

# Options to Use Existing International Offset Programs in a Domestic Context



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Please direct any comments and questions about this study to the PMR Secretariat (**[pmrsecretariat@worldbank.org](mailto:pmrsecretariat@worldbank.org)**).

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## Abbreviations

AIE	Accredited Independent Entities
ANREU	Australian National Registry of Emissions Units
ANSI	American National Programs Institute
ARB	Air Resources Board
CAR	Climate Action Reserve
CCBS	Climate Community & Biodiversity
CCEE	Chinese Certified Emission
CCER	Chinese Certified Emission Reduction
CCS	Carbon capture and storage
CDM	Clean Development Mechanism
CEQA	California Environmental Quality Act
CER	Certified Emission Reductions
CITSS	Compliance Instrument Tracking System Service
DNA	Designated National Authority
DOE	Designated Operational Entities
EAOP	Early Action Offset Programs
EB	Executive Board
EUTL	European Union Transaction Log
FSC	Forest Stewardship Council
GHG	Greenhouse gas
GS	Gold Standard
IAF	International Accreditation Forum
JC	Joint Committee
JCM	Joint Crediting Mechanism
JI	Joint Implementation
JISC	JI Supervisory Committee
LoA	Letter of Approval
LUF	Land use and forest
NCOS	National Carbon Offset Standard
OPR	Offset Project Registries
PMR	Partnership for Market Readiness
SC	Social Carbon
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VER	Voluntary Emission Reductions
VVB	Validation and verification bodies



# 1. Introduction

## 1.1. Objective

Over the past 25 years, significant experience on offsetting greenhouse gas (GHG) emissions has been built up through the development, implementation and improvement of various international and domestic offset programs. A wide range of approaches adapted to different circumstances have been explored. Currently a number of countries, regions and sectors are contemplating designing their own domestic offset programs. Considering if and how existing international offset programs can be used is important in this exercise.

This Technical Note is part of the Partnership for Market Readiness (PMR) technical work program. Its objective is to support PMR country participants currently planning and/or designing domestic offset programs to identify how existing international offset programs can be best leveraged to develop domestic offset arrangements that suit their national circumstance. This can be at different levels of dependency, ranging from full reliance on international programs to fully independent domestic programs, and everything in between. It should be noted that this Note does not aim to clarify how best to design a domestic offset program, but rather focuses on how to use the experience of established international programs in this exercise.

## 1.2. Structure

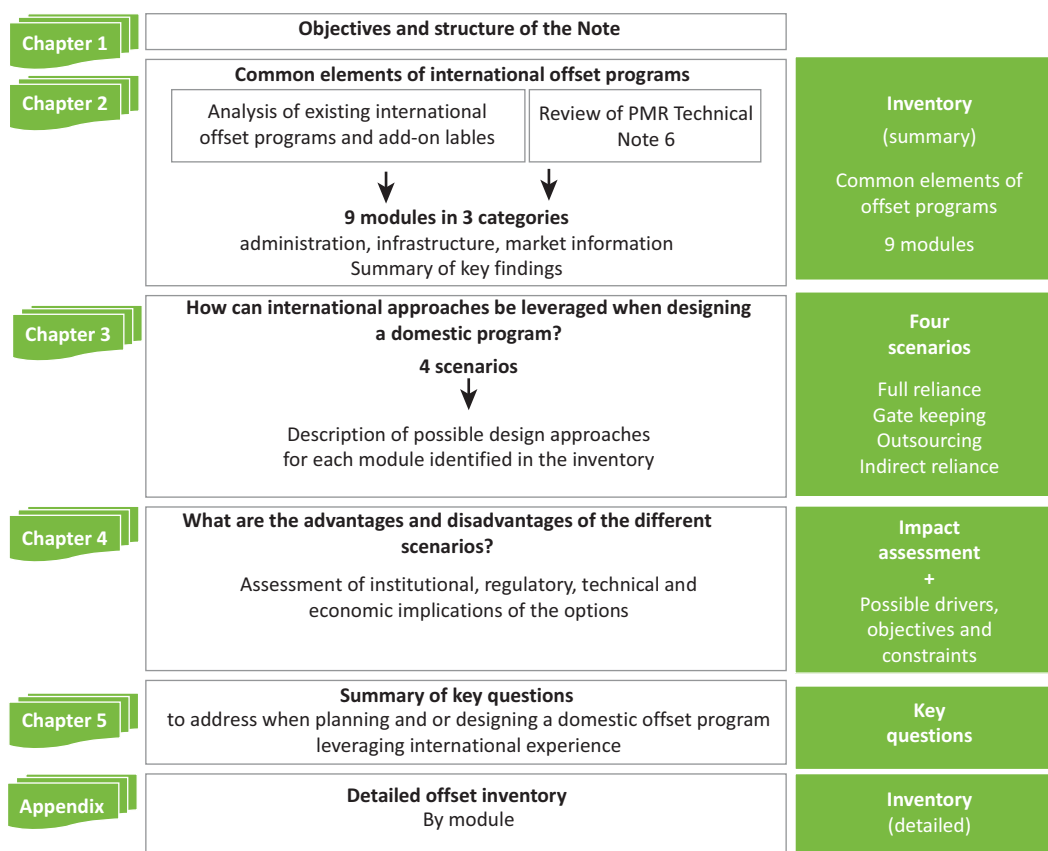
The Note is intended to act as a **guiding framework** for policy makers currently planning and/or designing a domestic offset program. Its structure is described below and summarized in figure 1.

Chapter 2 first presents the scope of the Note and introduces definitions of key words. It then reviews existing international offset programs and add-on labels to identify the common elements across the programs and highlight the different approaches followed. These common elements are organized in nine modules across three categories: administration of the programs, infrastructure, and market information. The full inventory of approaches observed for each of the modules under the offset programs and labels reviewed is presented in appendix A. This analysis builds on PMR Technical Note 6 “Similarities and differences between existing offset standards,” updated in February 2015.

Chapter 3 discusses how the approaches used in international offset programs and presented in chapter 2 can be combined in practice when designing a domestic offset program. This analysis is presented in the form of four scenarios that illustrate how international approaches can be leveraged to varying degrees.

Chapter 4 then assesses the institutional, regulatory, technical and economic implications of implementing these scenarios. It also highlights the advantages and disadvantages these scenarios might offer in light of possible drivers, objectives and constraints for the use of offsets.

**Figure 1. Structure of Technical Note 10—Options to Use Existing International Offset Programs in a Domestic Context**



Chapter 5 brings the previous chapters together, summarizing the key questions that will help policy makers best leverage the existing international experience when planning and/or designing a domestic offset program.

### 1.3. Methodology

Desk review and discussions with practitioners fed into the preparation of this Note. Practitioners consulted include members of the PMR Secretariat, members of the PMR offset working group, and representatives of international offset programs.

## 2. Inventory of Key Elements of an Offset Program

### 2.1. What Is a Domestic Offset Program, and Other Definitions

An **offset program** issues carbon credits according to an accounting protocol and has its own registry.

- An **international offset program** is a program that is run by an institution recognized by multiple countries (e.g., international body, non-profit organization). The rules are not specific to a certain country and the credits are sourced from multiple countries and sold on the international market.
- A **domestic offset program** is a program that is run at the national level by a domestic body. The rules are specific to the country and are developed by the domestic government. The credits are sourced from projects developed domestically or internationally, and are sold either domestically or in other countries. These credits can be used under a domestic policy e.g., an Emission Trading Scheme (ETS), a carbon tax, a domestic voluntary emission reduction or carbon neutrality scheme,<sup>1</sup> or under an international market-based mechanism.

An **offset label** does not issue credits. It is an add-on to credits issued under an accounting standard. It identifies specific qualities of an offset project in comparison to other projects that do not have this label. It provides no set criteria regarding crediting-period, baseline setting, or monitoring methodologies, as this is done under the relevant program that issues the credits.

### 2.2. Overview of International Offset Programs

For the purpose of this Technical Note, six international offset programs and three add-on labels were reviewed and analyzed to identify the common features and the differences in approach (see table 1).

The programs and labels were chosen based on the following criteria:

- *Project pipeline*: together they represent the lion share (i.e., over 95%) of the international offsets issued to date.
- *Years of activity*: they include the longest running programs (Clean Development Mechanism—CDM, the Gold Standard—GS, the Verified Carbon Standard—VCS) as well as more recent ones (Joint Crediting Mechanism—JCM).
- *Breadth of approaches*: they cover both compliance and voluntary programs, and United Nations Framework Convention on Climate Change (UNFCCC) and non-UNFCCC programs, and they exhibit a diversity of approaches with regards to their administration and infrastructure.

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<sup>1</sup> These policies can be in the country where the domestic offset program is implemented, or in another country that accepts credits generated by the domestic offset program.

**Table 1. International Offset Programs and Add-On Labels Covered in Technical Note 10**

<i>International offset programs</i>	
CDM	Clean Development Mechanism under the United Nations Framework Convention on Climate Change (UNFCCC)
Jl	Joint Implementation Track 2 under the UNFCCC
CAR	Climate Action Reserve
JCM	Joint Crediting Mechanism
GS	Gold Standard
VCS	Verified Carbon Standard
<i>Add-on labels</i>	
CCBS <sup>a</sup>	Climate Community and Biodiversity Standards: contribution to sustainable development
SC	Social Carbon: contribution to sustainable development

<sup>a</sup> The label Climate Community and Biodiversity Standards (CCBS) is under the management of the VCS since November 2014.

ISO standards 14064-2 and 14064-3<sup>2</sup> are also discussed when relevant as they provide a generic backbone used by many offset programs as a set of guiding best practices for the quantification, monitoring, reporting, validation and verification of greenhouse gas (GHG) emission reductions.

### 2.3. Inventory of Key Elements of International Offset Programs

Analysis of the international offset programs and the labels reveals that all offset programs contain the same key elements. These elements can be grouped in nine modules across three categories: administration, infrastructure and market. The modules are introduced in table 2 below and described in detail in the full Offset inventory presented in appendix A (the hyperlinks in table 2 link to relevant the modules in the inventory). Readers are advised to read appendix A in parallel to the description of the scenarios in chapter 3 to have the full background on each of the module and on the approaches followed in international programs.

#### 2.3.1. Use of International Offset Program in Existing Domestic Carbon Pricing Instruments

Some of the international offset programs reviewed are already used in domestic offset programs, as shown in table 3 below. The scenarios in the top row of the table are explained in Chapter 3.

Based on the inventory and these existing real-life cases, the next chapter explores in detail how international offset programs can be leveraged when designing a domestic offset program. It assesses what this means in practice for each of the offset modules listed in table 2, and specifically whether the modules are designed and run by the international offset program body or by the host country government. This analysis is presented in the form of four scenarios that illustrate how the international approaches can be leveraged to varying degrees.

<sup>2</sup> ISO 14064-2:2006: GHGs—Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of GHG emission reductions or removal enhancements; ISO 14064-3:2006: GHGs—Part 3: Specification with guidance for the validation and verification of GHG assertion.

**Table 2. Offset Program Modules**

<i>Module</i>	<i>Description of the module</i>
<b>Administration</b>	
1. Governance and institutions	<ul style="list-style-type: none"> <li>• What is the governance structure of the program?</li> <li>• What are the main bodies and what are their roles in running the programs?</li> </ul>
2. Project cycle and regulations	<ul style="list-style-type: none"> <li>• What are the main steps of the project cycle, from project design to credit issuance?</li> </ul>
3. Costs and revenues	<ul style="list-style-type: none"> <li>• How much does it cost to run the program?</li> <li>• How much revenue does it bring?</li> <li>• How much does it cost for project developers to generate a credit?</li> </ul>
4. Liabilities, non-permanence risk and appeal	<ul style="list-style-type: none"> <li>• How are liabilities distributed?</li> <li>• How are risks of land use reversal addressed?</li> <li>• Is there an appeal procedure?</li> <li>• Are there project level grievance procedures in place?</li> </ul>
<b>Infrastructure</b>	
5. Scope	<ul style="list-style-type: none"> <li>• Which GHGs are covered?</li> <li>• Which sectors and technologies are covered?</li> <li>• What is the geographical scope?</li> <li>• Broad or narrow scope (e.g., overlap with other policies or not?)</li> <li>• How are alignment or mis-alignment dealt with?</li> </ul>
6. Methodologies and tools	<ul style="list-style-type: none"> <li>• Which types of methodologies are used?</li> <li>• How are methodologies developed, approved, and/or incorporated into the program?</li> <li>• How are key questions such as additionality assessed?</li> </ul>
7. Validation, verification and accreditation	<ul style="list-style-type: none"> <li>• How are third-party validation and verification entities accredited?</li> <li>• Which guidelines do these entities follow in their assessment?</li> </ul>
8. Registry	<ul style="list-style-type: none"> <li>• What project information is recorded in the registries and how?</li> <li>• What credit information is recorded in the registries and how?</li> <li>• Is information transparent and publically available?</li> <li>• How are transactions made?</li> <li>• What are the modalities for the transfer of credits to another registry/account (interoperability)?</li> <li>• What are the modalities of the transfer of legal ownership of the credits from the program to another program?</li> </ul>
<b>Market</b>	
9. Market information	<ul style="list-style-type: none"> <li>• How many projects are registered? In which sectors?</li> <li>• How many credits have been issued?</li> <li>• Who are the buyers of the credits?</li> <li>• What is the price of the credits?</li> </ul>

**Table 3. Examples of Domestic Offset Programs Leveraging International Offset Programs**

	<i>Full reliance or gate-keeping scenario</i>	<i>Outsourcing or indirect reliance scenario</i>
<b>CDM</b>	<b>EU, New Zealand, Korea, Rep.,</b> (credits for use under ETS) <b>Mexico</b> (credits for use under carbon tax) Possibly <b>South Africa</b> (credits for use under future carbon tax) <b>Costa Rica</b> (credits for use under climate neutral strategy) <b>Australia</b> (credits for use under the National Carbon Offset Standard—NCOS)	<b>China</b> (credits for use under regional ETS pilots)
<b>JI</b>	<b>EU, New Zealand, and Korea, Rep.,</b> (for use under ETS) Possibly <b>Kazakhstan</b> (credits for use under ETS) in the future <b>Australia</b> (credits for use under the NCOS)	
<b>JCM</b>	<b>Japan</b> and host countries	
<b>CAR</b>	Possibly <b>Mexico</b> in the future (credits for use under carbon tax) <b>Costa Rica</b> (credits for use under climate neutral strategy)	<b>California</b> (credits under the state's Cap-and-Trade Program)
<b>GS</b>	Possibly <b>South Africa</b> (credits for use under future carbon tax) <b>Australia</b> (credits for use under the NCOS) <b>Costa Rica</b> (credits for use under climate neutral strategy) Possibly <b>Mexico</b> in the future (credits for use under carbon tax)	
<b>VCS</b>	Possibly <b>South Africa</b> (credits for use under future carbon tax) Possibly <b>Mexico</b> in the future (credits for use under carbon tax) <b>Australia</b> (credits for use under NCOS) <b>Costa Rica</b> (credits for use under climate neutral strategy)	<b>California</b> (credits under the state's Cap-and-Trade Program)
<b>CCBS</b>	Possibly <b>Mexico</b> in the future (credits for use under carbon tax)	
<b>SC</b>	Possibly <b>Mexico</b> in the future (credits for use under carbon tax)	

*Note:* In South Africa, the use of credits from several programs (CDM, GS, VCS) as an incentive to reduce the overall carbon tax liability of a firm for the upcoming carbon tax is being considered. In Mexico, CDM credits can be used under the carbon tax. Also, the CDM and other programs such as CAR, GS, VCS, CCBS and Plan Vivo Program have been mentioned for inclusion in an extension of the domestic offset program.

CAR and VCS are approved by California as Early Action Offset Programs (EAOP) and Offset Project Registries (OPR). California allows for the transition of eligible existing offset credits registered with approved EAOPs, that pass regulatory verification, to Air Resources Board (ARB) offset credits for use in the Cap-and-Trade Program. As OPRs, CAR and VCS help administer parts of the Compliance Offset Program and issue registry offset credits. Registry offset credits cannot be used for compliance with the Cap-and-Trade Program and instead must be reviewed and approved by ARB to be converted to ARB offset credits to be eligible for use in the Cap-and-Trade Program. Only ARB can issue compliance offset credits for use in the Cap-and-Trade Program.

The label Climate Community and Biodiversity Standards (CCBS) is under the management of the VCS since November 2014.

### 3. Approaches to Leverage Existing International Offset Programs in a Domestic Context

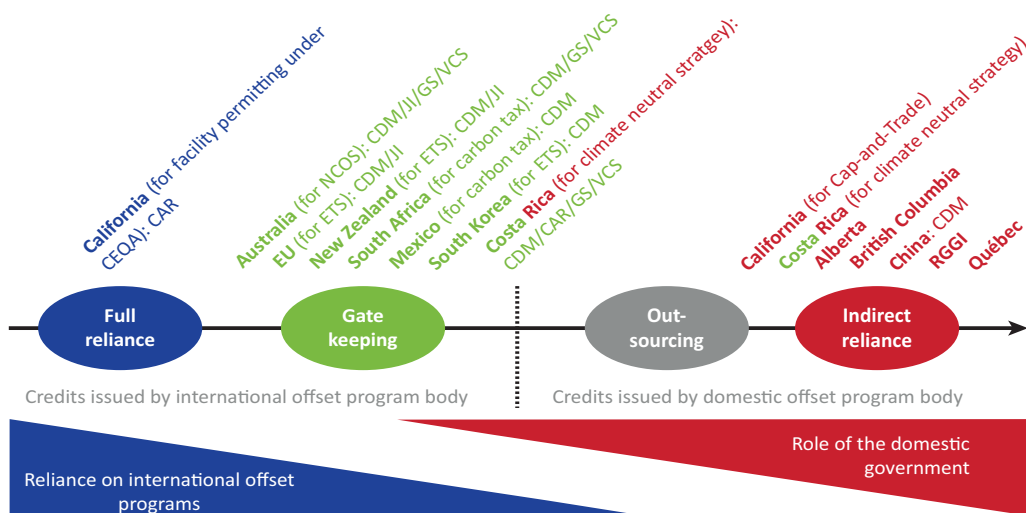
#### 3.1. Four Scenarios and a Multitude of Approaches

The different approaches observed in international offset programs can feed into the design of domestic offset programs in a variety of ways, ranging from a domestic offset program heavily relying on existing international offset programs to a fully domestic program with no link to international programs.

To capture these possibilities, four scenarios are defined: full reliance, gate keeping, outsourcing and indirect reliance. These scenarios represent a spectrum from the situation where the international offset program is fully used to generate domestic offsets (“full reliance”) to one where the *experience* from the international programs is used, but the offsets are issued by a domestic body (“indirect reliance”). Moving along this spectrum sees a decrease in reliance on the international offset program and an increase in the role of the domestic government.

The four scenarios are presented in figure 2 below and discussed in more detail in sections 3.2 to 3.5. The real life examples discussed in chapters 3 and 4 are also shown in the figure. They illustrate that, while the four scenarios provide a framework to encourage and facilitate discussions, there is a multitude of possibilities along the spectrum. Also, these scenarios are not static, and a country can start with gate keeping and move to out-sourcing or indirect reliance over time, or can blend scenarios, as is the case for Costa Rica. The categorization of a country along the spectrum of scenarios will reflect the technical and institutional capacities of a country and is expected to evolve over time.

**Figure 2. Four Options to Leverage International Offset Programs**



*Note:* This figure highlights a few examples of domestic offset programs. It is not an exhaustive list of all domestic offset programs around the world. CEQA = California Environmental Quality Act; CAR = Climate Action Reserve; NCOS = National Carbon Offset Standard; CDM = Clean Development Mechanism; JI = Joint Implementation; GS = Gold Standard; VCS = Verified Carbon Standard.



Each of the scenarios is discussed in detail in the sections below. For each scenario a:

- *General description* gives the reader an overview of the main characteristics of the scenario, with the scenario—full reliance, gate keeping, outsourcing, and indirect reliance—depicting the situation once the domestic offset program is in place.
- *Description by module* explains how each module of the domestic offset program will look once implemented, with a focus on how international programs are used. Different design options are explored and summarized. The hyperlinks in the heading of each module refers to the relevant section in the inventory in appendix A where additional information on the module can be found.
- *Summary of design questions* brings together the different questions around leveraging international experience that policy makers should consider when designing a domestic offset program. Each of these questions has different technical, legal, institutional and economic implications, which are assessed in chapter 4.
- *Scenarios in practice* highlights relevant domestic offset programs falling under each scenario.

This chapter addresses the “what” question, i.e., what are the possibilities to leverage international experience when designing a domestic offset program? Chapters 4 and 5 address the “how” and “why” questions, i.e., how to implement domestic programs falling into each of these scenarios, and why choose one scenario over the other?

Readers are advised to read the full Offset inventory presented in appendix A in parallel to the description of the scenarios below to have the background on each of the module and approaches followed in international programs.

## ● 3.2. Full Reliance

### 3.2.1. General Description

In the full reliance scenario, the government of the country running the domestic offset program (“host country”) fully relies on one or more international offset programs to generate carbon credits for the domestic program. The selected international offset program is responsible for the oversight and enforcement of the project approval and credit issuance processes. It reviews and approves the projects and issues credits. The role of the host country government is limited to choosing the international offset programs, and possibly labels, eligible under the domestic offset program, and monitoring the retirement of the credits for compliance under a domestic policy (e.g., domestic ETS, carbon tax).

In this scenario, the host country government accepts any credit issued under the relevant international program as domestic offsets. Participants can be allowed to directly cancel or retire credits in the registry of the international offset program, or transfer them to a government holding account in the registry. Alternatively, the government can establish a separate domestic registry to which the program’s credits first need to be transferred before being surrendered<sup>3</sup> for compliance (e.g., by a participant subsequently transferring the credits to an official government retirement or holding account within the domestic registry).

<sup>3</sup> “Retired” means transferred to a retirement account (e.g., the CDM voluntary cancellation account), where the credits are effectively taken out of circulation. “Surrender” means the credits are transferred to a government account—which could be a (domestic) retirement account or a separate holding account—for the purpose of meeting



The use of Climate Action Reserve (CAR) credits to meet legally required greenhouse gas (GHG) mitigation under California’s Environmental Quality Act (CEQA) is an example of full reliance.<sup>4</sup> See box 1 for a discussion of this practice in California.

### 3.2.2. Description by Module

The full reliance scenario is depicted in figure 3 and explained in detail by module below. For a general description of the modules see section 2.3 and appendix A—inventory of international offset programs and labels.

**Figure 3. The Full Reliance**



a compliance obligation. The credits might not necessarily be retired when they are surrendered—the government could collect surrendered credits in lieu of a tax, for example, and then resell them to external parties.

<sup>4</sup> Note that CAR’s role as an offset provider for CEQA mitigation is separate from its role as an approved Early Action Offset Program and Offset Project Registry under California’s Cap-and-Trade Program. CEQA is separate from California’s Cap-and-Trade Program.

### **(1) Governance and Institutions**

Under the full reliance scenario, the governing bodies and institutions (executive body, program administrator, advisory bodies, and validation and verification bodies [VVBs]) from the international offset program or programs are in charge of reviewing and approving projects and issuing credits. They are also responsible for oversight and enforcement of the program. A domestic body overseeing the program, with administrative and executive functions, is needed, but its role is limited and mostly centered around reviewing how well the arrangement with the external international program is working, communicating with participants, tracking the use of credits, and managing the registry (if applicable). This domestic body within the government may also have governance responsibilities for the implementation of other climate mitigation policies, such as policies permitting the use of offsets (e.g., domestic ETS or tax). It might be specifically created for the purpose of the domestic program, or it can build on an existing body (e.g., Clean Development Mechanism [CDM] Designated National Authority [DNA] with an extended mandate).

Under this scenario, the international program (institutions, capacity, etc.) will need to be able to accommodate a possible increase in activity due to the introduction of the domestic offset program. This requires interaction, and possibly arrangements (operational and potentially financial), between the host country setting the domestic program and the international program bodies during the design of the domestic program as well as its implementation.

To illustrate: if the CDM is allowed under the domestic offset program, the CDM Executive Board registers the projects and issues the credits. The host country's DNA's responsibilities can be expanded to cover the administration of the domestic program.<sup>5</sup> This domestic body will liaise with the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat, the Executive Board and other support bodies as needed, focus on making sure this arrangement is clear to participants and track the credits.

### **(2) Project Cycle and Regulations, (6) Methodologies and Tools, (7) Validation, Verification and Accreditation**

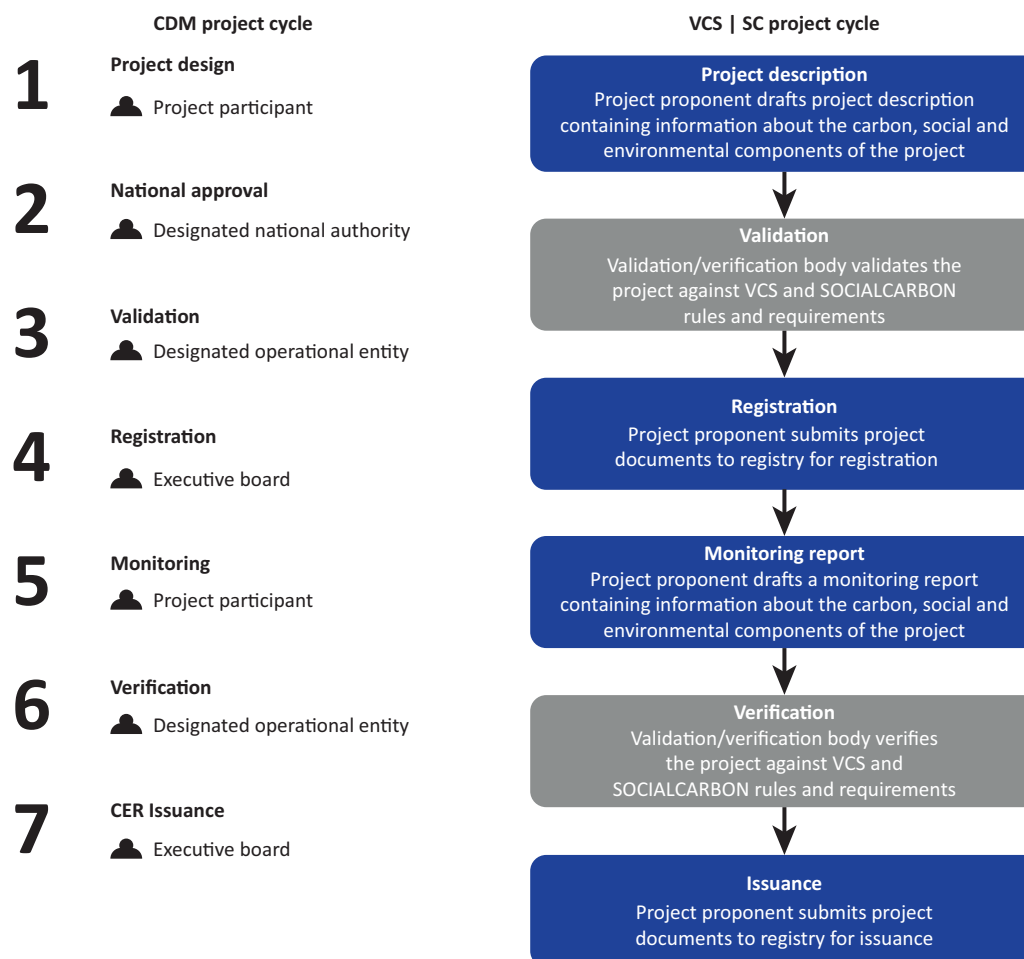
Under the full reliance scenario, projects are registered and credits issued by the international program. Therefore, the full set of regulations of the relevant international program(s), along with their associated tools and methodologies, apply (i.e., project design document preparation, stakeholder consultation, validation and verification, review, approval, etc.). The host country government does not make any selection on the methodologies or project types allowed and there are no specific domestic regulations with regards to the project cycle—including the validation and approval of the project and verification and issuance of carbon credits—as this is carried out under the international program.

