACR-approved carbon accounting methodologies. ACR brands the premium verified emissions reductions (VERs) issued against ACR standards as emission reduction tons (ERTs). One ERT is equivalent to one metric ton of carbon dioxide.
Costa Rican Offset Standard	Companies that have agreed to achieve carbon neutrality may achieve this neutrality using offsets from activities to reduce GHG in the renewable, transport, agriculture, waste management, and sustainable construction sectors. The offset standard will draw on existing standards such as CDM, VCS, and ISO 14064-2.
EPA Climate Leaders Offset Guidance	Companies participating in the voluntary Climate Leaders program may use offsets to achieve their emission reduction targets. Valid offset programs must use the methodologies established by the Climate Leaders Program. Methodologies exist for methane end use, commercial boiler and industrial boiler efficiency improvements, landfill methane projects, manure management, reforestation/afforestation on and transit bus projects.
JI Track 2	Under the JI Track 2 process, the determination of the eligibility of the project and the monitoring and verification of emissions reductions are subject to the procedure under the Joint Implementation Supervisory Committee (JISC) as opposed to under the supervision of the national government. To participate in JI Track 2 a country must have assigned amount units (AAUs) under the Kyoto Protocol and have a national registry that meets UNFCCC requirements.
J-VER	The Ministry of the Environment in Japan launched the offset credit (J-VER) scheme in November 2008 as a voluntary carbon offset scheme to encourage individuals and businesses to mitigation greenhouse gases. The certified emissions reductions under the scheme may be used for voluntary offsetting or for GHG emissions accounting, reporting, and disclosure. The scheme is based on ISO 14064-2 There are approximately 40 methodologies developed.
Panda standard-	The China Beijing Environment Exchange (CBEEX) and BlueNext founded the Panda Standard. As the first Chinese domestic voluntary carbon standard, it is designed to provide transparency and credibility in the nascent Chinese carbon market.

Offset label/ norm	Summary
Brasil Mata Viva Standard (BMV)	The Brail Mata Viva Program is a standardized system and processes to measure the sustainable development impacts of a project or activity in rural areas in the form of a ton of CO_2e. Each ton of CO_2 reduced is recognized with a single sustainability unit referred to as the UCS^{VT}BMV certificate. The program is for sustainable rural production.
CarbonFix Standard	The CarbonFix Standard applies to afforestation, reforestation, natural regeneration, and agro-forestry projects that demonstrate a commitment to socioeconomic and ecological responsibility. In September 2012, the Gold Standard (GS) acquired CarbonFix in order to support its expansion into land use and forestry. Existing CarbonFix projects are being hosted by GS and will transition into Gold Standard projects if they meet the rules under GS version 3.0.
Climate Community & Biodiversity Standard (CCBS)	The CCB Standards are project-design criteria for evaluating land-based carbon mitigation projects' community and biodiversity co-benefits. As a co-benefits-only standard, GHG reductions are generated using an offset program.
International Green-e Climate	Green-e Climate certifies GHG emissions reductions (offsets) sold in the market—not the projects that generate them. Green-e Climate certified emission reductions must be sourced from projects validated and registered with an endorsed project standard and certification program. The aim is to provide buyers with assurance that the project is from a high-quality project, that reductions are not double counted, and that the buyer receives all information needed when purchasing an offset.
ISO 14064-2	The International Organization for Standardization launched ISO 14064 in 2006 as a three-part set of policy-neutral, voluntary GHG accounting standards. ISO 14064-2 is an offset standard protocol that provides definitions and procedures to account for GHG reductions. It is intended for use in conjunction with an established offset program.
Plan Vivo standard	Plan Vivo certifies forestry offset programs, ensuring that livelihood needs are considered and built into project design and that local income sources are diversified to reduce poverty and tackle the root causes of deforestation and land degradation. The Plan Vivo standard is a label that is applied to offsets generated from an offset program.
SOCIALCARBON standard	The SOCIALCARBON Standard is a certification program based on the sustainable livelihoods approach that requires project developers to apply standard indicators that correlate with six aspects of the project: social, human, financial, natural, biodiversity, and carbon. SOCIALCARBON is another "stacking" standard to be paired with an offset program.

Source: Ecosystems Marketplace State of the Voluntary Carbon Markets 2013 and 2014, offset standards websites.

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