To illustrate again: under the CDM, the project cycle is described in the “CDM Project Cycle Procedure.” It is summarized in figure 4 below. As discussed in more detail in the Offset inventory (appendix A, Module 2. Project cycle and regulations), most international programs and labels follow a similar project cycle. This is highlighted in figure 4, where the CDM project cycle and the Verified Carbon Standard (VCS)+ Social Carbon (SC) project cycle are used as examples to illustrate similarities and differences. To secure project registration and credit issuance,

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<sup>5</sup> As per the CDM rules, the DNA provides the host Letter of Approval. The DNA's assessment is separate from the domestic offset program, and all CDM projects, whether used under the domestic program or not, need to go through this step.

**Figure 4. Project Cycles under International Programs and Labels**



Sources: UNFCCC (United Nations Framework Convention on Climate Change). no date. *CDM Project Cycle*, UNFCCC website; VCS SocialCarbon. 2014. *VCS+SOCIALCARBON Project Development Process*.

Note: VCS = Verified Carbon Standard.

project developers will have to submit their requests to the international offset program. Domestically, the project developers might only interact with the buyers of the credits, which will themselves be or interact with the end users who will use the credits for compliance under the domestic policy (e.g., ETS, carbon tax).

Under the full reliance scenario, all methodologies and tools approved under the international programs apply. Such methodologies and tools can cover a wide spectrum of technologies and sectors (see appendix A, Module 6. Methodologies and tools). Some methodological approaches, like standardized baselines under the CDM, are country and sector specific, and make it possible to accommodate regional/national circumstances in the baseline and additionality while maintaining other elements of the internationally applicable methodology. If project developers feel the need to amend existing methodologies or develop new ones that are more appropriate to the domestic context, they must first get the approval of the relevant body from the international offset program according to the pre-defined rules. It is only following this process that such methodologies can be used in the international offset program.

No domestic regulation as such needs to be developed for the approval of projects and the issuance of credits under the full reliance scenario. Only rules for the *use of the credits* will need to be defined. This is likely to be done by the entity responsible for the relevant domestic policy that permits the use of offsets (e.g., domestic ETS or tax). The offsets can be used in different domestic policies which can have different requirements (e.g., several regional ETS with their own offset eligibility requirements).

The rights to the emission reductions and the credits issued follow the rules set in the international program. No additional domestic laws are developed to regulate the question of the rights and entitlement to the credits. Under the CDM and Joint Implementation (JI), these rights go to the host country, which transfers them to the project developers via a Letter of Approval (LoA). Under CAR, VCS and Gold Standard (GS), the rights go directly to the project developers. Under the full reliance scenario, the host country does not carry out further checks to confirm the ownership of the emission reductions and credits in the case of programs that grant directly the rights to the project developers.

The oversight and enforcement responsibility lies with the international program. The host country needs to ensure that it has enforcement capabilities either through its own statutes or through agreements with the international programs or the project developers themselves.

### (3) Costs and Revenues

As the projects are registered and the credits issued under the international program, the domestic costs are mainly linked to the communication and work with the international program, the possible operation of the registry and the tracking of the credits. The domestic program is likely not to generate revenues, unless the domestic offset program body creates revenue streams, e.g., by organizing trainings, workshops or conferences, and/or by charging a fee when credits are transferred to the domestic registry.

The international offset program bears the costs of the project approval and credit issuance processes. These costs include staff salary, overheads, materials, travel costs and third party fees (see appendix A, Module 3. Cost and revenue for more information). The revenue raised through project and issuance fees is also collected by the international program body. As an illustration, the cost and revenue per credit under the CDM, CAR, VCS and GS are provided in table 4 below. The calculation of these figures is

**Table 4. Average Cost and Revenue Per Credit Issued under the CDM, CAR, VCS and GS**

	<i>CDM (2012)</i>	<i>CDM (2014)</i>	<i>CAR (fiscal year 2014)</i>	<i>VCS (2013)</i>	<i>VCS (2014)</i>	<i>GS (fiscal year 2013)</i>	<i>GS (fiscal year 2014)</i>
Cost (USD/credit)	0.12	0.29	0.27	0.12	0.22	0.30	0.27
Revenue (USD/credit)	0.33	0.09	0.23	0.11	0.12	0.35	0.26

*Note:* The figures presented in table 4 are indicative and should not be taken as a definite metrics to evaluate programs. Some programs are run by public entities and some others by private entities, which have different priorities and manage budgets in a different way. Also, costs and revenues are not necessarily directly correlated to the pipeline of projects in a given year, as the programs engage in activities that are not directly related to projects (e.g., revenue-generating activities: workshops, trainings with paid attendance; costs: e.g., under the CDM, development of “public good” methodologies, capacity building to countries, administration of an accreditation system and support to Parties for negotiations).

explained in the Offset inventory (appendix A, Module 3). Between 2012 and 2014 the level of activity in the CDM dropped significantly. The effect on the cost and the revenue per credit can be seen in table 4. While revenues are largely directly influenced by the level of activity in terms of submission of new projects and issuance volumes, the cost base does not generally respond as quickly to the changes in the market (e.g., staff, overheads, materials, etc.). If the implementation of the domestic program leads to a surge in activity in the international program, modalities for a cost and revenue-sharing agreement between the international and domestic bodies might be discussed.

The project developers incur the transaction costs relevant to registering the projects and getting the credits issued under the international offset program. They are not subject to additional domestic fees as the domestic offset program is not involved in the registration of projects or the issuance of credits. The buyers of the credits might be subject to a fee when transferring the credits to the domestic registry.

#### **(4) Liabilities, Non-Permanence Risk and Appeal**

Under the full reliance scenario, the questions regarding distribution of liabilities, mitigation of non-permanence risk and appeal mechanism are addressed at the level of the international program. See appendix A, Module 4. (Liabilities, non-permanence risk and appeal) for more details.

With regards to the distribution of liabilities, international programs tend to put the liability for over-issuance either on the verification body (CDM, JI, CAR and VCS) and/or on a combination of stakeholders depending on the situation that led to the over-issuance (CAR, VCS).

The risk of non-permanence is dealt in five main ways: buffers for unintentional reversals (VCS, GS, CAR), reserve accounts (VCS, CDM for CCS), compensatory measures by project developers (VCS and CAR), temporary carbon credits (CDM) or consideration in the host country's inventory (JI). If the domestic program relies on international programs that use temporary credits, there needs to be domestic arrangements for those credits to be replaced if they are used and/or they expire.

Some international programs include an appeal process (internal for VCS and CAR, and combined involving internal and external experts for GS), some others do not (CDM, JI, Joint Crediting Mechanism [JCM]). Under full reliance, decisions by the international body are accepted by the domestic program and there is no extra domestic regulations allowing appeal at the national level. The domestic checks are done when the credits are used under the relevant domestic policy (see (8) below).

#### **(5) Scope**

The scope of the domestic program (GHG and sectors covered) is dictated by the scope of the international offset program(s) and label(s) chosen. Some international programs exhibit a broad coverage (e.g., wide range of countries and sectors, such as the CDM and the VCS), some others have a more restrictive coverage (e.g., regional coverage, like CAR, or focus on specific sectors, like agriculture and forests for the Climate Community and Biodiversity Standards [CCBS]). See appendix A, Module 5. (Scope) for more information.

There is some room for the domestic program to choose a scope that, to some extent, reflects national circumstances by selecting one or more international programs and compulsory add-on labels that match domestic priorities. For example, only allowing GS, possibly combined with SC, would narrow the scope of the domestic program and put strong focus on sustainable development benefits. However, the customization possibilities are limited by the pre-defined scopes of the existing programs and labels.

Besides the scope, other considerations will influence policy maker's decisions regarding the eligibility requirements within their domestic offset program and their choice of an international program. These considerations include, for example:

- *Alignment of core principles:* alignment between the international offset program and the intended domestic program, including on additionality demonstration, baseline setting and emission reduction quantification.
- *Acceptance of the unit in other regimes:* some programs generate credits only recognized on the voluntary markets (GS, VCS), some on the compliance market (JI), and some on both compliance and voluntary markets (CDM).
- *Existing pipeline of projects:* a program with a large number of projects in the pipeline in the host country (see Module 9. Market information in appendix A) offers a wider readily available supply of domestic offsets. That can be an advantage for domestic programs seeking to start rapidly. Also, domestic capacities for these programs (project developers, validation and verification body [VVB], consultants) are likely to be more developed and leveraged more easily.
- *Existing infrastructure:* international programs with large pipelines are expected to be able to better withstand fluctuations in activity levels (e.g., increased project and issuance activities arising from new domestic demand) within the current infrastructure. Smaller programs might require some special arrangements regarding staff numbers, IT tools used, etc. The host country government setting-up the domestic offset program needs to engage with the international programs during the design phase of the domestic program to ensure that the infrastructure of the international program can cater for the new sources of demand. This might require some sharing of the costs if modifications to existing international programs are needed.
- *Scope and methodologies:* some programs offer a wide range of methodologies and tools (e.g., over 200 for the CDM) while others offer a more limited range (e.g., around 15 under the GS). Also, some sectors (e.g., forests) are covered by some programs but not others, and some programs put stronger emphasis on sustainable development requirements than others (e.g., GS).
- *Transaction costs for the project developers:* costs incurred by domestic project developers will be an important determinant of their participation in the program (see Module 3. Costs and revenues in appendix A).
- *Registry(ies) used:* the type of registry and the modalities of their use can have an influence, e.g., (public) accessibility, functionality, legal restrictions (e.g., on automatic transfers), security procedures, etc.

- *Ownership of emission reductions and credits:* some programs grant the rights to the emission reductions to the host country, which then transfers it to project developers, while others grant these rights to the project developers directly, with no involvement of the host country.
- *Modalities for cooperation:* some international programs might lend themselves better to cooperation than others (e.g., governance bodies open to participation and contribution by host country representatives, legal provisions around intellectual property rights conducive to information sharing).

? **Design questions:** During the design of the domestic program, the host government needs to:

- Choose the international offset program(s) accepted under the domestic program
- Choose whether to rely on international offset program(s) only or require the use of additional compulsory add-on label(s), and choose these labels.

### (8) Registry

The goal under a full reliance scenario is to delegate registry functions as much as possible. This would likely mean relying on international programs for all project database functions (see appendix A, Module 8. Registry). Credit issuance functions are also delegated. The fundamental requirement is that there be a way for domestic government officials to unambiguously confirm when, and by whom (or on whose behalf), credits have been retired for the purpose of complying with the domestic policy (e.g., ETS, carbon tax). This can be accomplished entirely through an international program's registry system, or within a domestic registry system. The latter option might be justified, for example, where a separate compliance-unit registry system is already required for domestic policy purposes (e.g., to serve a domestic ETS).

? **Design questions:**

There are two general options for how retirement of credits could be confirmed under full reliance:

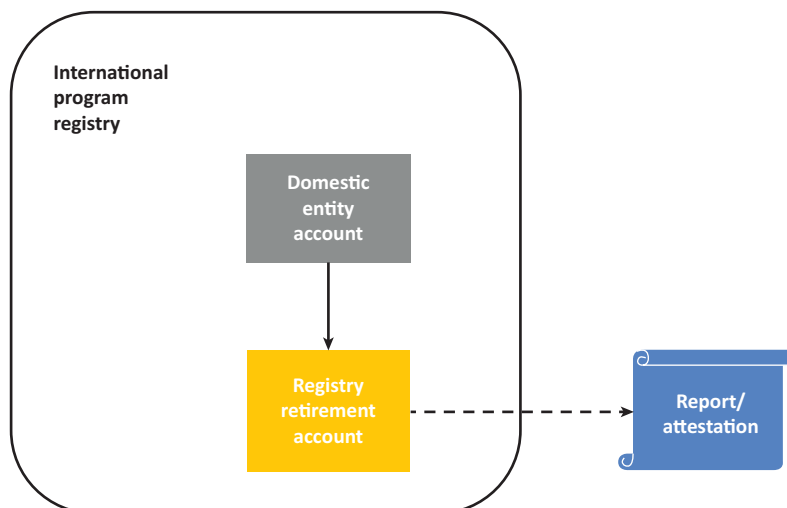
- Approach 1: Delegate credit tracking and retirement functions completely to international program(s)
  - Approach 1(A): Direct retirement of credits
  - Approach 1(B): Retirement of credits via transfer to government account
- Approach 2: Allow transfer of credits from international program registries into a domestic compliance registry, where they can be retired internally
  - Path A: Automatic Transfers
  - Path B: Manual Credit Transfers

#### *Approach 1: Full Delegation of Registry Functions*

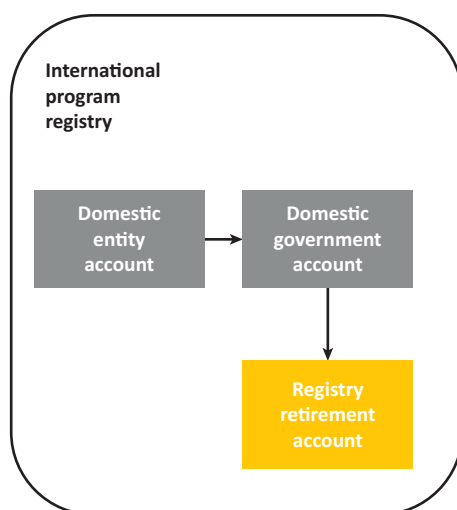
Where credit tracking and retirement occur exclusively on an international program's registry, the domestic government needs to establish procedures for recognizing credit retirements in that registry for the purposes of meeting domestic policy requirements. In generic terms, there are two options for this process: (A) domestic entities are required to directly retire credits in the international program registry and then inform the domestic government—see figure 5; or (B) domestic entities are required to transfer credits to an official government account established in the international programs registry (where the government would subsequently decide how to dispose of the credits)—see figure 6.



**Figure 5. Direct Retirement of Credits—Option 1(A)**



**Figure 6. Retirement of Credits via Transfer to Government Account—Option 1(B)**



*Approach 1(A): Direct retirement of credits*

Specific procedural steps for this option would include:

1. An entity seeking to use offsets for domestic compliance would establish an account in the registry of the international program.
  - a. For the CDM Registry, this would require either that the entity be a CDM project participant, or that the domestic government (a Non-Annex I party) establish a “holding account” for Certified Emission Reductions (CERs) on behalf of the entity, which would then be given operational control of the account.<sup>6</sup> Similar arrangements could also be accommodated within Annex I Party

<sup>6</sup> See UNFCCC 2015, 5, para. 24(c) (ii). Note that normally, only non-Annex I party governments and CDM project proponents can maintain and operate accounts in the CDM registry. An alternative arrangement to the one described here would be for a CDM project proponent to retire credits on behalf of another entity, which would otherwise



- national registries. See UNFCCC 2015<sup>7</sup> for a full overview of the options for accommodating the needs of domestic offset programs within the Kyoto Protocol registry system.
- b. For other international offset programs, this would require meeting program-specific requirements for opening an account. Generally, these requirements consist of basic criteria for being a legally constituted and trustworthy corporate entity, but are otherwise not restrictive. (See appendix A, 8. Registry for details)
2. The entity would acquire credits and/or receive them in its account.
  3. The entity would initiate retirement of those credits using the appropriate mechanisms and procedures specific to the international program.
    - a. For the CDM, for example, this could be accomplished through “voluntary cancellation” procedures in the CDM Registry—see UNFCCC 2015.
    - b. For CAR, VCS, and GS, this would be accomplished by depositing credits in a non-revocable program-wide “retirement” account.
  4. The entity would provide evidence to the domestic government that the credits were retired in the registry for the purpose of meeting domestic policy requirements.
    - a. For all the programs reviewed here, this would take the form of submitting a report or attestation, generated by the international program registry, indicating the serial numbers of retired credits and the purpose for their retirement. (Note that such reports are generally in electronic format, and could be automatically forwarded to domestic government officials.)
    - b. The serial numbers of retired credits would also be made publicly reviewable in the international program’s registry system (this functionality is provided by the registry systems of all the programs reviewed here).
  5. The domestic government would review the entity’s submission and approve the retirement or cancellation of credits for meeting domestic policy requirements.

*Approach 1(B): Retirement of credits via transfer to government account*

Specific procedural steps for this option would include:

1. An entity seeking to use offsets for domestic compliance would establish an account in the registry of the international program (as in Option 1(A)).
2. The entity would acquire credits and/or receive them in its account.
3. The entity would transfer the credits to an account maintained by the domestic government in the international program’s registry.
  - a. For the CDM, this could be the government’s central holding account in the CDM Registry—see UNFCCC 2015.
  - b. For other programs, the government would need to establish a unique account into which credits could be transferred for surrender to the government. Detailed requirements for

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not have any interaction with the CDM Registry system. For the purpose of domestic compliance, the domestic government would then need to confirm from an attestation produced by CDM Registry that credits were in fact retired on behalf of the entity. This might reduce administrative costs, but could introduce more risk of error in correctly assigning retirements to domestic entities.

<sup>7</sup> UNFCCC (United Nations Framework Convention on Climate Change). 2015. *Voluntary Cancellation of CERs for Domestic Offset Schemes*. Agenda item 4 of the PMR Offset working group webinar.

- establishing and maintaining a government-held account would need to be negotiated with the international program.
4. The entity would notify the domestic government that a transfer had been initiated into the government account.
  5. The domestic government would acknowledge and accept transfer of the credits into its account.
  6. The domestic government would notify the entity that the credits have been accepted for meeting domestic policy requirements.
  7. The domestic government would retain the credits in its account until it decides to monetize them (e.g., through sale to other entities or governments),<sup>8</sup> or until it voluntarily retires them using the appropriate mechanisms and procedures specific to the international program.
    - a. For the CDM, retirement could be accomplished through “voluntary cancellation” procedures in the CDM Registry
    - b. For CAR, VCS, and GS, retirement would be accomplished by depositing credits in a non-revocable program-wide “retirement” account.

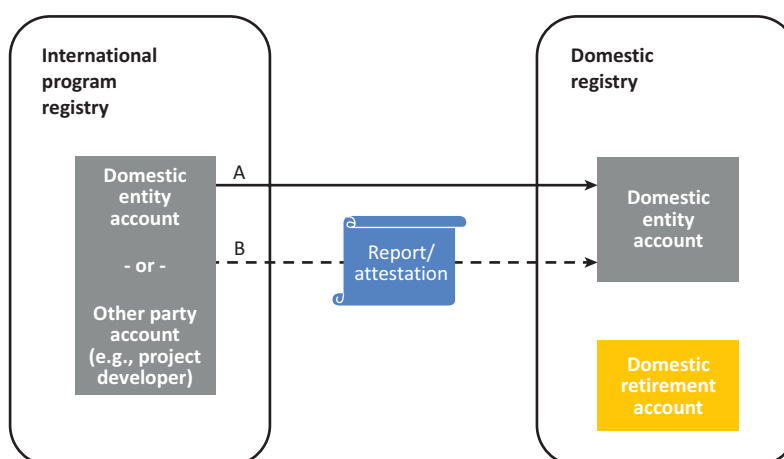
*Approach 2: Transfer of International Program Credits to a Domestic Registry*

If a government establishes its own domestic registry system (e.g., as part of a domestic ETS), then it may prefer to have offset credits transferred into—and surrendered for compliance through—this system, rather than recognize retirements on the international registry. There are several ways in which this arrangement could be implemented (figure 7).

Under this option, the basic procedures for acquiring and surrendering offsets would be:

1. An entity seeking to use offsets for domestic compliance would establish an account in the domestic registry

**Figure 7. Transfer of International Program Credits to Domestic Registry**



<sup>8</sup> Note that resale of credits would generally only be an option where the goal of the domestic program is revenue generation rather than emission reductions per se. If credits are used to meet an express domestic emission reduction target or obligation, they would need to be retired so that they could not be used against other emission reduction targets.

2. The entity would then receive credits transferred from the international program registry in its domestic account. This could be accomplished in two ways:
  - The entity could establish a separate, parallel account in the international program registry and effect transfers from its international program account to its domestic account; or
  - The entity could arrange to have credits transferred from another entity's account in the international program registry to its account in the domestic registry (e.g., it could request that a project developer or other holder of credits in the international program transfer the credits to its domestic registry account upon payment for the credits)
3. The entity could use its domestic registry account to initiate transfers to other participants in the domestic registry system, or to surrender credits to the government to meet domestic policy requirements (e.g., by transferring to a domestic retirement account, as indicated in figure 7).

The domestic government would need to decide whether the transfer of credits from the international registry to the domestic registry would occur automatically (Path A in figure 7) or manually (Path B in figure 7). Detailed procedures and/or technology for either option would need to be worked out between the government and the international program.

#### *Path A: Automatic Transfers*

1. An entity wishing to transfer credits would initiate the transfer in the international registry's software system.
2. The software system may confirm that the credits meet any eligibility requirements for transfer.
3. The software system would connect to the domestic registry's software system and indicate that a request to transfer credits has been initiated.
4. The domestic registry software system would (also) confirm eligibility of the credits and respond affirmatively to the international registry software system.
  - At this step, there might also be a manual confirmation required from domestic registry operators
5. Once an affirmative response is received, the international registry software system would automatically cancel the credits to be transferred.
6. The domestic registry software system would issue credits into the entity's account in the domestic registry.
7. The domestic entity could then transfer or retire credits within the domestic registry system.

#### *Path B: Manual Credit Transfers*

1. An entity wishing to transfer credits would cancel or retire those credits in the international registry, indicating that the cancellation/retirement is for the purpose of initiating a transfer to the domestic registry.
2. The international registry would generate a report indicating the number of credits cancelled and their serial numbers, along with details on the project for which they were issued.
3. The domestic government would review the report, confirm the credits were cancelled, confirm their eligibility for transfer, and then issue domestic program credits into the appropriate entity's account in the domestic registry.
4. The domestic entity could then transfer or retire credits within the domestic registry system.

There are no real technical barriers to automatically transferring credits. Each of the existing international offset programs reviewed in this document use registry systems that could be easily configured to communicate with external systems. However, there may be policy, security and legal reasons why manual transfers are preferred. For example:

- The CDM Registry is restricted from automatic linking to external registries that are not connected to the International Transaction Log (currently, this would be only be national registries established by Annex I parties), although such restrictions could be lifted through future decisions under the Kyoto Protocol.
- Under California's Cap-and-Trade program, the State of California does not allow automatic linkages with its domestic registry system for both policy and security reasons. By statute, the California Air Resources Board (ARB) is the only agency that can issue compliance offset credits in its Cap-and-Trade program, as this is considered to be the best security option for protecting the state's program and its participants.

Assuming such policy, security and legal concerns can be addressed, automatic linking would not be difficult to implement.

With regards to the development and operation of the domestic registry, the host country government can decide to do it in house or to outsource it. This design choice is discussed in more detail in the discussion of the Registry module (8) in the outsourcing scenario in section 3.4.2.

#### ? Design questions:

- Full outsourcing of the domestic registry
- Intermediate outsourcing of the domestic registry
- No outsourcing of the domestic registry

#### (9) Market Information

*Supply and demand:* All the credits issued under the international offset program can be recognized as domestic offsets. The domestic policy under which the credits are used (e.g., ETS, tax) can set quantitative limits. The potential supply of credits therefore equals the pipeline of projects under the international program(s). The demand for credits equals the expected domestic demand (e.g., under the ETS or carbon tax), plus the expected international demand. For example:

- Under a domestic program that accepts CERs, the potential supply of credits is the supply of the 7,500+ registered projects and any new projects. The demand comes from compliance schemes accepting CERs, i.e., currently mostly the EU ETS, the Swiss ETS, the New Zealand ETS and the Mexican carbon tax, as well as from buyers voluntarily cancelling CERs. Under the CDM there is a significant potential supply of credits which domestic offset programs could tap into, which today outweighs the existing demand. The issuance activity under the CDM is currently slow due to the lack of demand. Creating additional demand through new domestic offset programs could boost issuance activity as well as the registration of new project activities, depending on the magnitude of the new demand created.
- Under a domestic program that accepts Voluntary Emission Reductions (VERs), the potential supply is lower than under the CDM as the pipeline of the voluntary international offset programs is

smaller (see Module 9. Market information (market module) in appendix A). It will be important for the country designing its domestic program to assess its potential domestic demand and how that compares to the potential supply of the voluntary program accepted. A large domestic demand could drive the supply up, which would increase credit prices, and could possibly even outweigh supply before the market picks up.

- Under a domestic program that requires an add-on label, the potential supply would be the supply of the international program(s) accepted, as labels do not issue credits. Projects developers would need to get their credits certified with the relevant label to have them recognized under the domestic program. Currently very few registered projects and credits are certified with such a label (e.g., CCBS or SC). Recognition of the add-on label under the domestic program would have an impact on the activity of the label bodies. The capacity of the label bodies needs to be high enough to process the demand for labeling under the domestic program so as to avoid creating bottlenecks in the supply of labeled credits.

*Prices:* The prices of the credits will be directly influenced by the international market for the credits—specifically, the demand, including domestic, in relation to the supply. The domestic demand, driven by the relevant domestic policy (e.g., ETS, carbon tax), will depend on the relative price of the credits as compared to the allowance prices under an ETS, or the effective tax rate under a carbon tax.

### **3.2.3. Summary: Design Choices under a Full Reliance Scenario**

Summarizing the analysis presented in the previous section, policy makers planning or designing a domestic offset program under full reliance will need to consider the following main design questions with regards to leveraging international experience:

1. Choice of the international offset program(s) accepted under the domestic offset program
2. Use of add-on labels: reliance on offset programs only or introduction of additional compulsory add-on labels
3. Type of registry: reliance on international registry or allow transfers to domestic registry
4. Level of outsourcing of the domestic registry.

The key impacts, advantages and disadvantages of these approaches are discussed in chapter 4.

### **3.2.4. Full Reliance in Practice: California Facility Permitting under the CEQA<sup>9</sup>**

**Example:** California facility permitting under the CEQA, see box 1.

#### **Box 1. Full Reliance in Practice—California Facility Permitting under CEQA**

In California, public works projects, industrial facilities, and various other kinds of state-initiated or state-approved activities must undergo environmental impact reviews before they can be permitted under the CEQA. Projects are evaluated under a range of different environmental impact criteria. In general, projects are required to show they will have no significant environmental impact—or, if they will have a significant impact, they must

*box continues next page*

<sup>9</sup> Note that CEQA is a California statute separate from the State's Cap-and-Trade program.

**Box 1. Full Reliance in Practice—California Facility Permitting under CEQA** *(continued)*

undertake approved mitigation measures. After passage of California’s Global Warming Solutions Act in 2006, new projects were required under CEQA to contain an evaluation that included GHG impacts. In several cases, local air agencies have allowed projects to mitigate their GHG impacts by purchasing and retiring carbon offsets. Rather than create a separate offset program for this purpose, the local air agencies allowed project developers to purchase and retire voluntary offsets issued by CAR. In these cases, the state agencies have relied completely on CAR to provide an offsetting function, although they have generally required that offset projects must be located in California. These requirements are imposed separately from California’s Cap-and-Trade program for GHG. For California’s Cap-and-Trade program, only the state authority, the California ARB, can issue compliance offset credits.

### ● 3.3. Gate Keeping

#### 3.3.1. General Description

Under the gate keeping scenario, the government of the country running the domestic offset program (“host country”) relies on one or more international offset programs to generate carbon credits, as under full reliance, but introduces restrictions on the projects and credits eligible in the domestic offset program to select those that fulfill domestic requirements.

Such restrictions can relate to the geographical location of projects, emission or economic sectors, types of projects, increased stringency in terms of, for example, adherence to social or further environmental standards, and additional requirements for VVBs. For example, a domestic offset program can restrict eligibility to CDM projects developed in the host country and using methodologies from the energy and waste sectors. The restrictions are introduced through additional criteria the projects need to comply with and reflect national circumstances.

The international offset program remains responsible for oversight and enforcement of project approval and credit issuance, but the role of the host government is increased compared to the full reliance scenario as it has to check compliance with the additional domestic criteria. Depending on the type of criteria, an additional domestic review and approval process might need to be put in place.

In order for participants to have their credits issued under the relevant international program recognized in the domestic program, they have to show that these credits meet the domestic restrictions introduced by the government. To track the use of the credits, as with full reliance, the government might allow for direct cancellation or retirement of credits in the registry of the international offset program, or might decide to establish a separate domestic registry to which the program’s credits would need to be transferred before being surrendered for compliance.

The EU, Mexican, South African and South Korean domestic offset programs fall under the gate keeping scenario. See box 2 for the a discussion of the South African program.

## **Box 2. Gate Keeping in Practice—Domestic Restrictions and Estimated Costs to Set-Up the South African Domestic Offset Program**

South Africa plans to launch a carbon tax in 2016. Up to a 10% offset allowance will be available to emitters. This will serve as a flexibility mechanism that will enable industry to deliver least cost mitigation and thereby lower their tax liability, while further incentivizing mitigation in sectors or activities not directly covered by the tax and/or benefiting from other government incentives. South Africa plans to develop a domestic registry to track the use of the offsets.

South Africa's government is in the process of defining the rules for its domestic offset program. It is envisaged at this stage that projects registered and carbon credits issued under the CDM, the GS and the VCS will be accepted provided they meet certain domestic criteria, which include:

- Geographical location (only projects in South Africa)
- Technology/sector (transport, waste, AFOLU and renewable energy and energy efficiency if not covered by other incentive schemes; industrial gas projects are excluded)
- Alignment with the carbon tax and other incentives (only activities not liable for the carbon tax or other government incentives)
- Implementation date (focus on projects implemented after the start of the carbon tax, possibly other projects under special conditions)

The compliance with these restrictions will be qualitatively checked by the South African domestic program, which will then approve the projects for use under the South African carbon tax. It is envisaged that the CDM DNA will be expanded and will carry out these reviews.

The South African government has started preparatory work for the domestic program in 2012, including several studies and a public consultation. The remaining costs of setting-up the program is estimated at \$3,000,000, with about \$300,000 to elaborate the regulations, \$890,000 to develop the registry, \$1,710,000 to set-up the institutions (recruitment, training of program bodies) and \$100,000 for a mid-term review.

*Source: South Africa Government. 2015. Market Readiness Proposal for the Republic of South Africa, The Carbon Tax Policy Package, Partnership for Market Readiness.*

### **3.3.2. Description by Module**

The gatekeeping scenario is depicted in figure 8 and explained in detail by module below.

#### **(1) Governance and Institutions**

As under full reliance, the governing bodies and institutions (executive body, program administrator, advisory bodies, and VVBs) from the international offset program or programs are in charge of reviewing and approving projects and issuing credits. They are also responsible for oversight and enforcement of the program.

Whilst no domestic body is involved in the issuance of credits, a new domestic body will need to be created, or an existing body appointed, that is responsible for deciding, implementing and maintaining the restrictions being applied to the offsets. Its exact role and responsibilities will depend on the type of restrictions applied (see (2) below).



**Figure 8. The Gate Keeping Scenario**



*Note:* VVBs refer to validation and verification bodies.

The gate keeping approach, again like full reliance, can still vary in the number of international offset programs that are permitted under the domestic program. The choice of the number and type of program(s) allowed will be central at the time of planning and designing of the domestic offset program. The importance of the interaction and possible arrangements between the host government and the international program highlighted under full reliance also apply under gate keeping.

**(2) Project Cycle and Regulations**

As under full reliance, projects are registered and credits issued by the international program, therefore the project cycle and regulations are those stipulated by the international offset program.

However, an additional domestic review and approval step is introduced in order to assess the projects or credits against the domestic restrictions applied. The way in which this process takes place needs to be defined by the domestic program and may differ depending on the nature of the restrictions.



Such restrictions might include, for example:

- *Qualitative restrictions on the geography:* only credits from projects implemented in certain regions of the host country are accepted in the domestic program.
- *Qualitative restrictions on sectors and/or types of projects:* only certain types of projects are accepted. In the EU for example, CERs from N<sub>2</sub>O and HFC-23 projects are not accepted for compliance under the EU ETS. In South Africa, to avoid potential double counting the carbon reduction benefit from an offset project that is implemented on an activity that is liable to the carbon tax, projects that generate carbon offset credits will likely have to occur outside the scope of activities of the entity subject to the carbon tax. Under Australia's National Carbon Offset Standard (NCOS), long term (ICERs) and temporary (tCERs) are not accepted.
- *Additional requirements for certain sectors and/or types of projects:* the projects need to comply with additional requirements, e.g., around sustainable development. CERs from hydropower plants above 20 MW for example need to show compliance with the World Commission on Dams environmental and social guidelines in order to be accepted under the EU ETS. Another example would be to require all projects to get an extra label, e.g., CCBS or Social Carbon, to be eligible under the domestic program.
- *Additional requirements for VVBs:* it could be envisaged that a host country government might want to ask for the projects to be validated and verified by VVBs based in the host country and/or locally accredited.

With regards to the rights to the emission reductions and the credits issued, under the CDM and JI these rights go to the host country, which transfers them to the project developers via a LoA. Under CAR, VCS and GS, the rights go directly to the project developers. The domestic review and approval step can be used to confirm the ownership of the credits in the case of the VCS, GS and CAR projects. This can be a simple confirmation of the assessment done to check the rights to emission reductions and credits carried out during the project review under the relevant international programs, or a further assessment of the information proving these rights (e.g., attestation from the project developers, evidence of ownership of the mitigation activity, etc.).

Some restrictions can be assessed using the project information recorded in a project database and the serial number of the issued credits (e.g., country, project type, extra add-on label). In such cases, acceptability can be *assessed automatically* via a domestic registry (see (8) below). This is what is in place in the EU, where the European Union Transaction Log (EUTL) automatically checks, records and authorizes all transactions that take place between accounts in the Union registry for compliance under the EU ETS. The legal provisions for the use and holding of international credits under the EU ETS are therefore enforced through automatic compliance checks performed by the EUTL. In this case the host country's check is performed when the credits are used, based on pre-defined a list of projects and credits meeting the domestic requirements.

Restrictions which *cannot be assessed automatically* (e.g., specific development benefits, location of VVBs, rights to the emission reductions and credits) may require the development and implementation

of a domestic review and approval process to confirm the compliance of the projects with the additional requirements. The following options can be envisaged:

- The compliance with additional criteria is checked by a body of the domestic offset program (e.g., governmental entity). The domestic program needs to develop regulations for this review and approval step (regulations for project developers to apply for approval of their project and regulations for the domestic body to carry out the review and approve or reject the project).
- The compliance with additional criteria is checked by a body accredited under the international offset program used to develop the project (e.g., Designated Operational Entities—DOEs—accredited under the CDM for a domestic offset program relying on the CDM). No additional accreditation is needed, it is assumed that the existing accreditation ensures the body is able to carry out the domestic review. The domestic program needs to develop regulations for this review and approval step.
- The compliance with additional criteria is checked by international or national entities accredited under the domestic program. These can be entities accredited under the international offset program which get an extra national accreditation, or other entities complying with the domestic rules. The domestic rules can rely on international approaches, for example agencies accredited by a member of the International Accreditation Forum for ISO 14065 (GHGs—Requirements for GHG VVBs for use in accreditation or other forms of recognition) can be allowed to validate and verify the domestic projects. The domestic program needs to develop regulations for this review and approval step as well as accreditation procedures for the entities carrying the review.

The review and approval process can happen when a credit transfer request is submitted (see (8) below). This request can be submitted by the project developer or, most likely, by the credit holder. The host country government can issue a certificate to the project once it has ensured that the project meets the additional criteria. The certificate can then serve as the basis for adding a domestic label on the credits issued by the project. Any credit subsequently issued for such a project will have this domestic label and can enter the domestic offset program. The check on the credits can then be done automatically in the registry based on a list of labeled projects (see (8) below). In this case, the project remains with the international offset program. Another option is to fully transfer projects approved by the international offset program to the domestic program. Projects approved by international programs are reviewed and approved by the domestic program and credits are subsequently issued by the domestic program. This option fits under the indirect reliance scenario discussed in section 3.5.

As under full reliance, the oversight and enforcement responsibility lies with the international program. The host country needs to ensure that it has enforcement capabilities either through its own statutes, or through agreements with the international programs or the project developers themselves.

**? Design questions:** When designing a domestic offset program the host country government will need to decide on the type of restrictions to be assessed. These can include but are not limited to:

- Geography (e.g., country, region)
- Sectors and or project types

- Labels
- Specific co-benefits, e.g., sustainable development benefits
- Location of VVBs
- Rights to emission reductions and credits

The type of restrictions will dictate the type of review and approval process needed, and the entities in charge of the review step.

### **(3) Costs and Revenues**

The main costs incurred by the domestic program are due to the additional step of checking whether the projects comply with domestic requirements. These costs can relate to, for example:

- Defining, maintaining and reviewing the list of restrictions.
- Reviewing and approving credits (in case of automatic checks).
- Reviewing and approving projects and subsequently reviewing and approving credits.
- (If the review of the project is carried out by validation bodies and requires additional accreditation) accrediting of validation and verification entities for the check of additional requirements (see (7) below).
- Operating the domestic registry, if applicable.

Other domestic costs are linked to the communication and work with the international program, the possible operation of the registry and the tracking of the credits.

The domestic offset program body might envisage to charge project developers or, most likely, credit holders fees to get their projects approved in case of manual checks of restrictions. If the fee is borne by the project developers, this would increase the overall transactions costs compared to projects developed in other countries covered by the international program. Also, the host country government can decide to levy part of the right to the revenue generated from the sales of the credits, in the form of a domestic tax or levy.

The administrative costs and revenue linked to the registration of projects under the international offset program and the issuance of credits are incurred by the international offset program.

The example of South Africa, which is currently designing its domestic offset program, is presented in box 2. Estimates of costs for setting-up the program are provided.

### **(4) Liabilities, Non-Permanence Risk and Appeal**

As under full reliance, the questions regarding distribution of liabilities around over-issuance, mitigation of non-permanence risk and appeal mechanism are addressed at the level of the international program. See appendix A, Module 4. Liabilities, non-permanence risk and appeal for more details. If the domestic program relies on international programs that use temporary credits, there needs to be domestic arrangements for those credits to be replaced if they are used and/or they expire. Alternatively temporary credits can be excluded from the domestic offset program, as

is done in Australia's NCOS scheme where long term and temporary CERs (ICERs and tCERs) are not accepted.

In addition, the domestic program can decide to introduce an appeal process in regards to decisions and assessments against the additional criteria.

**? Design questions:** During the design phase of the domestic program, the host country needs to decide:

- Whether there should be an appeal procedure for the decision pertaining to the compliance with additional criteria, and what this procedure should be.
- How to address domestically the issues of non-permanence risk.

### **(5) Scope**

The overall scope of the domestic program is dictated by the scope of the international offset program, as under full reliance, but it is effectively narrowed by the additional domestic restrictions. Examples of possible restrictions are given in (2) above.

### **(6) Methodologies and Tools**

The methodologies and tools for developing projects are the ones in use under the international offset program.

Depending on the type of domestic restrictions introduced (see (2) above), the credit holder might have to demonstrate how the project meet the additional criteria. In such case some additional domestic forms, tools and methodologies might be required. This could be the case if, for example, VCS is chosen as the international program, and additional requirements with regards to alignment with specific domestic policy objectives, e.g., poverty alleviation or energy access through specific technologies, are introduced in the domestic program.

**? Design questions:** When deciding on the types of restrictions to apply, the host country government will have to consider how project developers or credit holders will be asked to demonstrate their projects comply with the additional criteria, and whether that requires the development of additional forms, tools and methodologies.

### **(7) Validation, Verification and Accreditation**

As under full reliance, projects are validated and credits verified under the international offset program by validation and verification entities accredited under the international offset program. Depending on the type of additional requirements (see (2) above), third-party entities might be involved in checking adherence with additional criteria. If applicable, the government needs to define the procedures to check the compliance with additional criteria, the types of entities authorized to perform such checks and, if needed, the rules to accredit these entities.

**? Design questions:** When deciding on the types of restrictions to apply, the host country government will have to consider how adherence with additional criteria will be checked and, if that involves third-party entities, what the modalities for their involvement are.

### **(8) Registry**

Registry options under a gatekeeping scenario are identical to those for a full reliance scenario. A domestic program could either rely entirely on the registry system of an international offset program, or require transfer of credits from the international registry to a domestic registry. Although governments may have policy reasons for establishing a domestic registry, functionally this would be unnecessary: in principle, it would be possible to screen eligible projects and credits for domestic compliance while relying exclusively on the registry system provided by an international program.

? **Design questions:** Same as for a full reliance scenario. However, explicit eligibility checks would be incorporated into steps where credits are submitted for domestic compliance. Specifically:

- Under Option 1(A), the domestic government would determine the eligibility of retired credits from the submitted documentation.
- Under Option 1(B), the domestic government would review credits for eligibility either at the stage of accepting their transfer to the government's account (at which point the transfer could be rejected), or at the final step of notifying the entity whether the credits had been accepted for domestic policy requirements.
- Under Option 2, the domestic government would review credits for eligibility as they are transferred from the international program registry to the domestic registry
  - If transfers are conducted automatically (Path A), the domestic registry software system could be programmed to accept only eligible credits. The system could also require a manual review and confirmation of eligibility by domestic program officials before completing the transfer (as indicated in section 3.2).
  - If transfers are conducted manually, domestic program officials or external entities would review eligibility when reviewing the documentation submitted as part of a transfer request (as indicated in section 3.2).

With regard to development and operation of the domestic registry, the host country government can decide to do it in house or to outsource. This design choice is discussed in more detail in the discussion of the Registry module in the outsourcing scenario in section 3.4.2.

? **Design questions:**

- Full outsourcing of the domestic registry
- Intermediate outsourcing of the domestic registry
- No outsourcing of the domestic registry

### **(9) Market Information**

The potential supply of credits depends on the pipeline of international projects meeting the domestic criteria. The credits eligible under the domestic program might command higher prices than those in the international offset program(s) if demand increases and supply is limited.

Buyers of the credits are the same as in the full reliance model. Nevertheless, prices might be higher for the sub-set of credits that are allowed to be used for the domestic offset program, in which case

international purchasers may choose to buy other, cheaper credits, leaving the market predominantly exclusive to parties participating in the domestic offset program.

### **3.3.3. Summary: Design Choices under the Gate Keeping Scenario**

Summarizing the analysis presented in the previous section, policy makers planning or designing a domestic offset program under gate keeping will need to consider the following main design questions with regards to leveraging international experience:

1. Choice of the international offset program(s) accepted under the domestic offset program.
2. Use of add-on labels: reliance on offset programs only, or introduction of additional compulsory add-on labels.
3. Type of registry: reliance on international registry, or allow transfers to domestic registry. Inclusion of explicit eligibility checks into steps where credits are submitted for domestic compliance.
4. Level of outsourcing of the domestic registry.
5. Type of domestic restrictions (e.g., geography, sectors, project types, location of VVBs, sustainable development benefits, rights to emission reductions and credits, temporary nature of credits) and resulting modalities for checking compliance with the additional restrictions, i.e.:
  - a. Automatic (e.g., through the domestic registry based on project information and serial number of credits)
  - b. Manual (through domestic review and approval process), by the government (e.g., the administrator of the program), or by external entities (e.g., entity accredited under the accepted international offset program(s), or entities accredited according to domestic accreditation rules). If a manual check is introduced, the government might need to introduce of additional domestic methodologies and tools (e.g., to demonstrate the compliance with additional requirements on sustainable development benefits).
6. Type of appeal procedure for the domestic decision: no procedure or additional domestic procedure.

The key impacts, advantages and disadvantages of these approaches are discussed in chapter 4.

### **3.3.4. Gate Keeping in Practice: The EU, Mexico, South Africa and the Republic of Korea**

*Examples:* The EU, Mexico, South Africa and Democratic People's Republic of Korea.

## **3.4. Outsourcing**

### **3.4.1. General Description**

Under the outsourcing scenario, a domestic body reviews and approves projects and issues credits. This body is responsible for oversight and enforcement of the program. Some of the infrastructure modules of the domestic program may be designed to mirror those in international offset programs, but they are implemented and run domestically. Some others are outsourced to international offset programs. "Outsourcing" means here that the domestic program uses other providers, including international offset programs and technical service providers.

Modules outsourced to international programs must follow the rules set in the international program. Some modules are more conducive to outsourcing. They include:

- *Methodologies and tools*: methodologies approved under selected international offset programs must or can be used under the domestic offset program. In this case, new methodologies to be used under the domestic program are developed and approved by the relevant international offset program. Forms developed by international programs can also be used, such as templates to describe projects (e.g., “project design document form” from the CDM)
- *Validation, verification and accreditation*: validation and verification entities accredited under an international offset program must or can be used for the validation and verification of projects under the domestic offset program.

Similarly, the domestic registry can be outsourced to an external registry provider.

The outsourced modules can be complemented by domestic modules. In this case the domestic infrastructure needs to be set up accordingly. For example, a sub-set of VCS methodologies can be accepted along with domestic methodologies. Domestic procedures and bodies then need to be in place for the development, review and approval of methodologies.

### 3.4.2. Description by Module

The outsourcing scenario is depicted in figure 9 and explained in detail by module below.

#### (1) Governance and Institutions

A key difference between the outsourcing scenario and the previous full reliance and gate keeping scenarios is that the governing bodies and institutions are domestic and *not* from the international offset program or programs. The rules are developed by the host country government and the domestic offset program is administered domestically. The domestic body sets the rules, reviews and approves the projects, issues the credits, and is responsible for the oversight and enforcement of the program.

The exact mandate of each institution depends on the design of the modules. For example, if domestic methodologies are used, then a domestic body able to assess new methodologies and approve them is needed.

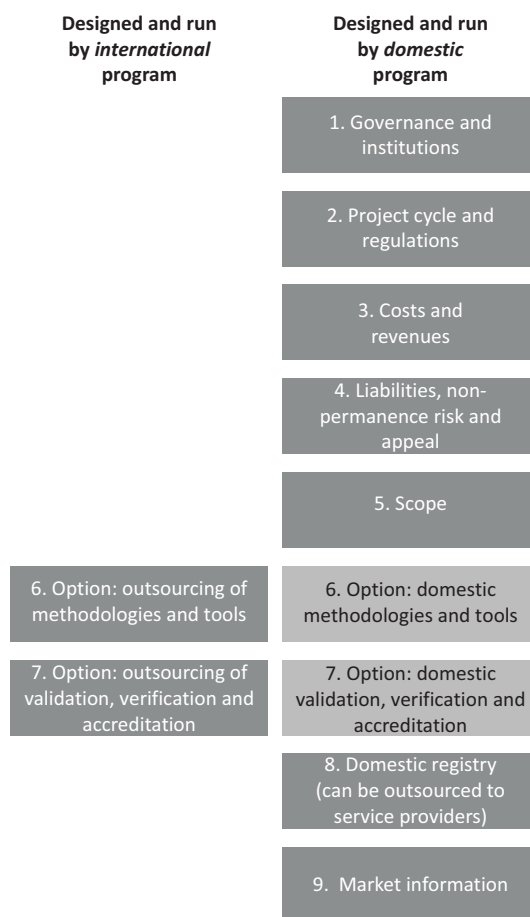
The outsourcing of modules implies close alignment between the international and the domestic offset program and might require sharing of intellectual property. Agreement on modalities for sharing information between the international and domestic programs might be helpful or required.

#### (2) Project Cycle and Regulations

The project cycle is defined by the domestic offset program. As shown in the Offset Inventory, most existing offset programs follow a similar project cycle, which includes the development of the project and its validation by a third party, the monitoring and verification of the emission reductions, and the subsequent issuance of carbon credits. The host country government decides and legislates on the modalities for ownership of the emission reductions and the credits (how to assess and confirm who has these rights, whether this right is with respect to all of the revenue generated from the sales of the credits or whether



**Figure 9. The Outsourcing Scenario**



to allocate right to part of the revenue from credits sales to the host country in the form of a domestic tax or levy, etc.—see Module 2. Project cycle in appendix A for more details).

The main differences in the project cycle are observed around:

- The timing of the steps, e.g., stakeholder consultation organized before or during validation, and third party validation before verification, or combined with first verification
- The name of the steps, e.g., completeness check under the CDM vs. listing under CAR.

A key question that policy makers will have to answer when designing a program under the outsourcing scenario is which module(s) to outsource. The choice of the modules to outsource will depend on considerations to some extent similar to those relevant for the choice of the international programs under the full reliance and the gate keeping scenarios:

- Alignment of core principles between the modules of the international offset program and the intended domestic program, including on demonstration of additionality, baseline setting and emission reduction quantification.
- Acceptance of the module in other regimes.
- Existing pipeline of projects using the module(s) outsourced.



- Modalities for cooperation with the international programs where the module is taken from. Cooperation is not necessarily needed (e.g., GS, VCS and JCM use DOEs accredited under the CDM without extensive cooperation with the CDM Accreditation team and other CDM bodies), but can help ensure the modules are appropriate for the domestic program.
- Oversight and enforcement:
  - For modules outsourced to international programs, the responsibility for decisions on the design, oversight and enforcement of the outsourced modules lies with the international offset program body. The modules most likely to be outsourced are modules that can be used as they are under the domestic program and do not need to be modified to be line with the rules of the domestic program. They are also modules where the host government might be willing to delegate oversight and enforcement to another entity. These modules include methodologies and tools, and VVBs.
  - Modules outsourced to external service providers are developed specifically for the domestic program (e.g., registry). In this case, the responsibility for all decisions regarding registry design, implementation and administration lies with the domestic offset body. However, domestic governments choose to contract out registry services to varying degrees.

It is common practice for international offset programs to outsource modules to other international offset programs or external service providers (e.g., CDM and CAR methodologies are allowed under the VCS).

Considering the above, the following modules are the most likely to be outsourced:

- Outsourcing to international offset programs:
  - Methodologies and tools (use of methodologies and tools from international program)
  - Validation, verification and accreditation (use of validation and verification entities accredited in an international program). Note that validation and verification *standards* are less likely to be outsourced. As the domestic program is reviewing projects and issuing credits, it is likely that it will want to make sure that the standards fully reflect the domestic rules and might be reluctant to delegate the oversight of this activity to the international offset program.
- Outsourcing to external service providers: domestic registry.

If no module is outsourced and everything is administered domestically, the domestic offset program falls under the indirect reliance scenario discussed in section 3.5.

? **Design questions:** When designing a domestic offset program under outsourcing, policy makers will need to decide which modules to develop domestically and which modules to partly or fully outsource.

### (3) Costs and Revenues

The majority of administrative costs and revenues are incurred by the domestic offset program, except some of the costs linked to the outsourced modules (e.g., development and approval of methodologies). Tapping into the existing international offset programs infrastructure can help reduce domestic costs. In turn, the international programs can tap into the experience in the domestic program to expand or modify their program. Depending on the modules outsourced and on the type of interaction between the international and domestic modules, some cost and revenue sharing agreement might need to be considered.

The project developers are mostly incurring the transaction costs pertaining to the domestic program. If the development and approval of methodologies is outsourced, the project developers incur the costs linked to this process under the international offset program.

#### **(4) Liabilities, Non-Permanence Risk and Appeal**

The host country needs to decide how to address the questions regarding distribution of liabilities, mitigation of non-permanence risk and appeal mechanism. The approaches observed in the international programs are presented in the appendix A, Module 4. Liabilities, non-permanence risk and appeal (administration module).

#### **(5) Scope**

The scope of the domestic offset program is decided by the host country government depending, for example, on the sectors where the government wishes to support mitigation but that are not covered by other incentive programs or legislation. This choice may be guided by the scope defined by international offset program(s), especially if the methodologies and tools are outsourced to an international program.

The government can also decide to require the use of existing labels.

? **Design questions:** When designing a domestic offset program under outsourcing, policy makers will need to decide whether to require the use of add-on labels.

#### **(6) Methodologies and Tools**

As mentioned above, one of the choices to be made under an outsourcing domestic offset program is around the modules to outsource, and whether to outsource them fully or partially. With regards to methodologies and tools, a variety of approaches can be envisaged:

- *No outsourcing:*
  - Use of methodologies and tools developed domestically and/or use of forms developed domestically (e.g., forms to describe the projects, monitoring report templates, etc.). Methodologies, tools and forms can be developed using existing material from an international program but adapted to domestic circumstances and approved under the domestic program. This requires a domestic body/bodies able to assess and approve new methodologies.
  - Example: domestic offset programs in the indirect reliance scenario (see section 3.5), e.g., the Chinese Certified Emission Reduction (CCER) system.
- *Full outsourcing:*
  - Use of methodologies and tools developed and approved under an international program only, and/or use of forms developed under an international program only.
  - Example: none.
- *Partial outsourcing:*
  - Use of both types of methodologies (methodologies approved under the domestic program as well as methodologies approved under the international program). Only a sub-set of methodologies approved under the international program might be accepted (e.g., for certain sectors or project types).
  - Examples: CDM and CAR methodologies but also VCS methodologies allowed under the VCS.

- ? **Design questions:** When designing a domestic offset program under outsourcing, policy makers will need to decide whether and how to outsource methodologies, tools and forms.

### (7) Validation, Verification and Accreditation

Another module that can be outsourced is validation, verification and accreditation. The following approaches can be envisaged:

- *No outsourcing:* only validation and verification entities accredited under the domestic offset program are allowed. This requires the development of a domestic accreditation infrastructure (i.e., regulations, capacity, and governance).
- *Full outsourcing:* only validation and verification entities accredited under an international offset program (e.g., the CDM) and/or under a recognized standard framework (e.g., accredited by a member of the International Accreditation Forum for ISO 14065) are allowed to validate and verify the domestic projects.
  - Example: DOEs and entities accredited under ISO 14064 in the JCM.
- *Partial outsourcing:* a mix of the above options.
  - Example: entities accredited under programs recognized by SC (incl. CDM, VCS and CAR) and other accredited entities approved by SC (e.g., entities with proven experience in certification of ISO, OHSAS or similar social and environmental programs).

In addition, as for the gate keeping scenario, there can be a restriction on the location of the bodies, e.g., restriction to domestic bodies only.

Again, one of the choices to be made is whether to outsource validation, verification and accreditation, and whether to outsource them fully or partially.

- ? **Design questions:** When designing a domestic offset program under outsourcing, policy makers will need to decide whether and how to outsource validation, verification and accreditation.

### (8) Registry

The domestic government (or other designated domestic body) is ultimately responsible for all decisions regarding registry design, implementation, and administration. However, the domestic government can choose to contract out registry services, with varying degrees of involvement in the registry's design, functionality, and operation. The key constraint under this scenario is that credits cannot be issued without the express authorization of the domestic government. However, different levels of government involvement in, and control of, registry functions are possible within this framework:

- *Full outsourcing:* the domestic government authorize one or more registry service providers to handle all registry functions, including account-holder sign-ups; listing and registering projects; and credit issuance, tracking, and retirement. In this case, the domestic government would rely on existing registry infrastructure, IT systems, and procedures, with little or no customization relating to the domestic offset program. Rules and requirements related to eligible account holders would largely be left up to the registry service providers. The domestic government would establish general parameters for registry service providers to follow in reviewing and accepting project

submissions, registering projects, and issuing credits. Final decisions and authorization regarding any of these steps could still be made by government officials.

- Examples (international programs): the VCS and GS, who outsource to external registry providers.
- *Intermediate outsourcing*: as with full outsourcing, the domestic government authorizes one or more registry service providers to handle all registry functions. However, the government could require the service providers to customize their registry systems, procedures, and functionality to serve specific goals of the domestic offset program (e.g., with regard to report generation or accessibility of project information). Furthermore, domestic government officials may take a more active role in determining eligibility of account holders, approving projects for listing and registration, and issuing credits.
- *Limited outsourcing*: the domestic government designs and administers its own registry system, but outsource the basic infrastructure and IT systems to a third-party service provider. Domestic government staff would be responsible for administering all registry functions, including sign-up of account holders, listing and registration of projects, and credit issuance. Users of the registry would therefore interact with domestic program staff rather than an independent registry service provider. However, the computer systems and user interface for the registry would still be maintained by a “behind-the-scenes” service provider.
  - Examples: CAR and Australian National Registry of Emissions Units (ANREU).
- *No outsourcing*: the domestic government designs, develops, and maintains a registry system completely independently, with no reliance on outside service providers for any element.

? **Design questions:** when designing a domestic offset program under outsourcing, policy makers will need to decide whether to outsource the registry and to what extent.

### (9) Market Information

The potential supply of credits depends on various factors, including the mitigation potential of eligible projects, the transaction costs for project developers (which will be influenced by the complexity of the design of the domestic offset program), the demand for the credits under the relevant domestic policy (e.g., ETS or tax) as well as programs in other countries accepting the offsets generated under the domestic program, and the carbon price under the relevant domestic policy.

Buyers will be mostly domestic entities liable under the domestic carbon policy (e.g., ETS, carbon tax). They might also include buyers from programs in other countries recognizing the carbon credits generated as possible compliance units, or voluntary buyers.

The domestic program will exhibit some similarities with the international program. As such, projects approved under an international program might consider transferring to the domestic program if conditions are better, e.g., price for the credits is higher. However, the following points need to be considered:

- The international offset program might not allow the project to be approved in another program (e.g., to be registered, a CDM project has to show that it is not registered under another program). Conversely the domestic program might not accept the project if it is already registered under an international program as is the case for the Chinese Certified Emission Reduction (CCER) scheme (see box 3).

- Double-approval results in risk of double-counting (i.e., projects registered in two programs could lead to double issuance for each tonne of CO<sub>2</sub> reduced).

A transfer from an international program to a domestic program could require deregistration from the international program if this is allowed. Under the CDM, deregistration is now officially allowed and a procedure was recently approved. The draft procedure stipulates that project participants would need to request deregistration of a registered CDM project to the UNFCCC Secretariat, and provide evidence of the agreement of all project participants to the deregistration, as well as written confirmation of no objection by the DNA of all Parties involved. Also, no issuance of CERs will take place for any project activity after the effective date of the deregistration.<sup>10</sup>

### **3.4.3. Summary: Design Choices under the Outsourcing Scenario**

Summarizing the analysis presented in the previous section, policy makers planning or designing a domestic offset program outsourcing will need to consider three main design choices with regards to leveraging international experience:

1. Choice of the modules to outsource and the level of outsourcing (full or partial):
  - Methodologies and tools
  - Accreditation
  - Registry
  - A combination of the above
2. Establishment of a domestic registry, with varying levels of outsourcing to registry providers
3. Use of add-on labels: reliance on offset programs only, or introduction of additional compulsory add-on labels.

The key impacts, advantages and disadvantages of these approaches are discussed in chapter 4.

There is also a wide variety of approaches for the design of the domestic modules. This note focuses on the modalities for leveraging the international experience and does therefore not cover this question.

### **3.4.4. Outsourcing in Practice: International Offset Programs**

**Examples:** no domestic offset program falls under the outsourcing scenario, but many international programs outsource methodologies and tools (e.g., CDM methodologies under the GS, VCS and JI) and validation and verification entities (e.g., CDM DOEs under JCM, GS, VCS, CCBS and SC).

## **3.5. Indirect Reliance**

### **3.5.1. General Description**

In the indirect reliance scenario, the domestic offset program is fully designed and run by a domestic body. Both the administration and infrastructure modules are developed and implemented domestically, though based on the international experience available. The domestic program reviews and approves the projects

<sup>10</sup> CDM-EB79-AA-A14—Revision of CDM project standard, validation and verification standard, and project cycle procedure, version 2.0.

and issues credits and is responsible for the oversight and enforcement of the program. International offset programs are used as examples—by using existing methodologies as a basis for customization to the domestic context, or leveraging of the existing project pipeline for example—but they are not directly used in the domestic offset program. The domestic program might also rely on the infrastructure *supporting* the international offset programs as opposed to the infrastructure itself (e.g., registry or IT service providers, technical experts for the training of validation and verification entities).

The Chinese CER (CCER) scheme (see box 3), Alberta (see box 4), Québec (see box 5), the Regional Greenhouse Gas Initiative ([RGGI] see box 6), and Costa Rica (combining gate keeping and indirect reliance, see box 7) are examples of programs that fall under the indirect reliance scenario.

### **3.5.2. Description by Module**

The indirect reliance scenario is depicted in figure 10 and explained in detail by module below.

This Technical Note focuses on how best to leverage international experience when designing a domestic program. The description of the indirect reliance below is therefore not a comprehensive list of all the approaches possible to design a full domestic program. Instead, it highlights in what the indirect reliance scenario is different from the other scenarios.

#### **(1) Governance and Institutions**

In the indirect reliance the whole domestic offset program, i.e., administration and infrastructure modules, is designed and administered domestically. The domestic body sets the rules, reviews and approves the projects and issues the credits, based on its own set of methodologies and tools, VVBs, accreditation system, and registry. It is also responsible for the oversight and enforcement of the program.

A complete set of institutions need to be in place domestically, including:

- An executive body,
- A program administrator, and
- Advisory panels/experts.

There is flexibility for the governance of these bodies, e.g., combination or separation of the executive and administrative functions, establish standing advisory panels or use ad-hoc experts as needed. The host government can interact with international offset programs and exchange ideas and experience but this relationship is not formal and regulated by working arrangements.

#### **(2) Project Cycle and Regulations**

The project cycle is defined by the host country government. As shown in the Offset inventory (appendix A), most existing offset programs follow a similar project cycle, which includes the development of the project and its validation by a third party, the monitoring of the emission reductions, their verification, and the subsequent issuance of carbon credits. The host country government decides and legislates on the modalities for ownership of the emission reductions and the credits (who has this right, whether a fee should be levied before issuance, etc.).

**Figure 10. The Indirect Reliance Scenario**

**Designed and run  
by *international*  
program**

None. The domestic program is fully designed and run domestically.

**Designed and run  
by *domestic*  
program**

1. Governance and institutions
2. Project cycle and regulations
3. Costs and revenues
4. Liabilities, non-permanence risk and appeal
5. Scope
6. Option: domestic methodologies and tools
7. Option: domestic validation, verification and accreditation
8. Domestic registry (can be outsourced to service providers)
9. Market information



The main differences are observed around:

- The timing of the steps, e.g., stakeholder consultation organized before or during validation, third party validation before verification, or combined with first verification.
- The name of the steps, e.g., completeness check under the CDM vs. listing under CAR.

### **(3) Costs and Revenues**

All the administrative costs and revenues are incurred by the domestic offset program. Costs include staff salary, overheads, materials, travel costs and third party fees. Revenues may include project and issuance fees, as well as other income streams—from the organization of training sessions, workshops or conferences for example. Project developers incur transaction costs pertaining to the domestic program.

Table 4 in section 3.2.2 and Module 3. Costs and revenues (administration module)s in appendix A provide further details and examples on cost and revenue streams in international offset programs. The costs and revenues under the CDM involve costs related to the operation of a program under the UN framework and involve international staff, while the costs and revenues under CAR are mostly linked to operations in the US. The costs and revenues under a domestic program will be largely influenced by domestic circumstances (e.g., cost of labor).

### **(4) Liabilities, Non-Permanence Risk and Appeal**

As under outsourcing, the domestic program has the freedom to choose how to address questions regarding distribution of liabilities, mitigation of non-permanence risk and appeal mechanism. The international experience sheds light on the different options available (see (4) in section 3.2.2 and Module 4. Liabilities, non-permanence risk and appeal (administration module) in appendix A).

### **(5) Scope**

As under outsourcing, the scope of the domestic offset program is decided by the host country government, depending for example on the sectors where the government wishes to support mitigation but that are not covered by other incentive programs or legislation.

### **(6) Methodologies and Tools**

The methodologies and tools are all developed and approved domestically. The methodology types and the process for the development and approval of methodologies need to be decided upon. The various approaches taken by existing international offset programs are discussed in appendix A, Module 6. Methodologies and tools (infrastructure module).

### **(7) Validation, Verification and Accreditation**

Domestic rules for validation and verification as well as accreditation apply. VVBs are accredited following a domestic procedure. This process might be fully domestic (e.g., domestic accreditation body and domestic VVBs) and/or relying on international systems other than those used in international offset programs (e.g., accreditation of VVBs by a member of the International Accreditation Forum for ISO 14065).

### **(8) Registry**

Under indirect reliance, the domestic offset program would design, develop, and maintain a registry system, which could be outsourced (partially or fully) as in the three other scenarios.

### **(9) Market Information**

As under outsourcing, the potential supply of credits depends on various factors, including the mitigation potential of eligible projects, abatement costs, the transaction costs for project developers (which will be influenced by the complexity of the design of the domestic offset program), the demand for the credits under the relevant domestic policy (e.g., ETS or tax) as well as programs in other countries accepting the offsets generated under the domestic program, and the carbon price under the relevant domestic policy.

Buyers will be mostly domestic entities liable under the domestic carbon policy (e.g., ETS, carbon tax). They might also include buyers from programs in other countries recognizing the carbon credits generated as possible compliance units, or voluntary buyers.

As under the outsourcing scenario, projects approved under an international program might consider transferring to the domestic program if conditions are better, e.g., price for the credits is higher. However, this raises similar questions around the modalities for transfer and the risk of double-counting (see (9) in section 3.4.2).

**? Design question:** While designing the domestic offset program, policy makers will have to decide to which extent mirroring international programs.

### **3.5.3. Summary: Design Choices under the Indirect Reliance Scenario**

Summarizing the analysis presented in the previous section, policy makers planning or designing a domestic offset program under indirect reliance will need to consider the following design choices with regards to leveraging international experience:

1. Domestic rules heavily drawn from international experience
2. Domestic rules different from international experience

The key impacts, advantages and disadvantages of these approaches are discussed in chapter 4.

There is a wide variety of approaches for the design of the domestic modules. This note focuses on the modalities for leveraging the international experience and does therefore not cover this question.

### **3.5.4. Indirect Reliance in Practice: Alberta, California (for Cap-and-Trade Program), China, Costa Rica, Québec and RGGI**

*Examples:*

- Domestic rules heavily drawn from international experience: China's Certified Emission Reductions (CCER) scheme (see box 3), and Costa Rica (combining gate keeping and indirect reliance, see box 7).
- Domestic rules different from international experience: incl. Alberta (see box 4), California (for cap-and-trade program), Québec (see box 5) and RGGI (see box 6).

### Box 3. Indirect Reliance in Practice—Spotlight on China CCER Scheme

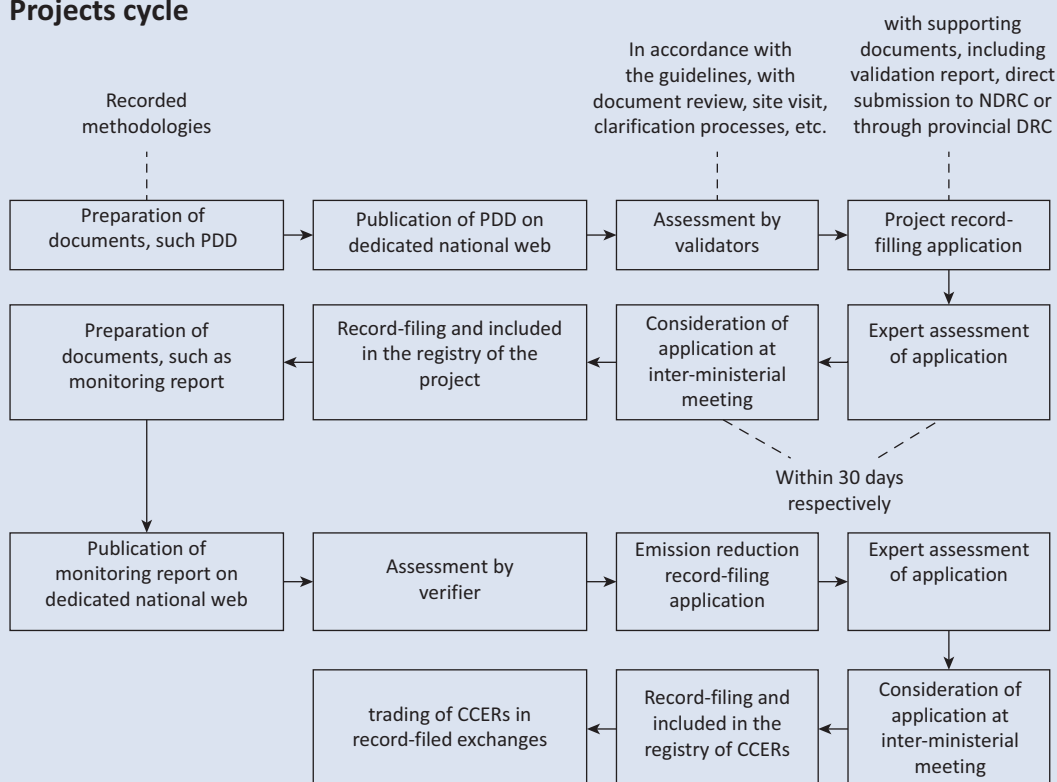
The Chinese government developed and implemented the Chinese Certified Emission Reduction (CCER) scheme to provide offsets for the Chinese markets, which is currently composed of seven operational pilot ETS. Each pilot has its own rules with regards offset eligibility (quantitative limits as well as qualitative restrictions on, e.g., the implementation date, the location of the project, the project types).

The CCER scheme is largely based on the CDM (see the figure below for the project cycle). Key differences were introduced to reduce transaction costs while maintaining the quality of the projects and the credits. They include no request for review stage, no charge for the project developers and different requirements for validation and verification entities.

Eligible projects include:

- New projects
- Projects that passed the host country’s CDM approval by the National Development and Reform Committee but not registered by the CDM Executive Board
- Chinese CDM projects with pre-registration emission reductions

#### Projects cycle



Source: Shu, Wang and Duan Maoshen. March 2, 2014 in Mexico City, Mexico. 2014. “China’s Domestic Offset Scheme.” Presentation to the PMR South Exchange on Developing Domestic Offset Schemes. Paper available at: [https://www.thepmr.org/system/files/documents/China%27s%20domestic%20offset%20scheme%20-20140226\\_0.pdf](https://www.thepmr.org/system/files/documents/China%27s%20domestic%20offset%20scheme%20-20140226_0.pdf)

*box continues next page*

### Box 3. Indirect Reliance in Practice—Spotlight on China CCER Scheme *(continued)*

- Chinese CDM-registered projects with planned reductions but not issued. In order to avoid double-counting, these projects first need to be deregistered from the CDM. This is possible now that the deregistration procedure is in place.

All projects must have started construction after 16 February 2005.

As of October 2014, 369 CCER projects had started the registration process and 90 projects had been registered.

*Sources:* Thomson Reuters Point Carbon. 2014. “Dissecting China’s Carbon Offset—An Interview Study, 11 December 2014”; ICIS and Hanergy. 2014. *The Essentials of Chinese Certified Emission Reduction (CCER)*.

### Box 4. Indirect Reliance in Practice—Spotlight on Alberta

Alberta’s offset market was initiated as a market instrument to support facility compliance under the “Regulation,” which requires all large, industrial facilities in Alberta emitting over 100,000 tCO<sub>2</sub>e per year to reduce their emissions intensity by 12 per cent from their government approved baseline emission intensity. Only companies that are not regulated by the “regulation” may generate offsets. Offsets must be generated in Alberta.

Protocols applied must be those developed from Alberta and Canada. Thirty protocols have been approved to date in the sectors of agriculture, methane reduction (waste management), efficiency improvement, renewable electricity, waste heat recovery, and fuel switching. The protocols are developed bottom up and top down. These protocols have drawn on the experiences of the CDM, CAR, the WRI, WBCSD, IPCC, and Amercian Carbon Registry. The system has learnt by doing. As a result some of the early protocols have been retired.

Alberta uses the ISO 14064-2 platform for establishing and quantifying GHG reductions and removals. Alberta retains the right to invalidate or revoke offset credits. Re-verification work is funded by the government department.

The *Climate change and emissions management fund* provides a price ceiling for investment in offset credits. The price is currently set at \$15 per tCO<sub>2</sub>. The Canadian standard association was contracted to run the registry last year—the experience at running their own registry was very cumbersome. Alberta had previously established a registry through C3 (Climate Change Central) in partnership with CSA Groups GHG clean Projects Registry. The registry was a public forum (i.e., website) providing details on projects and serialized offset credits. Outsourcing the registry is perceived as very effective by the government.

*Source:* PMR Secretariat.

### Box 5. Indirect Reliance in Practice—Spotlight on Québec

#### *Validation, verification and accreditation*

Offset project validation for projects registered under the Quebec cap-and-trade system is not required prior to beginning the project, but is rather combined with the verification at the end of the first reporting period. Verification is done by a third party. Project developers choose their verification bodies and assume this cost. Verification bodies must meet certain requirements, though, such as being ISO 14065 certified.

#### *Registry*

There is a registry on the government's website where the offset projects are listed and documents such as the project and verification reports will be available. To issue offset credits and manage transfers between entities, the CITSS (Compliance Instrument Tracking System Service) system is used. This system, which is operated jointly by Quebec and California, was developed and is hosted by a subcontractor.

#### *Liabilities*

There is an explicit requirement that the offset project reductions have not been credited by another program. Quebec also has an integrity account which may be used in the event that offset credits are subsequently found to have been issued for reductions that did not occur and the project promoter is unable to replace them. The integrity account is funded by retaining 3% of the offset credits issued for each approved project.

*Source:* Québec government.

*Note:* This spotlight highlights a few key features of the program. It is not a comprehensive description of the program.

### Box 6. Indirect Reliance in Practice—Spotlight on the Regional Greenhouse Gas Initiative (RGGI)

RGGI is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce CO<sub>2</sub> emissions from the power sector. It was the first mandatory GHG emissions trading system in the United States and covers 168 entities. The program's first compliance period was from 1 January 2009–31 December 2011. It is now in its third compliance period (1 January 2015–31 December 2017). The ETS covers the following sectors: Fossil fuel electric generating units (thresholds equal or greater than 25 MW. Only CO<sub>2</sub> is covered. 3.3% of an entity's liability may be covered with offsets. As part of the 2012 program review, RGGI participating states decided to abolish the price triggers for offsets and some states chose to adopt a new forestry offset protocol based on the California Air Resources Board protocol for US forestry projects.

Offset allowances from five offset types located in RGGI states are allowed: (1) Landfill methane capture and destruction, (2) Reduction in SF<sub>6</sub> emissions, (3) Sequestration of carbon due to reforestation, improved forest management, or avoided conversion (4) Reduction or avoidance of CO<sub>2</sub> emissions from natural gas, oil, or propane end-use combustion due to end-use energy efficiency (5) Avoided methane emissions from agricultural manure management operations.

The RGGI States have developed an offsets module in the RGGI CO<sub>2</sub> Allowance Tracking System (RGGI COATS). The RGGI COATS offsets module is used to register offsets projects, track offset project Consistency Application and Monitoring and Verification Report submittals to RGGI States, track project regulatory status and the award of CO<sub>2</sub> offset allowances, and provide public access to offset project documentation.

*Source:* RGGI Website.

### **Box 7. Combining Gate Keeping and Indirect Reliance—The Case of Costa Rica**

Costa Rica falls somewhere between the gatekeeping and the indirect reliance but is closer to indirect reliance in the spectrum than gatekeeping.

Costa Rica is progressing in developing a national climate neutral strategy supported by the use of domestic offsets. Companies can voluntarily decide to participate in the goal of becoming carbon neutral. Offsets may be used to support them achieve this goal. Total demand for offsets is anticipated to be around 1,3 million tons C by 2021. There are estimated to be 100–200 potential actors in the industrial sector and 9,000 actors in the forestry sector who are expected to become active in the carbon market.

#### *Eligible offset program:*

- *Gate keeping:* CDM; all voluntary programs in principle although, it primarily refers to CAR, and
- *Indirect reliance:* Costa Rican domestic program (generating carbon credits—UCC), in sectors not well covered by the CDM in Costa Rica and where there is a significant mitigation potential (forestry, agriculture and transport).

Credits from the CDM and the voluntary offset programs must be approved by the Costa Rican Carbon Board. i.e., there is an inbuilt incentive for UCCs since they do not face the administrative hurdle of approval by the Board.

#### *Scope*

Sectors covered include:

- a) Power generation from renewables,
- b) Agriculture and livestock (notably improving livestock grazing, reducing N<sub>2</sub>O in fertilizer use and reforestation of pastures, reducing emissions in coffee cultivation and milling),
- c) Solid waste—land fill waste management and methane gas capture and use, composting of organic waste,
- d) Transport sector—multi modal transport systems, energy efficient transport technology and improved transport management, and
- e) Construction sector—encouraging more efficient building processes.

#### *Methodologies*

The methodologies under the UCC program builds on CDM methodologies, which are adapted to the national circumstances. This often involves simplification of approaches, e.g., incorporation of Costa Rica's emission factor for the grid. For the forestry sector, the methodologies build on CAR and REDD+. Standardized methods for determining additionality or the crediting baseline are applied.

#### *Validation, verification and accreditation*

Under the UCC program, auditors must be Costa Rican companies or individuals.

#### *Risk of non-permanence*

The government has a reserve account to be managed by the Carbon Board as a risk mitigation mechanism. The reserve account contains certificates generated from projects developed in the forestry area under FONAFIFO Forestry Ministry. The account will be used to stabilize the market if UCCs are lost or need to be replaced due to non-permanence or non-viability.

*box continues next page*

**Box 7. Combining Gate Keeping and Indirect Reliance—The Case of Costa Rica** *(continued)*

*Registry*

Double counting/overlap between suppliers and buyers of credits is to be addressed by ensuring that reduction plans (made by companies and institutions that may purchase offsets to meet their planned carbon neutrality target) are kept separate from offsets and that the national GHG inventory is robust. The tracking system will also limit the potential for double counting.

The national registry will be administered by MINAE. It will be divided into a project registry and a transaction registry. It will also list experts who offer validation and verification services and companies or institutions that wish to become Carbon Neutral. In October 2013, BANCO2, the carbon exchange for domestic units, was created.

*Source:* PMR Secretariat.



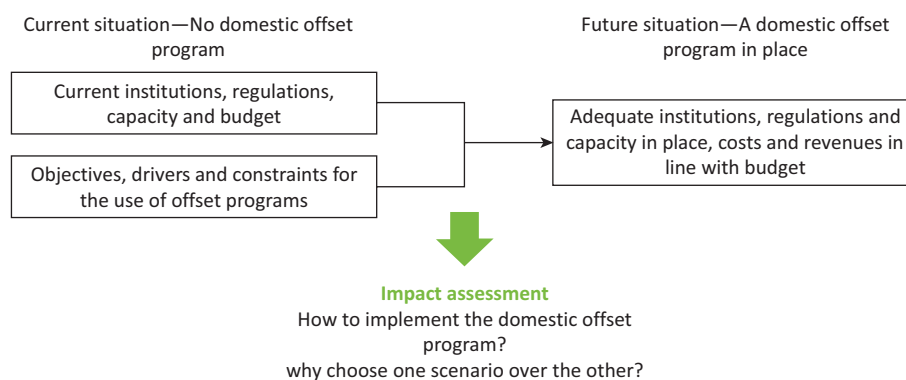
## 4. Impacts of the Options Identified

Making use of the existing modules of international offset programs in a domestic context under the four scenarios discussed in chapter 3 has institutional, legal, technical and operational, and economic impacts for the host country, as well as potentially for the international programs. These impacts must be understood and assessed by policy makers so that the domestic offset program is designed to accommodate national circumstances and achieve national objectives.

The nature and extent of these impacts depends on the current national context (the “baseline”). The intended objectives of the domestic program, its drivers, and the constraints faced for its development and implementation also influence the impacts.

This chapter first sets the premises: it presents the types of impacts, discusses the possible objectives, drivers and constraints to the development and implementation of the domestic program, and sets a baseline which captures these considerations (see figure 11). The impacts of the design questions for each scenario identified in chapter 3 are then identified and discussed, highlighting some of the key considerations for the design of a domestic offset program.

**Figure 11. Impact Assessment**



### 4.1. Impact Categories

Four main categories of impacts are defined:

- *Institutions*: what changes in the host country institutions are needed? Which new ones need to be created and which existing ones amended?
- *Regulations*: what regulations might need to be put in place and/or amended?
- *Technical and operational capacity*: what capacity needs to be built to design and run the domestic offset program?
- *Costs and revenues*: how much will it cost to design and run the program? How much revenue will it bring?

**Table 5. Impact Categories and Offset Modules**

<i>Impact category</i>	<i>Relevant offset program modules</i>
Institutions	(1) Governance and institutions (2) Project cycle and regulations
Regulations	(1) Governance and institutions (2) Project cycle and regulations (4) Liabilities, non-permanence risk and appeal (5) Scope (6) Methodologies and tools (7) Validation, verification and accreditation (8) Registry
Technical and operational capacity	All modules
Costs and revenues	All modules (3) Cost and revenue (9) Market information

The impact categories are linked to the modules of an offset program identified in the Inventory. The most relevant modules for each impact category are shown in table 5. However, to ensure the development of a program which meets domestic objectives, it is important to look at the impacts of the program as a whole and not in isolation per module. Therefore, the impact assessment will make reference to modules when relevant but it is not structured around modules.

## 4.2. Objectives, Drivers and Constraints for the Use of Offset Programs

Impacts can be advantageous in some cases and disadvantageous in others, depending on the objectives, drivers and constraints of the offset program. The factors influencing which include:

- Cost containment mechanisms under another domestic policy (e.g., carbon tax or ETS)
- Preparations for integration into an international carbon market
- Size of the targeted market
- Capacity building and gradual development of the program
- Preparation for tighter abatement measures domestically (e.g., domestic ETS)
- Support of abatement efforts in selected sectors, and other domestic priorities
- Past experiences and existing capacities
- Time pressure
- Budget constraints
- Credibility
- Enforcement and oversight
- Interaction with other regulations
- Interdependence

*Cost containment and preparation for an international carbon market:* domestic offset programs can be developed to serve either mainly or exclusively domestic buyers, and serve as a cost-containment mechanism under another domestic or regional policy (ETS, carbon tax). They can also be developed to serve international buyers, for example appendix A buyers of Certified Emission Reductions (CERs) and in the future potentially buyers of credits generated by the UNFCCC new market-based mechanism, and buyers in other jurisdictions, like the Québec offsets accepted under California Cap-and-Trade program. Alternatively, they can be designed considering both the domestic and the international markets, with the demand coming from both sources and the actual purchases made influenced by the price of the offsets on the respective markets. For domestic offsets to be accepted on international markets, the requirements of the domestic program need to be accepted by the regulators of other potential markets, or match internationally recognized standards in order to ensure both the recognition and fungibility of the associated carbon credits.

*Capacity building and gradual development of the program:* Setting up a domestic offset program can be a route for developing various capacities (e.g., institutional capacities on mitigation, technical capacities on MRV) of a broad set of actors including:

- Private sector entities developing projects under the program
- Local validation and verification entities assessing the projects
- Government through project review and approval and issuance of carbon credits.

It is possible that building capacity might therefore be prioritized over other aspects of the program like cost-efficiency. Also, the offset program can evolve over time: it can start with as full reliance or gate keeping program, to move to an outsourcing or an indirect reliance program as, e.g., capacities, resources, knowledge and size of the market evolve.

*Preparation for tighter abatement measures domestically:* As domestic offset programs can help develop capacities, they can prepare actors to tighten abatement measures domestically—through extension of the domestic ETS to the sectors covered by the domestic offset program. For example, offset programs can help build MRV capacities and approaches that could then be used to expand the coverage of an ETS or carbon tax as these instruments become mature. On the other hand, if this is a stated objective of the offset program, it can make justification of additionality more difficult.

*Size of the targeted market:* The cost of developing and running a domestic offset program will depend on its design. As will be discussed in sections 4.4 to 4.7 below, domestic programs more heavily relying on international programs (i.e., full reliance and gate keeping scenarios) are likely to be quicker and cheaper to implement and run than domestic programs designed from scratch. Domestic programs where the demand for credits is expected to be large might be more able and willing to put resources into developing a full domestic program than countries where the demand for credits is expected to be limited. The former case is illustrated by the Chinese Certified Emission Reduction (CCER) scheme and the latter by the South African program currently being designed.

*Support of abatement efforts in selected sectors, and other domestic priorities:* Various tools can be used to support abatement efforts, including a domestic offset program. The offset program can be designed to complement any incentive programs in place and target sectors that do not benefit from

support under other incentive programs. The domestic offset program can also help to reach sectors not included in other carbon pricing mechanisms (e.g., agriculture and transport under an ETS) and is often selected by governments as a cost effective tool for uncovering the least cost abatement options. Furthermore, a domestic program can help support other domestic priorities, such as economic, social and environmental benefits in specific sectors. These goals could include job creation, energy access, poverty reduction, reduction in air pollutants, etc. The alignment between domestic priorities around sustainable development and the requirements of existing international offset programs will have an impact on the potential to make use of these international programs.

*Past experience and existing capacities:* In their decision making, governments might take into account past experiences with offset mechanisms and any capacities that have already been built. A country with several Clean Development Mechanism (CDM) projects in the pipeline might want to see how a domestic offset program could support these projects, which are currently suffering from low CER prices. Such a country might already have an extensive understanding of the CDM and institutional capacity that could be leveraged by a domestic offset program relying on the CDM, such as an established Designated National Authority (DNA).

*Time pressure:* One objective might be to generate credits as soon as possible to allow entities involved in the domestic ETS or included under the carbon tax to rapidly use them. Domestic programs that rely on existing elements, including modules from international offset programs, will be up and running more rapidly than programs that require extensive design and development time.

*Budget constraints:* Various costs and sources of income are attached to running a domestic offset program, dependent on:

- The steps included in the project cycle and the costs and revenues attached
- The institutions (types of institutions, international vs. domestic) bearing these costs and benefiting from these revenues
- The governance structure (number and type of bodies, roles, outsourced vs. in-house)
- The likely pipeline of projects, which is influenced by the potential demand
- The ability to attract foreign (aid or private) investment.

As a general rule, expenditure will be minimized and efforts made to ensure that costs are covered when designing and running a domestic offset program, so ensuring cost-effectiveness of the program for both the government and participants.

*Credibility:* The credibility of the domestic program at both the national and international level can play an important factor in decision making. Relying directly on an international program where rules are developed by a broad range of countries and stakeholders, borrowing elements from such a program, or developing a domestic program closely mirroring an established international program can help strengthen the credibility of the domestic program.

*Interaction with other regulations:* Domestic offset programs are part of the broader policy apparatus of a country. During the design of a domestic offset program, interactions with other existing policies, such as state aid or World Trade Organization rules, need to be considered. Going beyond the domestic context, policy makers might assess potential future interactions of a domestic offset program with offset programs

and policies in other countries and take that into account in the design of their program. This is especially important if there is an intent to link the domestic program with the programs in other states or countries, as was the case for many EU Member States when considering domestic schemes at the same time as the idea of the EU ETS was emerging.

*Enforcement and oversight:* In some cases, like under the full reliance and the gate keeping scenarios, the oversight and enforcement of the processes leading to the issuance of carbon credits are delegated to the international domestic offset program. This can lead to potential legal or enforcement difficulties. The host country will need to ensure that it has enforcement capabilities either through its own statutes or through agreements with the international programs or the project developers themselves. A domestic program that falls under the outsourcing or figure 12, where oversight and enforcement are the host country's responsibility, might give more confidence to countries which are less willing to delegate this responsibility.

*Interdependence:* With reliance comes interdependence. Relying fully or partly on international programs implies that some of the decisions will be made at the international level, outside the control of the host government. The host government can establish close working relationships with international programs and possibly envisage taking part in their governance but this does not ensure that the host country's position is reflected in the administration of the international program.

### 4.3. Baseline Situation

The impacts of a particular domestic offsetting design on a country's institutional, regulatory, technical, operational and economic capacity depends on the current context—the “starting situation” of the country. There are as many starting situations as there are countries. A typical baseline, reflecting the likely situation in countries that might consider domestic offsetting, is defined below (see table 6) in order to

**Table 6. Typical Baseline Situation (Actual Country-Specific Baseline to Be Determined by the Host Country)**

	<i>Characteristics of the typical baseline situation</i>
Institutions	The country has experience with international offset programs, especially the CDM and possibly the Gold Standard (GS) and Verified Carbon Standard (VCS). National CDM institutions are in place, normally a CDM DNA. The country is planning for, or is developing, a domestic policy that would represent a source of demand for the domestic offsets (e.g., carbon tax, ETS, regulation that require companies to offset their emissions through the purchase of carbon credits).
Regulations	There are no regulations governing the generation and use of domestic offsets. Credits for international carbon offset projects (e.g., CDM, GS, VCS) are allocated from the international offset body directly to project developers. There is no domestic capacity to carry out or oversee any transfer or trading of carbon credits.
Technical and operational capacity	Some offset developers have experience with the development of international carbon offset projects (e.g., CDM, VCS, GS). Domestic validation and verification capacity for offset projects is non-existent or limited, but some capacity exists for greenhouse gas (GHG) emissions related audits. There is a simple CDM project database listing domestic CDM projects, but there is no domestic registry.
Costs and revenues	The country has set a limited budget aside for the development of a domestic offset program.

provide a general direction to the impact assessment. It should be noted that each country should define its own baseline accurately reflecting national circumstances when planning a domestic offset program.

## ● 4.4. Impact Assessment of Full Reliance Scenario

The impact assessment is structured around the design questions of each scenario identified in chapter 3. The main advantages and disadvantages of each scenario are then highlighted.

As highlighted in chapter 3, policy makers planning or designing a domestic offset program under full reliance will need to consider the following design questions with regards to leveraging international experience:

1. Choice of the international offset program(s) accepted under the domestic offset program
2. Use of add-on labels: reliance on offset programs only or introduction of additional compulsory add-on labels
3. Type of registry: reliance on international registry or allow transfers to domestic registry
4. Level of outsourcing of the registry (discussion in section 4.6.3)

### 4.4.1. Choice of the International Offset Program(s) Accepted under the Domestic Offset Program

#### **Institutions and Technical and Operational Capacity**

Whichever international program(s) are chosen, relying on existing institutions which are already up and running means that the institutional changes in the host country are limited and would focus on ensuring the international offset program can successfully be applied domestically. Among others, the host country would need to consider:

- How to establish relationship and collaborate with the international programs,
- How to maximize the benefits of the existing experience with the international program(s), and
- How to address the risks of relying on an external program.

*How to establish relationship and collaborate with the international programs:* Domestic offset programs would need to build relationships with the relevant international program(s) and understand their essential functioning. Fully relying on an international program implies that the core principles of the domestic offset program, including environmental integrity (additionality demonstration, baseline setting, quantification and verification of emission reductions, responsibilities for over-issuance) need to be aligned with those of the international program. Ensuring this alignment needs careful assessment of the international program during the planning stage of the domestic offset program. This can be facilitated by a dialogue with the international program body and, under the CDM, by active participation in the negotiation on the CDM under the Compliance Offset Program (COP). At the implementation stage, representatives of the domestic body might want to consider getting involved in the governance of the international program(s) to get further insight into the program and influence its future. This could help ensure long-term stability of the international program and mitigate the risk of the international program evolving in a direction not in alignment with the domestic program. However, the wide range of stakeholders involved in international offset programs means that the host country government's leverage may be limited.



The introduction of a domestic program relying on an international program can have impact on the level of activity of the international program. This should also be discussed with the international body at the planning stage. The modalities of collaboration between domestic and international offset program(s), e.g., in terms of cost and information sharing, would need to be discussed and maybe be laid out in written agreements.

*How to maximize the benefits of the existing experience with the international program(s):* The domestic body can build on the existing institutions set up to deal with the international program, if applicable, e.g., the CDM DNA. The capacities of the domestic body need to match the nature and number of international offset programs accepted. In domestic programs accepting several international programs, the domestic bodies need to be abreast of the status and developments of several international programs, all relying on a different set of rules, and need to communicate with the different programs.

Besides institutions, offset developers can also have experience with the development of offset projects under the chosen international program. This is especially true for programs that have been running for several years and/or that target several countries (e.g., CDM, Joint Implementation [JI], VCS, GS). This experience can be leveraged to ensure there is enough capacity to supply credits for domestic use. The type and level of capacities will be linked to the type and number of projects developed under the recognized international program.

*How to address the risks of relying on an external program:* Even if the initial assessment of compatibility between the international and the domestic program is positive, the situation might evolve in the future. The host country government should assess these risks at the planning stage, e.g., how should they deal with changes to the core rules of the international program? Could they prepare for changes through periodic reviews of the international program that is being used? What if the international program stops its activities?

### **Regulations**

As most of the rules for generating credits are set by the international program(s), only a limited set of domestic regulations needs to be developed. A general regulation setting the rules of the domestic offset program would be required. Domestic offset programs relying on international programs that include a domestic approval process (e.g., CDM, JI or Joint Crediting Mechanism [JCM]) can build on the existing infrastructure (for the CDM: DNA, host country approval processes, etc.). Such an infrastructure might not exist for other programs not requiring a domestic body (e.g., VCS, GS, CAR).

A legal procedure to enable liable entities to offset their domestic emissions with the recognized international credits would also need to be put in place. One possible procedure could be that entities retire credits on the international registry system and show proof of the retirement to the authorities (this will depend on the decisions made regarding the registry—see section 4.4.3 below).

### **Costs and Revenues**

The main administration costs and revenues are incurred by the *international* offset program(s). These are presented in Module 3. Costs and revenues in appendix A. Costs include staff salary, overheads, materials and supply, travel, communication and third-party fees. Revenues are mostly derived from project fees and issuance fees; they are therefore directly linked to the number of projects approved and to the volume of



credits issued. Reduced demand for credits from a particular program leads to reduction in registration and issuance activity, as can be witnessed under the CDM. This leads to a reduction in revenues that is not immediately followed by a reduction in costs, as the infrastructure—especially the number of staff—is less elastic (see Module 3. Costs and revenues). Under full reliance, the main costs and revenues are borne by the international program. As such, the domestic program is protected from drops in revenues arising from changes in levels of activities under the domestic program.

*Domestic* costs will be limited to ensure smooth application of the international program in the domestic context and to run the domestic registry if this option has been selected. To evaluate the magnitude of the costs the host country would need to assess questions such as the following (the list is not extensive):

- What experience is there in the country with the international program and what skills and capacities need to be built?
- How much will it cost to modify the existing institutions to accommodate the domestic offset program or create new ones?
- Is there any financial implication of collaborating with the international program (e.g., cost/revenue sharing)?
- What is the incremental cost of accepting more than one program?
- How much communication should be done around the launch of the domestic program?
- Which sources of revenue will the government have access to?

If the government does decide to recover costs of administering the domestic program (even if these costs are small), they will need to find another way to do this other than at registration and issuance—e.g., they might consider imposing a small fee when units are transferred or used domestically, or if they decide to operate domestic registry, then they could charge a fee for opening or holding an account. Project developers incur transaction costs relevant to the offset program (see same module).

#### ***4.4.2. Use of Add-On Labels: Reliance on Offset Programs Only or Introduction of Additional Compulsory Add-On Labels***

This has implications only if the domestic offset program decides to require the use of add-on labels. The implications of requiring the use of add-on labels are similar to opening up the domestic program to additional offset programs. Add-on labels put emphasis on non-mitigation related aspects (mostly co-benefits), and the domestic offset program bodies will need to have the required capacities to cover these aspects.

#### ***4.4.3. Type of Registry: Use of International Registry or Development of a Domestic Registry***

##### **Institutions, Regulations and Operational and Technical Capacity**

*Reliance on international program registry (or registries):* This option would require minimal domestic investment in terms of supporting institutions, regulations, and domestic capacity. Regulations are needed to establish how credits retired in an international registry would be acknowledged and recognized for

the purposes of meeting domestic policy requirements. A domestic body overseeing the program with administrative and executive functions is needed, but its role is limited, mostly surrounding reviewing how well the arrangement with the external international program(s) are working, communicating with participants and tracking the use of credits. Different approaches for recognizing credit retirements (see section 3.2.2 (5)) would have little impact on domestic capacity requirements. Requiring transfer to a government holding account may offer a slight administrative advantage since it would not require a separate review and confirmation of retirement/cancellation reports. Instead, retirements would be directly confirmed when a transfer was accepted into the government's registry account.

*Development of a domestic registry:* This option would require a similar commitment in terms of regulations and domestic oversight, but with additional institutional and capacity requirements related to running a domestic registry system. A domestic registry could be outsourced in various ways, as described in the "outsourcing" scenario (section 3.4.2 (8)). However, most of these options would still require administrative staff and technical capacity related to registry operation, including manual or automated functionality for linking the registry to international program registries.

#### **Costs and Income**

*Reliance on international program registry (or registries):* Costs associated with this option would be minimal, but would include costs for administrative functions as described above. With regard to credit retirement approaches, there would likely be little difference in cost between direct retirement and retirement through a government account, although retirement through a government account might require some nominal fees to maintain a separate account, paid to the international program by the government. For the CDM however, governments will likely already have an established CDM Registry holding account. For domestic program participants, costs would include any fees associated with maintaining accounts in the international program registries and any internal administrative or transaction costs associated with managing such accounts and participating in the international program(s).

*Development of a domestic registry:* Impacts under this option would include any incremental costs associated with establishing and operating a domestic registry. These could include additional costs to domestic program participants associated with establishing and managing accounts within the domestic registry in addition to accounts within the international program registries from which credits would be sourced. These costs could be recovered by charge a fee for opening or holding an account.

#### **4.4.4. Advantages and Disadvantages**

##### **Advantages**

The main advantages of this scenario is that it can be implemented relatively quickly and at comparatively low domestic costs. Because a domestic program would fully rely on an already established program for its administration, infrastructure and project pipeline, the incremental actions by, and costs for, the host country are limited. Full reliance can therefore be an option to kick-start a domestic offset program and give some time to the host country government to plan for the next steps (e.g., transition to a full domestic program following the indirect reliance scenario). This advantage is particularly relevant for countries with strong experience engaging in international programs and can build on existing skills and infrastructure

or use them to develop domestic capacity (e.g., domestic third party auditors). For countries with limited experience with existing international standards, significant capacity will need to be built before a domestic program can be rolled out.

The use of add-on labels and the targeted selection of international programs can help ensure that projects bring additional benefits like sustainable development. It introduces a means for limited customization by the host country, while still relying on existing infrastructure and requiring limited domestic actions.

Domestic capacity requirements and costs related to running a domestic registry system are minimized under this scenario, unless the government chooses to establish its own domestic registry. This is only likely to be developed however if it is needed for other policy purposes (e.g., a domestic ETS), and not solely for the sake of receiving offsets from external programs. In that case, the registry would already be a sunk cost and the incremental costs of this scenario would still be minimal.

### **Disadvantages**

While the host country government might be able to engage with the international offset programs, the main disadvantage is that it has no direct control or influence on the elements of the domestic program, such as its governance, scope, MRV procedures, validation and verification entities, or rights to emission reductions and credits. This means that the country is unable, for example, to target specific sectors for emission reductions, to drive the improvement of the program, or to introduce specific requirements in line with domestic policies (energy efficiency improvements, alleviating poverty, reducing air pollution etc.). It also presents risks for the host country, which are discussed below.

- The domestic program is dependent on what happens with the international offset program, including not only changes in the scope and regulations, but also more significant changes in the way environmental integrity is ensured, and the fate of the program (e.g., bankruptcy, closure). This can be mitigated to some extent by focusing on international programs with a long history, bringing together a large pool of stakeholders, and with an important pipeline of project, and by building relationship with the international program.
- International programs have multiple markets to sell to. Projects developed with the intention to serve the domestic market might be diverted to other markets offering better conditions. A domestic registry could help facilitate a secondary domestic market but would not address market fragmentation.
- If more than one international program is allowed, project developers will be able to pick which program they wish to use, depending, inter alia, on the scope of the programs, the transaction costs and the prices of the credits. This can help promote cost-efficient mitigation, but could also skew the market towards a specific international program. While it is expected that all the international programs accepted under the domestic program will meet the domestic programs required standard in terms of environmental integrity, it is important that the domestic program body is comfortable with all programs.
- The market dynamics of the international offset program might impact the domestic program. Low activity in the international offset program for example result in a decreased number of staff and so affect the progress of domestic projects through the pipeline.

- Environmental integrity and over-issuance risks are addressed at the level of the international offset program. The domestic program needs to be comfortable with the approach taken at the international level to mitigate the associated risks.
- There is the potential for legal or enforcement difficulties with having the offset program fully operate outside the host country jurisdiction. The host country will need to ensure that it has enforcement capabilities either through its own statutes or through agreements with the international programs or the project developers themselves.
- If more than one international program is allowed, it may be more difficult to transparently disclose information on the offsets coming from the various programs and the rules under which they were developed.

Further, under this scenario, registry functionality and accessibility will be determined by the international program(s). The domestic program may be quite limited in its ability to customize the registry(ies) to the needs of its stakeholders or staff.

Also, the domestic capacity building, which could be useful if developing future carbon pricing instruments, is limited, which can hamper the introduction of future fully domestic policies.

Finally, recognizing several international programs means that the domestic offset program body will need to stay abreast with all the international programs allowed and ensure alignment with these programs. This increases flexibility of the domestic program, but also complexity and hence costs. The increased flexibility offered needs to outweigh the increased complexity introduced. Similarly, allowing add-on labels is likely to result in higher costs, as additional labels need to be managed. Add-on labels also result in higher transaction costs for project developers, which then have to comply with the requirements of both an international program and the add-on label.

#### ● **4.4.5. Impact assessment of gate keeping scenario**

As highlighted in chapter 3, policy makers planning or designing a domestic offset program under gate keeping will need to consider the following design questions with regards to leveraging international experience:

1. Choice of the international offset program(s) accepted under the domestic offset program.
2. Use of add-on labels: reliance on offset programs only, or introduction of additional compulsory add-on labels.
3. Type of registry: reliance on international registry, or allow transfers to domestic registry. Inclusion of explicit eligibility checks into steps where credits are submitted for domestic compliance.
4. Level of outsourcing of the domestic registry (discussion in section 4.6.3).
5. Type of domestic restrictions (e.g., geography, sectors, project types, location of validation and verification bodies (VVBs), sustainable development benefits) and resulting modalities for checking compliance with the additional restrictions, i.e.:
  - a. Automatic (e.g., through the domestic registry based on project information and serial number of credits)

- b. Manual (through domestic review and approval process), by the government (e.g., the administrator of the program), or by external entities (e.g., entity accredited under the accepted international offset program(s), or entities accredited according to domestic accreditation rules). If a manual check is introduced, the government might need to introduce of additional domestic methodologies and tools (e.g., to demonstrate the compliance with additional requirements on sustainable development benefits).
6. Type of appeal procedure for the domestic decision: no procedure or additional domestic procedure.

#### ***4.4.6. Choice of the International Offset Program(s) Accepted under the Domestic Offset Program***

Impacts will be similar to the full reliance scenario. Please refer to the discussions in Section 4.4.1.

#### ***4.4.7. Use of Add-On Labels: Reliance on Offset Programs only, or Introduction of Additional Compulsory Add-On Labels***

Impacts will be similar to the full reliance scenario. Please refer to the discussions in Section 4.4.2.

#### ***4.4.8. Type of Registry: Reliance on an International Registry, or Transfers to a Domestic Registry. Inclusion of Explicit Eligibility Checks into Steps where Credits Are Submitted for Domestic Compliance***

*Reliance on international program registry (or registries):* Impacts will be similar to the full reliance scenario. Domestic administrative and capacity requirements may be incrementally greater under this scenario to the extent that government staff must screen credits for eligibility under domestic program rules (see below).

*Development of a domestic registry:* Impacts will be similar to the full reliance scenario, with incremental capacity requirements for screening the eligibility of credits transferred to the domestic registry (see below).

#### ***4.4.9. Nature of the Restrictions and Modalities for Checking the Compliance with These Additional Restrictions***

The key difference between the full reliance scenario and the gate keeping scenario is the introduction of domestic restrictions on the projects and credits generated by the international offset program. The implications will depend largely on the modalities for checking compliance with these restrictions, which in turn are dictated by their nature:

- Basic restrictions related to project information recorded in project database and serial number of the issued credits (e.g., country, project type, extra add-on label).
- Qualitative restrictions requiring a domestic review and approval process (e.g., specific development benefits, ownership of emission reductions and credits, location of validation and verification bodies).

### **Institutions and Technical and Operational Capacity**

The domestic body needs to be able to put in place a system for the checking credits against established restrictions and ensure this operates effectively.

For simple checks against basic project attributes, checking eligibility may be done automatically through relevant registry systems—e.g., registry software systems could automatically restrict the transfer of credits to a government account or to a domestic registry system (see section 3.2.2. (5)). Technical capacity requirements (e.g., for administrative staff) would be minimal for such checks. Where credit retirements or transfers require manual reviews, a manual process will be required to review eligibility.

For qualitative restrictions, a body able to carry out the qualitative domestic review of projects and credits needs to be set-up. Capacity requirements for this body will depend on the nature of qualitative reviews that must be performed. The staff from the domestic body might need to be able to carry out reviews themselves (simple checklist-based or more thorough qualitative review), or check the reviews carried out by external entities, and make a decision regarding the eligibility of projects and the credits they will subsequently generate. If the review is carried out by external entity, the capacity of these entities—whether they are based in the host country or not—will need to be built. The speed at which this is taken up will be in part influenced by the market prospects this service offers.

The host country government will need to decide whether the responsibility of showing that the project complies with the additional criteria lies with the project developers or the credit holders. Project developers/credit holders will need to learn about the domestic review and approval process and be able to prepare the required documentation.

### **Regulations**

Regulations governing the review of credit eligibility need to be defined, including the modalities for conducting qualitative reviews (if required). Reviews may be conducted by domestic government staff or outsourced to a third party: entities accredited under the international offset programs accepted, or entities accredited according to domestic accreditation rules. The host country government can decide to issue a certificate to a project once it has ensured that the project meets the additional criteria. The certificate can then serve as the basis for adding a label to the credits issued by the project.

A set of regulations will need to be developed, including:

- Regulations regarding the procedures, tools and methodologies necessary for project developers or credit holders to submit their projects and get a certificate
- Regulations for the domestic body to carry out the review and make decisions on the outcome of the review (approval/rejection of the projects/credits, confirmation of the ownership of the emission reductions and credits), and/or
- Regulations governing the third party entities' work (accreditation, standard for the review, etc.)



### **Costs and Revenues**

The incremental costs compared to a full reliance scenario are due to the introduction of domestic restrictions on the credits. The magnitude of the costs will depend on the type of restrictions and the associated modalities for checking them. Automatic checks will result in the lowest cost.

Although the review process might be limited in scope, there will need to be enough staff and skills to deal with the expected pipeline of projects to review. If existing projects registered under international offset programs are eligible under the domestic program, the pipeline might be significant at the start of the program, when projects wishing to be allowed under the domestic program might apply. This pipeline might slow down later, and this needs to be considered in the staffing planning.

Revenues could be raised by the domestic body by asking for a fee for the review and approval of projects and, if applicable, for the accreditation of third party entities. In this case, project developers/credit holders would be subject to transaction costs both in the international and the domestic programs. If the fee is on the project developers, this could dampen the attractiveness of the domestic program for project developers who might turn to the other buyers of the credits under the international program instead.

#### ***4.4.10. Type of Appeal Procedure for the Domestic Decision: No Procedure, or Additional Domestic Procedure***

This has implications only if the domestic offset program decides to introduce a domestic appeal procedure in addition to the one in effect under the international program.

### **Institutions, Regulations and Technical and Operational Capacity**

Introducing a domestic appeal procedure for a project developer/credit holder to appeal against the decision not to accept a project in the domestic program would enable project developers/credit holders to voice their disagreement. However, it would require the domestic body to be able to deal with legal matters, or have a separate body which would do so. The regulations to run this body and deal with appeal would need to be developed. This would require an appropriate set of skills, different to those needed to technically review projects or they could rely on domestic bodies that are used for other administrative, statutory or legal appeals in the country.

### **Costs and Revenues**

The domestic offset program would bear the cost of setting-up and administering the appeal process. A fee could be asked from project developers/credit holders upon submission of an appeal to cover (part of) these costs. If this fee is imposed on the project developers, their willingness of project developers to go through this process would depend partly on the cost of the procedure, and on the expected returns from the future carbon credits. Again, this could impact the choice of the market where the credits are sold.

#### ***4.4.11. Advantages and Disadvantages***

##### **Advantages**

The main advantage of this scenario is that it combines reliance on established international programs with capacity for domestic customization with regards to the projects that are accepted in the domestic program, thereby addressing one of the main disadvantages of the full reliance scenario. As for full reliance,



gate keeping can therefore be an option to kick-start a domestic offset program and give some time to the host country government to plan for the next steps (e.g., transition to a full domestic program following the indirect reliance scenario). This is particularly relevant for countries with strong experience engaging in international programs and can build on existing skills and infrastructure, and where restrictions can be checked automatically. The costs for the host country are limited to establishing the system to check for compliance with domestic restrictions.

### **Disadvantages**

While the introduction of domestic requirements and approval process helps ensure that project meet certain criteria, some aspects of the accepted international program(s) remain outside of direct domestic control, such as how environmental integrity is ensured (e.g., demonstration of additionality; treatment of the double-counting, non-permanence and over issuance-risks). Some of the other disadvantages discussed for the full reliance scenario also remain: legal enforcement risks, dependence on what happens to the international program(s) and influence of the market for the credits generated by the international program for example. Besides this, introducing domestic restrictions can require the development of a significant infrastructure (institutions, regulations, staff etc.) which result in costs for the domestic body. This can be mitigated by focusing on restrictions that can be checked automatically, but doing so reduces the options for customization to the domestic context. Alternatively, costs could be recovered by charging a fee for recognizing the projects under the domestic offset program. However, since the projects allowed under the domestic offset program also have access to other markets—the other buyers of credits generated under the international offset program for example—the level of the fee and the entity that would be charged this fee (project developers vs. credit holders) would need to be carefully determined so as not to deter project developers from applying for recognition under the domestic program.

## **4.5. Impact Assessment of the Outsourcing Scenario**

As highlighted in chapter 3, policy makers planning or designing a domestic offset program under outsourcing will need to consider the following design questions with regards to leveraging international experience:

1. Choice of the modules to outsource and the level of outsourcing (full or partial):
  - Methodologies and tools
  - Accreditation
  - Registry
  - A combination of the above
2. Establishment of a domestic registry, with varying levels of outsourcing to registry providers
3. Use of add-on labels: reliance on offset programs only, or introduction of additional compulsory add-on labels

The main difference between the full reliance/gate keeping scenarios and the outsourcing scenario is that the domestic offset program is designed and administered by a domestic body. This body reviews and approves the projects and issues credits. Some of the modules are implemented and administered domestically, others are outsourced to the international offset programs.

#### **4.5.1. Choice of the Modules to Outsource**

The implications of the outsourcing scenario are influenced by the type of modules that are outsourced and the level of outsourcing. The most commonly outsourced are the following ones:

- Methodologies and tools (use of methodologies and tools from international program)
- Validation, verification and accreditation (use of validation and verification entities accredited in an international program)
- Domestic registry (outsourced to service providers), covered below in 4.6.3.

The factors influencing the choice of the modules are discussed in 3.3.2, module (6).

#### **Institutions and Technical and Operational Capacity**

The administrative and executive bodies will have much greater roles and responsibilities under the gate keeping scenario as compared to the two previous scenarios. They will need to design the program and conduct full reviews and approvals of projects and issue credits (validation and verification activities can be outsourced to third party validation and verification entities, but the process will need to be overseen by the domestic body). Impacts will depend on the level of outsourcing.

If methodologies and tools are fully outsourced (i.e., if methodologies and tools developed and approved under an international program have to be used for projects developed under the domestic program), the domestic offset program bodies would not need to cover these tasks. This would decrease the resources and skills needed compared to a scenario where the methodologies and tools are not outsourced, but it limits the extent to which they can be adapted to the national context and priorities. The VCS accepts both CDM and VCS methodologies. If CDM methodologies are used, then VCS rules supersede CDM rules in case of conflict (e.g., on length of crediting period). The domestic body therefore needs to understand the nuts and bolts of the outsourced methodologies and the potential discrepancies with the domestic rules. It might be possible to revise the methodologies and tools to include some specific application criteria particular to the situation in the country, but this would need to be submitted to the international offset program by the project developers or by the domestic program body, and reviewed and approved by the international program beforehand.

If methodologies are partially outsourced, i.e., both methodologies developed under the international and the domestic programs are allowed, the domestic body need to be able to review and approve methodologies. It can be supported by an external advisory body. This is what happens under the VCS, which accepts not only CDM methodologies but also VCS methodologies. The development of methodologies specific to the domestic program can be facilitated by starting from methodologies approved in an international program and adapting them to the domestic context. Cooperation with the international program could help in this process. This could also have legal implications in terms of use of intellectual property from the international program.

If the accreditation system is outsourced, the domestic offset program body does not need to develop the capacity to accredit validation and verification entities. The domestic body however needs to be able to review the various accreditation systems available and decide which one is most appropriate for their

domestic program (e.g., CDM Designated Operational Entities [DOEs] accredited under the United Nations Framework Convention on Climate Change [UNFCCC]). DOEs accredited under the CDM are widely used in other programs (GS, VCS, JCM...), showing that the quality of the DOE accreditation system under the CDM is widely recognized.

### **Regulations**

Regulations for the whole domestic program, including modalities around the use of outsourced methodologies and tools and/or definition of validation and verification entities eligible under the program, need to be developed. There is no need for regulations on the development and approval of methodologies and tools to be developed in case of full outsourcing, as these are covered by the international program. Similarly there is no need for accreditation guidelines and procedures. The relevant regulations need to be developed in case of partial outsourcing (e.g., procedures for development and approval of methodologies).

### **Costs and Revenues**

All administration costs and revenues are borne by the host government. The costs are likely to be slightly lower than the administration costs for a full offset program as some of the modules are outsourced and their costs borne by the program they emanate from. Revenue will be raised through fees collected by the domestic program, e.g., registration and issuance fees.

#### ***4.5.2. Domestic Restrictions on the Outsourced Modules***

The domestic program body can decide to add another level of customization by putting restrictions on the outsourced modules (e.g., accepting only some methodologies, requiring validation and verification entities to be located in the host country, etc.).

### **Institutions and Technical and Operational Capacity**

The domestic program will need to be able to check for compliance with the restrictions. As opposed to the restrictions put on the projects and credits under the gate keeping scenario, these restrictions will be put on the program modules. As such the compliance of the modules with these restrictions can be checked at the program level, with the administrative body of the program reviewing the methodologies against a set of criteria and the executive body approving them. The methodologies will then be available to use for all projects. Similarly, for accreditation, the domestic bodies can review the compliance of validation and verification entities with the criteria once, and then VVBs can use these accepted validation and verification entities.

### **Regulations**

The type of restrictions and the modalities to check for compliance with the restrictions will need to be defined.

### **Costs and Revenues**

These additional activities will result in additional costs for the domestic program. However, these costs are likely to be most significant when checking the restrictions, with most of the cost to review and approve

a methodology for use in the domestic program incurred the first time the methodology is assessed. Subsequent versions of the methodologies as revised by the international program(s) can be *de facto* accepted in the domestic program, or reassessed but probably more quickly than the first round).

#### **4.5.3. Establishment of Domestic Registry, with Varying Levels of Outsourcing to Registry Providers**

The domestic government could choose to contract out registry services, with varying degrees of involvement in the registry's design, functionality, and operation.

##### **Institutions and Technical and Operational Capacity**

Impacts depend on the level of outsourcing. Fully outsourcing registry functions will have minimal institutional and capacity requirements, and may alleviate requirements related to processing project submissions, registering projects and issuing credits. Intermediate or limited outsourcing will increase government capacity requirements accordingly. A full suite of operational capacities, from administrative functions to operation and maintenance of IT systems, would be required if registry functions are not outsourced in any way.

##### **Costs and Revenues**

If registry functions are fully outsourced, cost impacts would be minimal. Registry costs would largely be borne by the registry service provider and recouped through fees charged to registry users. More limited forms of outsourcing (or no outsourcing) would entail higher administrative, training, and operational costs accordingly. Costs could to some extent be covered by charging fees to registry users (including account maintenance, document processing and credit issuance and transfer fees).

#### **4.5.4. Use of Add-On Labels: Reliance on Offset Programs Only, or Introduction of Additional Compulsory Add-On Labels**

A domestic program might require projects to obtain a specific label (e.g., SC or Climate Community and Biodiversity Standards [CCBS]). This could ensure that the projects exhibit certain characteristics, e.g., with regards to sustainable development. The costs of this additional certification would be borne by project developers. Domestic programs will have to consider which option of requiring the use of an add-on label, or embedding these specific characteristics in their own review and approval process, strikes the balance best between cost-efficiency and flexibility.

#### **4.5.5. Advantages and Disadvantages**

##### **Advantages**

Under this scenario the host country can design a domestic offset program that reflects the national circumstances while leveraging the international experience available. It can also help reduce domestic administrative costs compared to a program under indirect reliance.

While this scenario is not widely observed among domestic programs, it is common for international programs (e.g., GS recognizing CDM DOEs and allowing for the use of CDM methodologies). This might be due to the fact that the international programs have a broader scope and are not limited to a specific

country or specific technologies and their modules are hence more readily transferable between programs.

With respect to registry functions, a range of outsourcing options is available depending on the needs and objectives of the domestic program. Total outsourcing has the advantage of minimizing cost and capacity requirements. More limited outsourcing, on the other hand, will allow a domestic program to maintain more control over registry functions and operation.

### **Disadvantages**

The domestic program bodies need to define and run the whole program, except for the outsourced modules. This requires significant time and resources. Also, while designing and running a domestic program provides flexibility, additional efforts might be required to ensure and show credibility of the domestic program to other countries.

Projects developed under the domestic program are developed solely for the purpose of the domestic program. Project developers need to trust that the program will run long enough to see returns. This is also relevant for international programs but might be perceived as less substantial, as more stakeholders, with various interests and expectations, are behind the international programs, which can help make them more stable. Also, the demand for domestic offsets will be driven primarily by domestic demand, which is likely to be created by a domestic carbon pricing instrument (e.g., ETS, carbon tax). If the market is small, liquidity might be a problem. Aligning the domestic program with international program, or linking it with international programs or domestic policies in other countries (e.g., carbon tax, ETS) might help mitigate this risk.

## ● **4.6. Impact Assessment of the Indirect Reliance Scenario**

As highlighted in chapter 3, policy makers planning or designing a domestic offset program under indirect reliance will need to consider the following design questions with regards to leveraging international experience:

1. Domestic rules heavily drawn from international experience
2. Domestic rules different to international experience

Under the indirect reliance scenario the domestic offset program is fully designed and run by a domestic body. This Technical Note focuses on how best to leverage international experience when designing a domestic program. The impacts discussed below are therefore not the full impacts of designing and running a domestic offset program but rather emphasize the consideration of the international perspective in this process.

### ***4.6.1. All Designs under Indirect Reliance (Domestic Rules Heavily Drawn from International Experience as well as Domestic Rules Different to International Experience)***

#### **Institutions, Regulations and Technical and Operational Capacity**

The whole range of bodies discussed in Module 1. Governance and institutions (administration module) in appendix A are likely to be required. The exact set-up is up to the host country to define. Similarly, most of the regulations relevant to the full project cycle discussed in 2. Project cycle and regulations

(administration module) in the Inventory will need to be developed. This requires significant financial and human capacity.

Domestic programs where the rules draw heavily from international experience might be quicker to set-up as the program is not defined from scratch.

### **Costs and Revenues**

The costs and revenues will depend on the design and implementation of the program. Most of the cost and revenue streams identified in Module 3. Costs and revenues (administration module) in appendix A are likely to be relevant. Costs are likely to be lower if the design of the domestic program closely builds on existing programs.

### ***4.6.2. Advantages and Disadvantages***

#### **Advantages**

Under the indirect reliance scenario, the host country has full flexibility to design a program that meets its domestic requirements. It also has full control over the administration of the program and over its evolution. The international experience can be leveraged to the extent it is deemed appropriate.

#### **Disadvantages**

Setting up and running the program requires significant time and resources. Mirroring some of the features of existing programs might help fast-track the development of the program. Also, while designing and running a domestic program provides flexibility, additional efforts might be required to ensure and show credibility of the domestic program to other countries. Cooperation with existing programs can help ensure harmonization and facilitate exchanges of credits between programs.

As in the outsourcing scenario, projects developed under the domestic program are developed solely for the purpose of the domestic program. Project developers need to trust that the program will run long enough to realize returns. This is also relevant for international programs, but it might be perceived as less risky as more stakeholders, with various interests and expectations, are behind the international programs, which can help make them more stable. Also, the demand for domestic offsets will be driven by domestic demand only, which is likely to be created by a domestic carbon pricing instrument (e.g., ETS, carbon tax). If the market is small, liquidity might be a problem. Aligning the domestic program with international program, or linking it with international programs or domestic policies in other countries (e.g., carbon tax, ETS) might help mitigate this risk.

## 5. Leveraging the International Experience: Key Considerations When Developing a Domestic Offset Program

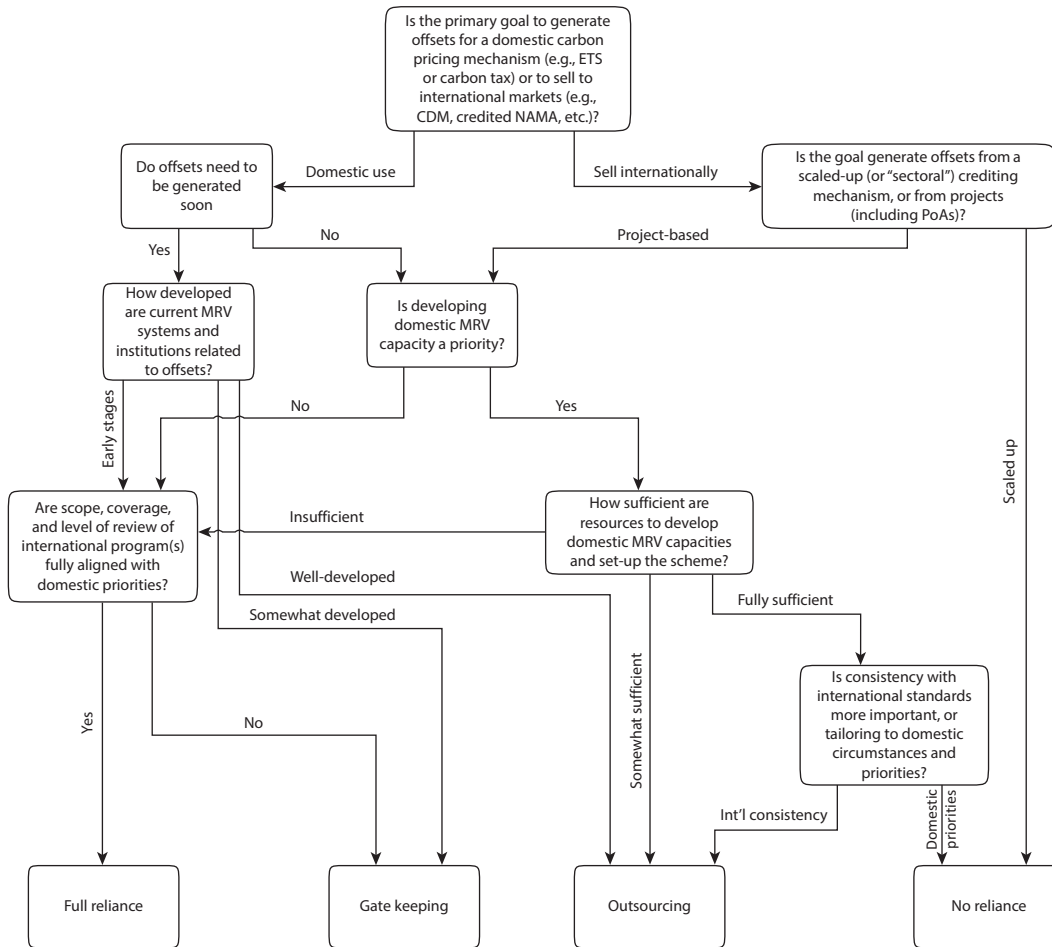
This chapter draws on the analysis presented in the previous chapter and presents some questions aimed at supporting policy makers in their assessment of how best to leverage international programs in the planning and design of domestic offset programs. Key questions include:

- What are the short-term objectives of the domestic offset program (cost containment vs. preparation for international carbon market)? What are its long-term objectives?
- What is the current situation in terms of institutions? Regulations? Technical and operational capacity?
- How aligned are the existing international offset programs with your domestic priorities?
- What level of control do you want to have over the approval of projects and the issuance of credits?
- How aligned you want your domestic program to be with international practices?
- How soon do you want offsets to be generated?
- How important is it for you to develop domestic capacities around offsetting (incl. institutional structure, technical skills in general and MRV skills in particular, registry)?
- How much financial resources do you have available for the planning, design and implementation phases of the offset program?
- How is the domestic offset program fitting in the broader domestic policy context (including non-mitigation related policies)?

Figure 12 gives an example of how answers to these questions may lead to different scenario choices. The diagram is not meant to be prescriptive or represent a recommended path. Rather, it illustrates how different considerations could argue for different options or models. Individual countries may face important considerations or objectives not presented here, which could lead them to different choices within the scenarios presented in this document.



**Figure 12. Example of a Possible Decision Tree for the Choice of a Scenario to Leverage International Experience When Designing a Domestic Offset Program**



## Appendix A—Inventory of International Offset Programs and Labels

### A.1. Governance and Institutions<sup>11</sup> (Administration Module)

Link to the discussion of the Governance and institutions module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

While the form, composition, and duties of the programs' governing bodies vary from program to program, there are several discrete common functions:

- *Program authority/executive decisions*: Duties of an executive body may include making overall strategic and policy decisions for the program; formally approving program and methodology guidelines; approving new methodologies; accrediting verification bodies; and, under some programs, approving project registration and credit issuances.
- *Program administration*: Administrators are the staff responsible for day-to-day administration of an offset program. Duties or functions may include:
  - a) Drafting and updating program rules and procedures
  - b) Reviewing, developing, updating, and (in some cases) approving new methodologies
  - c) Training, accrediting, and sanctioning verification bodies
  - d) Reviewing project submissions and verification reports
  - e) Approving, overseeing, and auditing verifications
  - f) Listing and registering projects
  - g) Issuing credits
  - h) Maintaining the offset registry system.
- *Advisory functions*: Advisory panels may provide technical assistance related to methodology development, approval, and updating; and/or the development of methodology guidelines and tools. Advisory panels may be formally established as part of a program's governance structure, or convened on an ad hoc basis.
- *External assessment (validation, verification)*: Generally conducted by independent, third-party organizations accredited by the program authority or administrators to carry out validation

<sup>11</sup> Main source: USAID. 2014. *Kazakhstan Offset Program Policy and Design Recommendations*, written by Climate Action Reserve and TetraTech ES, Inc. Wording to be discussed.

and verification functions. Under some programs, they may also play a role in reviewing new methodologies.

- *Country counter-part institutions:* Host country institutions might be involved in the review and approval of projects.

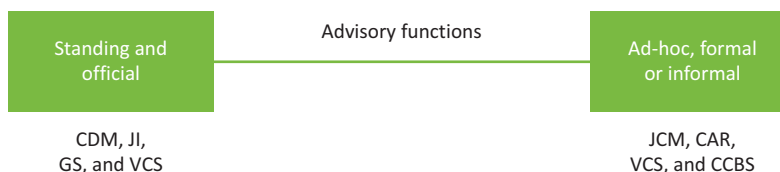
Different programs assign specific duties or functions to these bodies in different ways (see table 7). Under most programs the administrative tasks and the executive decisions are allocated to different bodies of the program. Under Climate Action Reserve (CAR) for example, most executive functions are retained by the Board of Directors, while CAR staff perform administrative functions. Under the Clean Development Mechanism (CDM), the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat (Sustainable Development Mechanisms; Registration and Performance Monitoring/ Issuance and Performance Monitoring Team) review the validation reports and the requests for registration and make recommendation on the outcome (registration, request for review, rejection) and the CDM Executive Board (EB) makes the ultimate decision. Under some programs, the administrator of the program can make some of the executive decisions. For example under the Gold Standard (GS), the GS Secretariat carries out the administrative functions but it also reviews and approves the registration of projects. The Gold Standard Foundation Board has a more strategic role and provides financial oversight and is responsible for the strategic governance of the Gold Standard Foundation.

In addition, some programs contract out, or delegate, certain administrative functions to third parties, e.g., where capacity is limited. Project verification duties, for example, are almost always delegated to

**Table 7. Executive Body and Program Administrator in International Offset Programs**

<i>Program</i>	<i>Executive body</i>	<i>Program administrator</i>
CDM	The Conference of the Parties (CMP) serving as the meeting of the Parties to the Kyoto Protocol: includes all countries who have ratified the Kyoto Protocol. CDM Executive Board (CDM EB, 10 members plus 10 alternates)	UNFCCC Sustainable Development Mechanisms (SDM); Registration and Performance Monitoring/ Issuance and Performance Monitoring Team (177)
JI Track 2	CMP, Joint Implementation Supervisory Committee	UNFCCC Sustainable Development Mechanisms (SDM)
JCM	Each host country has a separate Joint Committee (JC), which consists of representatives from both governments.	Secretariat
CAR	Board of Directors (13)	Climate Action Reserve Staff (23)
Gold Standard	The Gold Standard Foundation Board, GS Secretariat (30)	GS secretariat
VCS	VCS Board	VCS management and staff (21)
CCBS	CCB Steering Committee, VCS Board	VCS management and staff
Socialcarbon	Ecologica Institute	Ecologica Institute

**Figure 13. Advisory Panels Can Be Set Up Officially or on an Ad-Hoc Basis**



outside verification bodies. However, some programs also contract out or delegate basic administrative functions such as project registration and issuance of credits.

Programs also differ in the extent to which they rely on formal advisory panels. The form and composition of advisory panels largely depend on the coverage and scope of the program and how methodologies are developed and approved (see Methodologies (Types, Process for Development and Approval) and figure 13. At the broadest level, the two main approaches are to:

- Constitute **official standing** advisory panels for specific program functions.
- Convene advisory panels formally or informally on an **ad-hoc** as-needed basis.

## A.2. Project Cycle and Regulations (Administration Module)<sup>12</sup>

Link to the discussion of the Project cycle and regulations module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

### Project Cycle

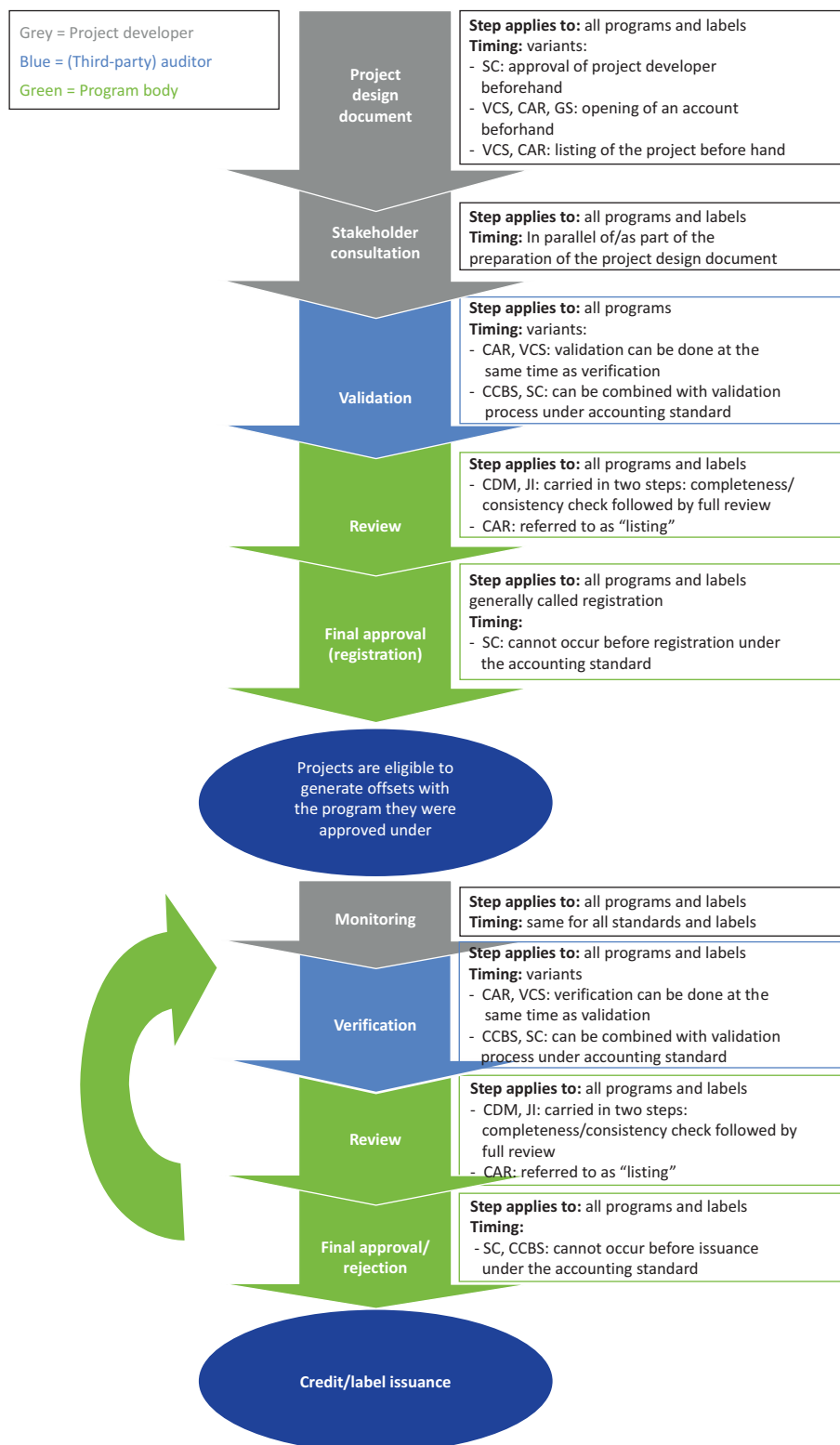
Most programs follow a similar process to register projects and issue credits (see figure 14 on the next page for a graphical representation). Please note that listed differences are not comprehensive but rather aim to illustrate the breadth of approaches followed.

The initial project review process includes the **assessment and approval (or rejection)** of an offset project by a program. Usually this review process 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.

*Validation* is the detailed assessment of a proposed offset project to evaluate whether the project meets the offset program requirements. Validation may include an evaluation of baseline determination, additionality testing and monitoring plans. Validation is most commonly done by a third-party auditor (the “validation body”).

<sup>12</sup> PMR Technical Note 6 (2014) and own research.

**Figure 14. Typical Steps in the Project Cycle of International Offset Programs**



Note: SC = Social Carbon; VCS = Verified Carbon Standard; CAR = Climate Action Reserve; GS = Gold Standard; CCBS = Climate Community and Biodiversity Standards; CDM = Clean Development Mechanism; JI = Joint Implementation.

*Review*<sup>13</sup> refers to an in-depth assessment of all project documents, including the validation report. It is commonly done by the program administrator. All programs include a review step. The extent of the review varies by program. Top-down programs with a more limited scope, such as CAR, have a more limited review process than broad scope programs such as the CDM, GS, Verified Carbon Standard (VCS) and JI. In some programs, this review is done after a **completeness/consistency check**, which ensures that the project application, including the validation report (where relevant), are complete and consistent with program rules and that all legal requirements are fulfilled. This step is usually done by program administrators.

*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; yet, in practice, it is often the program administrator or the auditor that determines if a project can be approved. After final approval, projects are registered<sup>14</sup> with the program's registry or database. This means that the project has been deemed eligible to generate offset credits of the program under which it was approved.

*Monitoring and verification:* Once a project has been registered and implemented, it can submit claims for emission reductions or removals and request the issuance of credits. Verification is the assessment of the implementation of the project and of the monitoring and quantification of greenhouse gas (GHG) reductions and of their conformance with the relevant rules. The emissions reductions have to be achieved in accordance with requirements of the applicable methodology for monitoring, quantification, and reporting. Verification is typically conducted by the third-party auditor (the "verification body") at regular intervals after project implementation. Once the verification report has been accepted by the program executive body, credits are issued and placed in the project proponent's account on the program's registry.

The differences that can be observed between the programs are usually around:

- *Steps included:* some steps are common to all programs while other are optional or do not occur in some of the programs, e.g., completeness check (CDM/JI) or listing (CAR). More in-depth reviews can be observed for programs where additionality and baseline are set at the project level, e.g., CDM, JI, VCS and GS. Programs that rely on standardized approaches usually require a less extensive initial evaluation, e.g., CAR and CDM when standardized baselines are used. Stakeholder consultation is generally part of the preparation of the Project Document
- *Timing:* the sequence of steps differ, e.g., under CAR and VCS the third party validation can be done at the same time as the first verification for all their projects. The GS also combines the third party validation with the first verification for land use and forest (LUF). For other projects, the GS like the CDM requires third party validation before registration and third party verification as separate steps.

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<sup>13</sup> Under CDM, "review" refers specifically to a request by the CDM EB for further review if it has doubts about the validity of (certain aspects of) a project. We use the term more generally to refer to an in-depth examination.

<sup>14</sup> Under CAR, projects are first listed and only registered after the first verification.

## Ownership of Emission Reductions and Credits

Two main approaches are observed under international programs:

*Ownership of the credits to the host country, then transferred to project developers<sup>15</sup>*: under the programs relying on organizations governed by international law (i.e., CDM and JI), there is a presumption that the host country government has a sovereign right to the emission reductions achieved by CDM projects hosted within its jurisdiction, as well as to the Certified Emission Reductions (CERs) issued with respect to those reductions. These rights are, in turn, transferred by the host country to their authorized CDM project participants through the issuance of a Letter of Approval (LoA). The exact wording of the LoA is left up to the host country government. Having a clear and explicit allocation of the rights to the emission reductions and to the credits can help avoid uncertainties as to whom should have these rights. Project developers might be required to submit an attestation or evidence showing that they have the rights in order to get a LoA. The host country government can decide to levy fees on the credits before they are transferred to project developers.

*Direct ownership of the credits to the project developers*: under voluntary programs (i.e., VCS, GS, CAR), the project developers have the right to the emission reductions and the credits issued. To be granted this right, project developers have to show that they have the ownership of the activity that reduces the emissions (e.g., technology, measure, etc.). The host country government is not involved in this process. CAR is purposefully focusing on project types where the rights to the emission reductions is unambiguous in order to avoid double counting.

In both cases, ownership (emission reductions and credits) is transferred with the transfer of credits. The modalities for these transfers are commercial terms agreed in contracts.

### A.3. Costs and Revenues (Administration Module)

Link to the discussion of the Costs and revenues module in the context of:

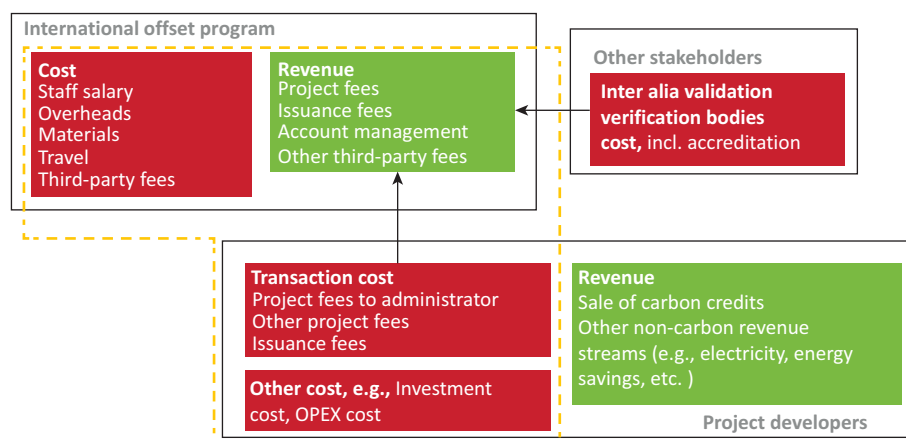
- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

The main cost and revenue streams under an offset program are summarized in figure 15 below. The most relevant streams in the context of this Technical Note are those borne by:

- The program.
- The project developers (here defined as the developers of the mitigation assets and the entity responsible for getting credits issued by the projects).

<sup>15</sup> Source: UNEP, Baker, and McKenzie. 2009. *Implementing CDM Projects, Guidebook to Host Country Legal Issues*.



**Figure 15. Main Cost and Revenue Streams under an International Offset Program**

*Note:* The costs borne by the international offset program (administration costs) cover the cost of running the program. The upfront costs of designing the program and setting-up the infrastructure are not included.

- The list of “other stakeholders” is not exhaustive. Validation and verification bodies and the accreditation costs they incur are highlighted as they might a revenue stream for the international offset program (not applicable if accreditation is outsourced).
- In the case of a domestic offset program leveraging the international experience, the administration cost will be split between the international offset program administrator and the domestic one. This is discussed in the Impact assessment in chapter 4.

These cost and revenue streams are surrounded by an orange dash line in figure 16 below.

### **Administration Costs and Revenues**

The costs incurred by the international offset program fall into the following main categories:

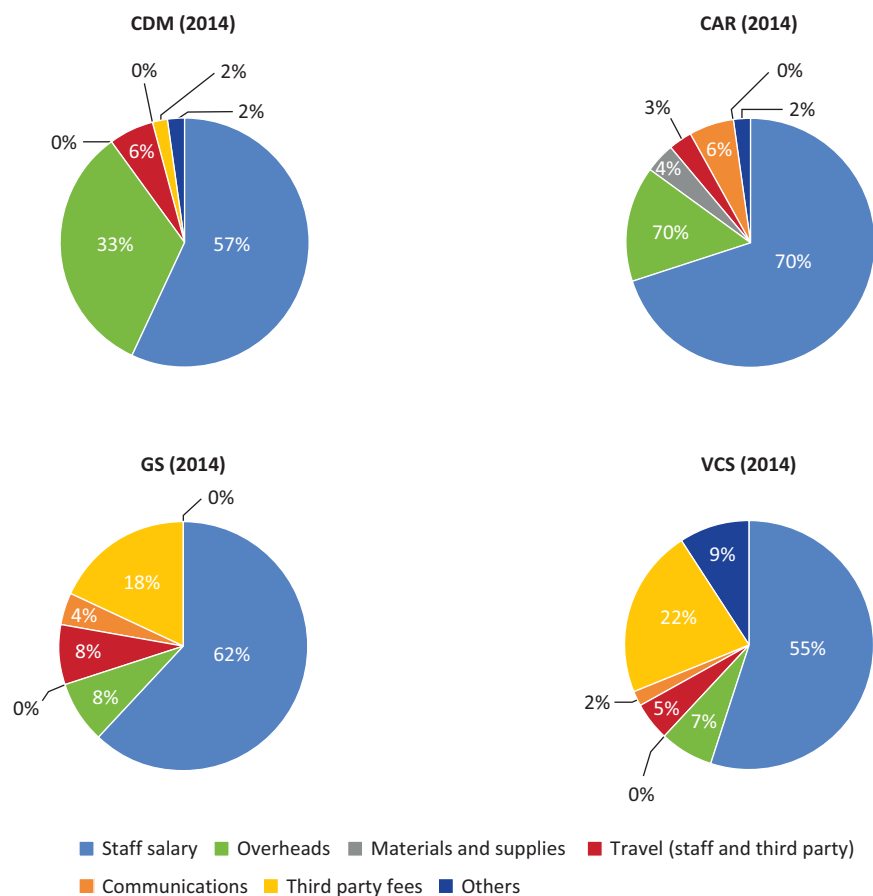
- Staff salary
- Overheads (e.g., typically rent, insurance, utilities)
- Materials and supplies
- Travel expenses (staff and external experts)
- Communications
- Third party fees (e.g., external expert’s fees, training of staff and external people)
- Others

The revenue generated by the international offset program fall into the following main categories:

**Project fees:** revenue raised through fees for project submission and approval paid by project developers (further discussed in transaction costs below)

- *Issuance fees:* revenue raised through fees for issuance of carbon credits paid by the project developers (further in transaction costs discussed below)
- *Account management:* revenue raised through fee to transfer project or credits between accounts paid by project developers and/or account holders (further discussed in transaction costs below)

**Figure 16. Breakdown of Costs in the CDM, CAR, Gold Standard and VCS (2014)**



*Sources:*

CDM: UNFCCC (United Nations Framework Convention on Climate Change). 2014. *Quarterly Report Financial Resources Fourth Quarter*. CDM-2014Q4-INFO07. Version 01.0; UNFCCC (United Nations Framework Convention on Climate Change). 2012. *Quarterly Report of the UNFCCC Secretariat to the Board: Performance against the 2012 CDM Management Plan (CDM-MAP)*. CDM-2012Q4-INFO01. Fourth Quarter. Version 01.0.

- CAR: personal communication, based on financial statements, March 2015.
- VCS: VCS audited financial statements for 2013 and 2014
- GS: personal communication, May 2015.

*Note:* Carry-over not included. The categories of costs and revenue might not be fully comparable across programs.

- *Other third-party fees:* revenue raised through fee paid by validation and verification bodies to be accredited, or by project developers to get a new methodology reviewed and approved
- *Others:* income from consultancy assignments, from the attendance to conferences and workshops organized by the administrator.

The nature of the revenue depend on the business strategy of the offset body. A governmental or UN-related body (e.g., CDM) operate differently from a non-profit service provide (e.g., CAR, GS, VCS), which will seek to diversify its revenue streams.

Most international offset programs are not required to report publicly on their financials. As such, data on costs and revenues is scarce. The two programs for which comparable relevant information is available (CDM and CAR) are presented in table 8 below.

For each of the programs the cost and revenue per tCO<sub>2</sub> are indicated. This is to help compare the programs and give a sense of the magnitude of the costs and revenues. However, it should not be taken as a definite metrics to evaluate programs. Some programs are run by public entities and some others by private entities, which have different priorities and manage budgets in a different way. Also, costs and revenues are not necessarily directly correlated to the pipeline of projects in a given year, as the programs engage in activities that are not directly related to projects (e.g., revenue-generating activities: workshops, trainings with paid attendance; costs: e.g., under the CDM, development of “public good” methodologies, capacity building to countries, administration of an accreditation system and support to Parties for negotiations). The data for two years is provided for the CDM: 2012, which was the peak of CDM activity (number of projects registered and volume of credits issued), and 2014, which is the year with the lowest activity. The cost in 2014 was 22% lower than in 2012, but the revenue was 92% lower. This highlights that, while revenue is directly linked to the level of activity under the program, cost is not as responsive as the infrastructure in place need to be able to cater with a range of levels of activity, and takes some time to adapt to changes in the levels of activity.

### **Transaction Costs**

Transaction costs are costs incurred by the project developers to develop a project and get credits issued under the program. They relate solely to the activities linked to the generation of credits by the project under the international offset program, i.e., they do not include costs such as feasibility studies, investment costs, OPEX, etc.

Transaction costs typically include the following elements:

- *Project design*: costs to prepare the project documents (e.g., project idea notes, project design documents)
- *Validation*: fees for validation and verification bodies, costs to carry-out the validation (e.g., internal costs, fees for external consultants to assist the validation process)
- *Review and final approval*: fees for the submission and approval of the project by the administrator of the international offset program (e.g., registration fee), costs for review and approval (e.g., internal costs, fees for validation and verification bodies, fees for external consultants)
- *Monitoring and reporting*: costs to set-up and run the CDM monitoring and reporting system, costs to prepare the monitoring report (e.g., internal costs, fees for external consultants)
- *Verification*: fees for validation and verification bodies, costs to carry-out the validation (e.g., internal costs, fees for external consultants to assist the verification process)
- *Review and issuance of carbon credits*: fees for the issuance of carbon credits by the administrator of the international offset program, costs for review and issuance (e.g., internal costs, fees for validation and verification bodies, fees for external consultants)

**Table 8. Administration Costs and Revenues under the CDM and CAR (Total and Per tCO<sub>2</sub>)**

	CDM 2012 (USD)	CDM 2014 (USD)	Comments	CAR Fiscal Year 2014 (USD) <sup>a</sup>	Comments	VCS Fiscal year 2013 (USD) <sup>a</sup>	VCS Fiscal Year 2014 (USD)	Comments	GS Fiscal year 2013 (USD)	GS Fiscal year 2014 (USD)
Cost										
Staff salary	18,729,539	17,445,226		2,450,337		1,766,319	2,136,589	Includes salaries, employee benefits, payroll taxes and pension contributions	1,640,494	2,226,201
Overheads	13,480,263	10,049,627	Includes, inter alia, Total Cost of Ownership (UNFCCC secretariat cost recovery mechanism) and 13% programme support to cover administrative services provided by UN Office in Geneva and UNFCCC secretariat	546,561		256,646	276,128		352,367	283,218
Materials and supplies	139,941	69,671		143,428						
Travel (staff and third party)	3,555,371	1,769,125		106,416		252,181	181,562		223,375	275,820
Communications	45,339	40,388		220,255		57,725	79,740		48,147	129,870
Third party fees	2,967,278	772,162	Consultants and experts fees			830,466	834,200	Contractors and consultants	804,495	645,797
Others	461,342	514,361	Grant (EB) and training	55,881		300,015	361,459	VCS Program services		

Total	39,379,073	30,660,560		3,522,878	Includes costs for all operations, not just program administration	3,463,352	3,869,678		3,068,878	3,560,908
Revenue										
Project fees	66,115,047	1,772,560	Registration fees	2,967,604	Project fees, issuance fees, account management fees <sup>b</sup>				1,358,341	747,765
Issuance fees	46,736,600	7,308,561	Referred to as "share of proceeds"			2,891,191	1,760,906		2,152,441	2,517,320
Account management	—	—							53,529	9,894
Other third-party fees	406,803 8,914	158,464 4,000	Accreditation fees and fees from the accreditation process Methodology fees			121,054	99,624	Validation and Verification Body fees, Methodology Approval Process fees, other Program income	46,452	120,013
Others						290,620	337,376	Grants and interest income	82	33,043
Total	113,267,364	9,243,585		2,967,604		3,302,865	2,197,906		3,610,844	3,428,035
Cost and revenue per tCO <sub>2</sub>										
Annual issuance (MtCO <sub>2</sub> )	339	104		13		29	18		10	13
Cost (USD/tCO <sub>2</sub> )	0.12	0.29		0.27	Costs for all program operations	0.12	0.22		0.30	0.27
Revenue (USD/tCO <sub>2</sub> )	0.33	0.09		0.23	Only program administration revenues	0.11	0.12		0.35	0.26

<sup>a</sup> CAR fiscal year is July 2013-June 2014, VCS fiscal year is calendar year.

<sup>b</sup> Does not include consultancy, conference, or workshop income.

- *Others*: e.g., costs to develop a new methodology or revise an existing ones (internal costs, fees for validation and verification bodies, fees for external consultants), costs for renewal of crediting period (under the CDM), costs to set-up an account, transfer projects or credits between accounts, etc.

Data on transaction costs is also scarce. Information is provided for illustrative purposes along the project cycle in figure 17 below. Recent analysis on transaction costs for new stand-alone CDM projects shows that, regardless of project type, transaction costs are almost always in the range of 0.16–1.33 €/tCO<sub>2</sub> (= \$0.17–1.45/tCO<sub>2</sub>).<sup>16</sup> For voluntary projects, transaction costs have been estimated at around \$0.91–2.95/tCO<sub>2</sub> for GS, \$0.74–3.31/tCO<sub>2</sub> for VCS (low range for large scale projects and high range for small to micro-scale projects).<sup>17</sup>

The wide range within programs can be explained by<sup>18</sup>:

- Heterogeneity of projects within a type
- Variability of expert judgment when estimating costs
- Wide range of possible scenarios for a given project (e.g., different scales, location of the project, monitoring embedded or not in the core business, single installations vs. multiple installations, availability of data, etc.)

The differences between programs can be explained by:<sup>19</sup>

- The steps in the project cycle (e.g., host country approval in the CDM but not other programs)
- Differences in program fees
- Content and scope of project design documents, monitoring documents and validation/verification processes
- Type of validation and verification entities used for validation and verification (e.g., can be the same one for CDM small-scale, GS small-scale and VCS)
- Simplification of project cycle (e.g., no third party validation and verification for micro-scale GS projects)
- Inclusion of additional checks (e.g., GS sustainable development matrix)

#### A.4. Liabilities, Non-Permanence Risk and Appeal (Administration Module)

Link to the discussion of the Liabilities, non-permanence risk and appeal module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

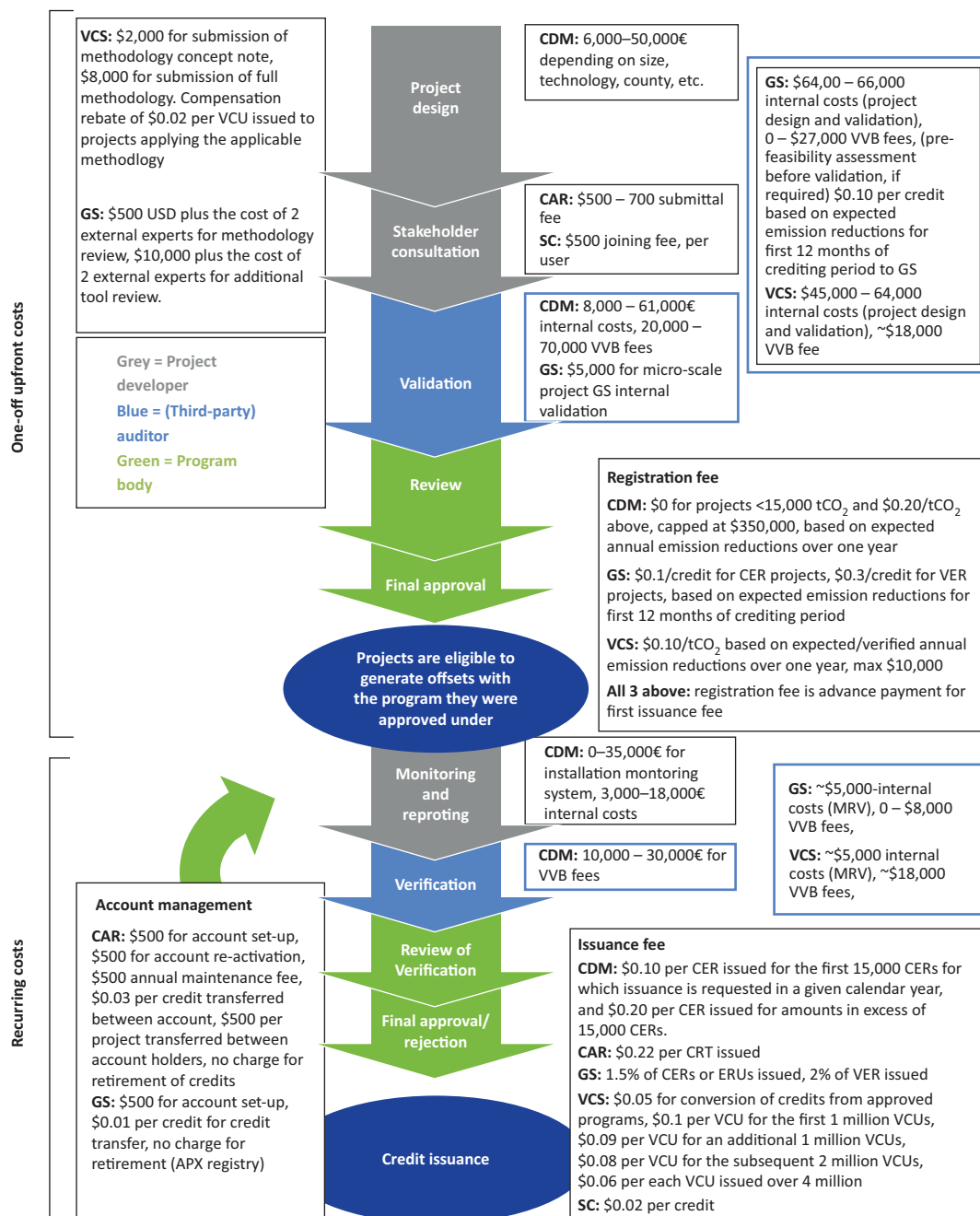
<sup>16</sup> Ecofys. 2013. *CDM Market Support Study*. USD—EUR exchange rate 18 March 2015.

<sup>17</sup> Guigon, P., V. Belassen, and P. Ambrosi. 2009. “Voluntary Carbon Markets: What the Standards Say...” Mission Climat Working Paper N° 2009 -4. [http://www.cdclimat.com/IMG/pdf/4\\_Working\\_Paper\\_EN\\_Voluntary\\_carbon\\_markets\\_what\\_the\\_standards\\_say-2.pdf](http://www.cdclimat.com/IMG/pdf/4_Working_Paper_EN_Voluntary_carbon_markets_what_the_standards_say-2.pdf).

<sup>18</sup> Ecofys (2013) CDM Market Support Study. USD—EUR exchange rate 18 March 2015.

<sup>19</sup> Guigon, P., V. Belassen, and P. Ambrosi. 2009. “Voluntary Carbon Markets: What the Standards Say...” Mission Climat Working Paper N° 2009 -4. [http://www.cdclimat.com/IMG/pdf/4\\_Working\\_Paper\\_EN\\_Voluntary\\_carbon\\_markets\\_what\\_the\\_standards\\_say-2.pdf](http://www.cdclimat.com/IMG/pdf/4_Working_Paper_EN_Voluntary_carbon_markets_what_the_standards_say-2.pdf).

**Figure 17. Transaction Costs in International Offset Programs**



**Sources:**

- Ecofys. 2013. *CDM Market Support Study*.
- The Gold Standard. 2012. *Gold Standard Requirements V.2.22 Frequently Asked Questions*.
- SOCIALCARBON Website.
- Markit SOCIALCARBON Registry System. <http://www.socialcarbon.org/developers/registry/> (Last visited January, 2015).
- VCS (Verified Carbon Standard). 2015. Program Fee Schedule. VCS Version 3. Requirements Document. v3.5.
- Guigon, P., V. Belassen, and P. Ambrosi. 2009. "Voluntary Carbon Markets: What the Standards Say..." Mission Climat Working Paper N° 2009 -4.

Note: VCS = Verified Carbon Standard; VCU = Verified Carbon Unit; GS = Gold Standard; CDM = Clean Development Mechanism; CAR = Climate Action Reserve; SC = Social Carbon.



## Liabilities Distribution

There are two main kinds of programmatic risks for an offset program:

- *Issuance*: over-issuance of credits, e.g., due to an error in the calculation of the emission reductions generated by a project.
- *Registration*: registration of projects that should not be registered, e.g., non-additional projects.

These situations can be the result of, e.g., a mistake, negligence, or a fraudulent act and should be minimized to maintain the integrity of the program.

Existing international programs address the liabilities for over-issuance in the following ways<sup>20</sup> (see table 9):

- *Verification body*: the verification body that carried out the verification needs to compensate for excess credits.
- *Combination*: the liability is allocated depending on the circumstances that led to the over-issuance. This adds complexity but also flexibility compared to the other options. For example, VCS recognizes the limited liability the auditors are able to assume and therefore puts certain liabilities on project developers and limited liability on the auditors.

The following options exist but are not observed in the programs assessed:

- *Credit holder*: the entity that has the credit at the time the error is noticed is liable (i.e., project developers or buyers). This option is easy to administer but puts the burden on the market.
- *Project developer*: the project developer needs to obtain and retire credits equal to the over-issuance.
- *Program*: the program needs to compensate for excess credits, e.g., through a buffer or a liability insurance.

**Table 9. Distribution of Liability for Over-Issuance**

	<i>Verification body</i>	<i>Combined</i>
CDM	✓	
JI	✓	
CAR	✓	✓
VCS	✓	✓

*Note*: No information available for JCM and GS.

<sup>20</sup> Main source: USAID. 2014. *Kazakhstan Offset Program Policy and Design Recommendations*, written by Climate Action Reserve and TetraTech ES, Inc.

### Non-Permanence Risk

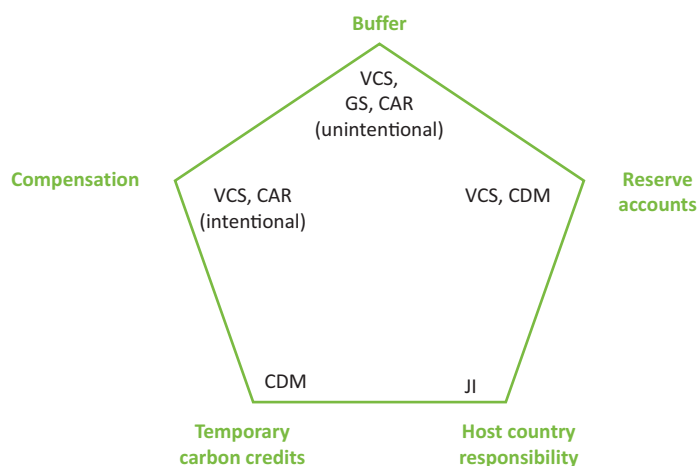
Agriculture, forestry and other land use projects face an additional type of risk compared to non-land based projects, which is the release of the sequestered carbon back into the atmosphere. Such risk can be classified into:

- *Unintentional reversals*: these reversals are due to natural disturbances (e.g., wildfires, wind, and flooding, pests and diseases) or political circumstances (e.g., unexpected political changes) beyond a project developer's control.
- *Intentional reversals*: these reversals are caused by purposeful actions of the project participants (e.g., over-harvesting, land clearing and conversion, and intentionally set fires).<sup>21</sup>

The assessed programs address this risk in five main ways (see figure 18):

- *Buffer approach*: a portion of the credits issued by every project is deposited in a common pool, which acts as a general insurance. The credits in the buffer pool cannot be traded. The amount set aside can be based on a project assessment (e.g., 10 to 60% under the VCS, CAR) or can be common for all projects (e.g., 20% under the GS).
- *Reserve accounts*: a portion of the credits issued by a given project are put in an account to compensate for possible reversal of that particular project.
- *Compensatory activities by project developer*: the project developer compensates for the carbon that is released back in the atmosphere. This can be through implementing activities

**Figure 18. Mitigation of Non-Permanence Risks under International Offset Programs**



Note: Reserve accounts in the CDM only apply to carbon capture and storage (CCS) projects. VCS = Verified Carbon Standard; GS = Gold Standard; CAR = Climate Action Reserve; CDM = Clean Development Mechanism; JI = Joint Implementation.

<sup>21</sup> Murray, B. C., C. S. Galik, S. Mitchell, and P. Cottle. 2012. *Alternative Approaches to Addressing the Risk of Non-Permanence in Afforestation and reforestation under the Clean Development Mechanism*. Duke University, prepared for the World Bank Carbon Finance Unit.

on the ground (e.g., replanting of areas where reversals occurred, planting new areas) or by surrendering credits of the same program (from other projects or from the same project but which have not been sold yet). This can apply to both intentional and unintentional reversals.

- *Issuance of temporary carbon credits:* credits issued for land-used activities are temporary. The buyer needs to replace the credits once they expire. This covers both intentional and unintentional reversals.
- *Host country responsibility:* the reversal is captured in the national GHG accounting and the liability falls with the host country.

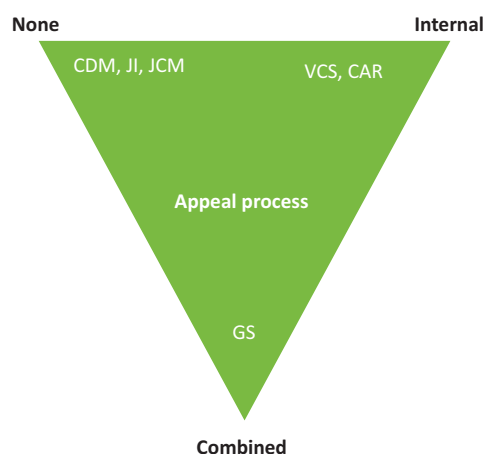
Other approaches, such as commercial insurance, performance bonds and government’s guarantees are under discussion. Such options are not used in the programs assessed.

### Appeal

Project developers will be affected by any decision that has negative impacts on their operation (rejection of a registration or an issuance, ruling on over-issuance). Existing programs address this question in different ways (see figure 19):

- *No appeal or complaint process:* there is no process for project participants to appeal to any decision.
- *Internal appeal/complaint process:* a mix of internal and external expert review the request and make a final decision.
- *Combined process:* external experts review the request and make a final decision after an internal review.

**Figure 19. Options for Appeal Processes under International Offset Programs**



Source: USAID 2014 *Kazakhstan Offset Program Policy and Design Recommendations*, written by Climate Action Reserve and TetraTech ES, Inc.; Gold Standard Program Annex AH—Rules for Appeals on Registration, Issuance and Labeling, 25.

## A.5. Scope (Infrastructure Module)

Link to the discussion of the Liabilities, non-permanence risk and appeal module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

The scope of a program/label includes both the geographic and GHG coverage as well as the sectors and project types eligible.

### Geographical Scope

Existing international programs and labels fall into four main categories (figure 20):

- *International scope*: the program issues credits for projects located in a large set of countries, either globally, or in a predefined list of countries around the world.
- *Regional scope*: the program issues credits only for projects located in a predefined region.
- *Specific scope*: the program issues credits only for projects located in a specific host country based on bilateral agreement.
- *Unspecified scope*: the program does not specify the geographic scope, this is determined by the offset program for which the program issues credits.

### GHG Coverage

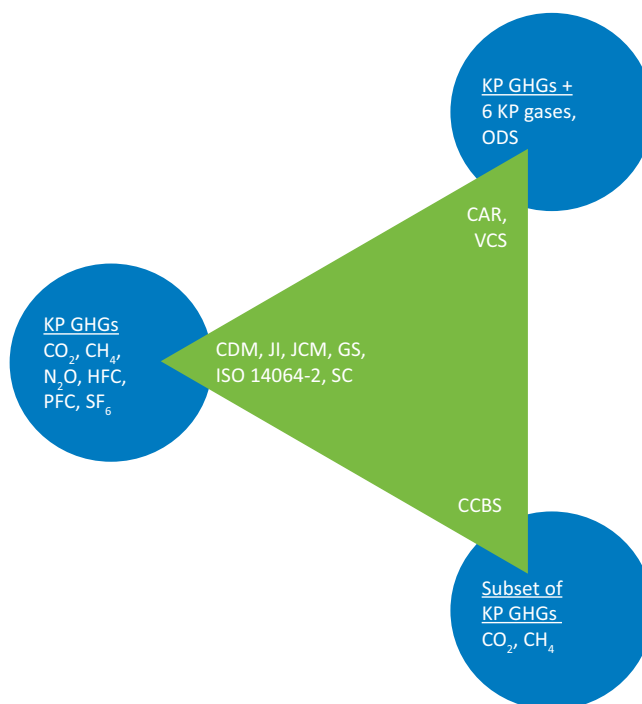
Most international programs and labels allow reductions in all recognized Kyoto Protocol gases. However, some programs allow only a subset of the six Kyoto Protocol gases while some others allow additional gases with an identified radiative forcing effect (figure 21).

### Sectors and Project Types Covered

Most international programs and labels cover a broad scope of project types, as illustrated in table 10. For policy or political reasons, several programs have established negative lists of project types that cannot generate offsets (e.g., no nuclear energy projects under the CDM).

**Figure 20. Four Categories of Geographical Scopes Used by Different International Offset Standards or Labels**

<b>International scope</b> CDM, JI, GS, VCS, CCBS and SC	
<b>Regional scope</b> CAR e.g., US, Mexico	<b>Specific scope based on bilateral agreements</b>  JCM e.g., Japan has MOUs with Bangladesh, Cambodia, Costa Rica, Ethiopia, Indonesia, Kenya, Laos, Maldives, Mexico, Mongolia, Palau, and Vietnam
<b>Unspecified scope</b> ISO 14064	

**Figure 21. GHG Coverage**

### **Avoidance of Double Counting**

Double counting occurs when the same emission reductions is monetized twice (e.g., monetized through emission allowances and offset credits) or the same carbon credit is sold twice. International programs ensure double counting is avoided in five main ways (see figure 22):

- *Tracking the projects and units:* carbon offsets are uniquely identified and their transaction is tracked in registries (from the program and/or national), credits issued under a scheme cannot be issued under another scheme.
- *Only one type of entity is eligible to claim credits:* some programs only allow one type of entity to claim credits. For example under the VCS and CAR, eligibility is limited to projects types for which the ownership of the credits is unambiguous. Under the CDM, the baseline and monitoring methodologies often allow only one entity to claim CERs for a proposed project activity.
- *Providing evidence:* project developers have to provide a written statement demonstrating and/or confirming no double-counting occurs. These representations (or attestations) hold the project developer legally accountable.
- *Check by the regulator:* in some schemes, the regulator checks whether a mitigation activity has been registered and carbon credits issued under another scheme (e.g., VCS, CAR, GS).
- *Restricting eligibility of reductions to those at uncapped/unregulated sources:* e.g., CDM host countries can only be countries that have no emission reductions targets under the Kyoto Protocol, VERs are issued for projects not covered by any compliance regime.

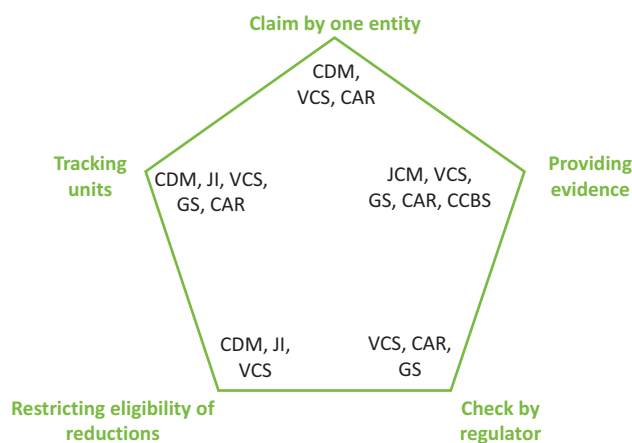
**Table 10. Simplified Overview of Coverage of Considered Program in Terms of Project Types and Sector**

	Renewables and energy efficiency	Coal mine methane	Waste management	Agricultural manure	N <sub>2</sub> O abatement	Other industrial gases	Agricultural practice	ODS destruction	Afforestation/ reforestation	Protection of existing forests (including REDD+)	Improved forest management	Other kinds of biosequestration	Carbon capture and storage	HFC-23 reduction	Nuclear
CDM	✓	✓	✓	✓	✓	✓	✓		✓				✓		✗
JI	✓	✓	✓	✓	✓	✓	✓		✓	✓					✗
CAR		✓	✓	✓	✓		✓	✓	✓	✓	✓				
JCM	✓	✓	✓	✓	✓	✓	✓		✓	✓					
GS	✓		✓	✓			✓		✓		✓				
VCS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✗	
CCBS							✓		✓	✓	✓	✓			
SC	No set criteria regarding project type														

Source: PMR Technical Note 6 (2014) and own research.

Note: ✓ = indicates the sector is covered by the program, ✗ = indicates the sector is explicitly excluded from the program.

**Figure 22. Five Main Ways to Avoid Double-Counting in International Offset Standards**



Source: PMR Technical Note 6 (2014), G5.9 in CCB Standards Third Edition, SEI (2014).

Note: Add-on labels do not issue credits and hence do not address double-counting. CDM = Clean Development Mechanism; VCS = Verified Carbon Standard; CAR = Climate Action Reserve; JI = Joint Implementation; GS = Gold Standard; JCM = Joint Crediting Mechanism; CCBS = Climate Community and Biodiversity Standards.

## A.6. Methodologies and Tools (Infrastructure Module)

Link to the discussion of the Liabilities, non-permanence risk and appeal module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

### *Methodologies (Types, Process for Development and Approval)*

Offset programs will only issue credits for GHG reductions that are quantified and monitored in accordance with established methodologies. Methodologies contain eligibility rules, quantification methods, and monitoring requirements that ensure the consistency, environmental integrity and rigor of GHG reduction accounting. The Climate Community and Biodiversity Program (CCBS) and the Social Carbon Program, as add-on labels, do not issue carbon credits and hence do not include their own methodologies. Similarly, the ISO 14064-2 standard does not include its own methodologies.

All of the assessed programs rely on methodologies that exhibit a wide range of approaches for the quantification and monitoring of emission reductions. Some programs rely strongly on project-based approaches, like the CDM, but all programs use standardized approaches to a certain extent (e.g., project specific default values, sector-wide emissions intensity benchmark, common factors used across methodologies). Standardized approaches can help reduce transactions costs and risks for project developers. However, a large amount data and research is needed to develop standardized approach, which require significant resources from the international offset program bodies (see figure 23).

In developing carbon offset methodologies, there are three basic approaches that can be taken (see figure 24):

- *Top down*: methodologies developed and proposed by a body from the program, e.g., small-scale working group under the CDM.
- *Bottom up*: methodologies developed and proposed by participants in the programs, e.g., project developers.
- *Based on existing methodologies*: the program use existing methodologies developed under another program (e.g., CDM) and/or methodologies that are based on existing methodologies adapted to the program.

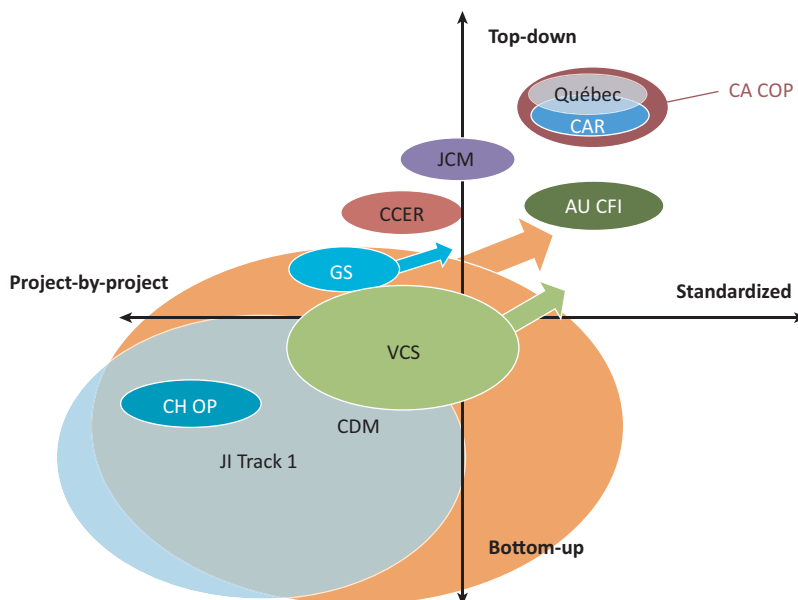
The methodology approval process is inclusive of three steps (see table 11):

- *Public consultation*: mostly includes the online listing of the draft methodology for comment, can include a public workshop (e.g., CAR).
- *Technical review*: this includes either an independent validator (for bottom-up development) and/or (in)formal advisory panels.
- *Final approval by program body*: generally the program authority approves the methodology.

After the methodology is approved it can be improved through revisions. For example, under the CDM, the request for clarifications and revisions to CDM methodologies serves as a dialogue between regulators



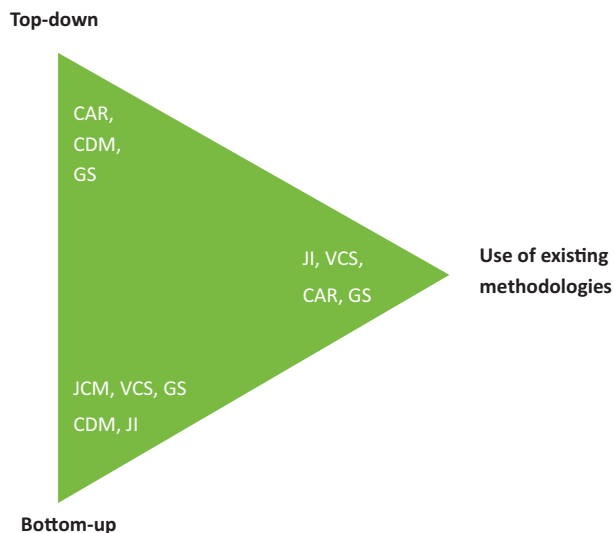
**Figure 23. Standardization in Methodologies**



Note:

- Taken from PMR Technical Note 6 (2015) Overview of Carbon Offset Programs
- Similarities and Differences. Technical Note 6. January 2015
- AU CFI = Australia’s Carbon Farming Initiative; CA COP = California’s Compliance Offset Program; CCER = China CER; CH OP = Switzerland’s Offset Program; Québec = Québec’s offset program; CAR = Climate Action Reserve; JCM = Joint Crediting Mechanism; GS = Gold Standard; VCS = Verified Carbon Standard; CDM = Clean Development Mechanism.

**Figure 24. Overview of Three Basic Approaches to Determine Offset Methodologies**



Note: CAR = Climate Action Reserve; CDM = Clean Development Mechanism; GS = Gold Standard; JI = Joint Implementation; VCS = Verified Carbon Standard; JCM = Joint Crediting Mechanism.

CAR: Quantification often based on CDM methodologies but tailored for US circumstances and more standardized additionality and baseline criteria than under CDM. Not applicable to labels (CCBS, SC, ISO).

**Table 11. Steps Required for Methodology Approval by Offset Programs**

<i>Approval steps</i>	<i>Program options</i>
Public consultation	Online listing: CDM, JCM, CAR, GS Public workshop: CAR
External review of experts	Appointed methodologies panels, CDM desk review: CDM External technical reviewers: CAR, GS Validation verification bodies: VCS None: JCM
Final approval	Closed meetings: CDM-EB, JCM-JC, GS-TAC, VCSA Public meeting: CAR Board, part of CDM-EB meetings on methodologies (through webcast)

and project proponents to continuously improve the methodologies based on the evolving context on the ground. They also serve to give a consistent interpretation of methodologies, as it is not possible to include in the original methodologies guidance for all possible situations. To date, there have been 255 revisions and 265 clarifications to large scale CDM methodologies. Similarly, 204 revisions and 460 clarifications have been provided to small scale CDM methodologies.

### ***Methodologies (Pipeline and Use across Programs)***

The number of methodologies approved under the international programs assessed is shown in table 12 below. Some international programs leverage the existing experience and allow the use of methodologies approved under other programs. This is also highlighted in table 12.

### ***Tools: Zoom on Additionality Determination***

Additionality means that the offset programs provides emission reductions beyond those that would have sufficient incentive in the absence of the offset program. Additionality is determined differently in different programs (see figure 25), although in general the approach contains similar calculation steps.

- *Rules/tool on determining additionality:* apply an additionality tool on a project-by-project basis. Such a tool can be adopted from another program (i.e., CDM). It usually consists of the following steps:
  - Demonstration that the project activity is not legally required;
  - Identification of alternatives to the project activity;
  - 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;
  - Barrier analysis;
  - Common practice analysis.
- *Positive list for project types/sizes:* project types using selected technologies included in the positive list are deemed to be additional. Additionality determination is substituted by eligibility criteria. Eligibility criteria for registration can be based on the efficiency of products/technologies, a benchmark approach, or a type of product/technology. Positive lists can also be based on the size of the project and are generally applicable to micro- or small-scale projects.
- *Benchmarks:* projects that meet or exceed the benchmark (e.g., performance level, market penetration rate) are automatically considered additional.

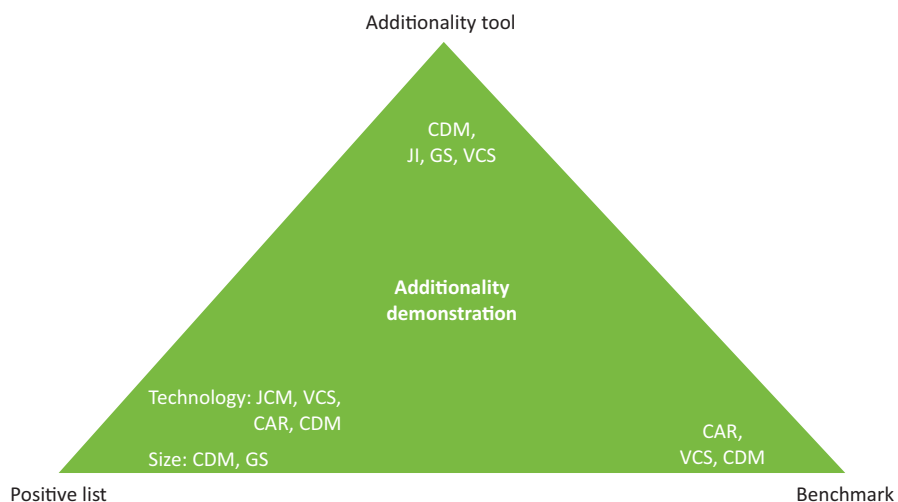
**Table 12. Number of Approved Methodologies by International Offset Program and Methodologies Accepted by the Programs**

Program	Use of methodologies from another program	Total approved methodologies
CDM	No	184 (92 small, 89 large-scale, 4 afforestation/ reforestation), and over 30 tools
JI	Yes, from the CDM	Not determined
CAR	No	15
JCM	No	3
GS	Yes, methodologies approved under the CDM	14
VCS	Yes, methodologies approved under the CDM and CAR	24

Source: CDM data as of Sept 2014.

Note: In JI, the number of methodologies is not determined, as projects can develop project specific approach (or use CDM methodologies). As labels, CCBS, SC and ISO do not provide methodologies.

**Figure 25. Additionality Determination—Options in Different Offset Programs**



Source: PMR Technical Note 6 (2014).

Note: JCM: Additionality determination is substituted by eligibility criteria for each of the methodologies, similar to a positive list. Both governments (of the host country and of Japan) determine what technologies, products, etc. should be included in the eligibility criteria. JCM uses crediting thresholds below business as usual (BAU), which are calculated ex ante in the methodology for a specific project type and country.

VCS: New methodologies can include new approaches for the demonstration of additionality, either within the methodology or as a separate tool subject to approval by the VCS.

ISO 14064 requires that the GHG project result in GHG emission reductions or removal enhancements in addition to what would have happened in the absence of that project, without using the term “additionality.” It does not have any requirements, as those are defined by the program which requires the use of ISO add-on. The guidelines for additionality generally assume a project-specific approach. Similarly, while general guidance is offered for baseline quantification and monitoring protocols, no requirements exist.

CCBS and SC are not accounting programs and therefore do not deal with questions such as additionality.

## A.7. Validation, Verification and Accreditation (Infrastructure Module)

Link to the discussion of the Liabilities, non-permanence risk and appeal module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

Validation and verification are auditing processes that are conducted by an independent third-party (validation/verification entity) to assess the validity of claims made by project developers concerning project eligibility and performance and ensure that credits issued to projects are credible.

All investigated offset programs require validation and verification. Offset programs also establish the level of frequency for monitoring and verification and at which stage of the project cycle these activities are undertaken. Auditors are paid by project developers in all cases (e.g., CDM, JI, JCM, CAR, GS, VCS). Offset labels are so-called add-ons and therefore do not require their own validation or verification for carbon emission reductions, however they have their own specific validation and verification guidelines and reports to verify social and sustainability benefits (e.g., CCBS, SC). To save time, the add-on labels can be audited at the same time as for the carbon auditing (e.g., CCB + VCS).

The following aspects characterize the approaches taken by the international offset programs:

- *Accreditation framework*: the framework used by the programs to accredit validation and verification entities, e.g., UNFCCC accreditation framework, ISO14065 framework (GHGs—Requirements for GHG validation and verification bodies for use in accreditation or other forms of recognition) or another established framework. The framework usually sets general accreditation requirements as well as requirements to show competency with specific project types.
- *Accreditation body*: the body that is accrediting the validation and verification entities, which can be a body of the offset program itself or a recognized accreditation body not linked to the program. When the validation and verification entities are accredited by an external accreditation body, the program might reserve the right to suspend its recognition of an accredited validation and verification entity.
- *Validation and verification standard*: the standard that the validation and verification entities follow when carrying out the verification. This can be the UNFCCC validation and verification standard, or other bespoke standards.
- *Validation and verification entities*: the entities that are carrying out the validation and verification.

Information on the accreditation framework and body as well as the validation and verification entities is summarized in table 13 below for the assessed international offset programs. Information on the validation and verification standard is provided in table 14.

**Table 13. Overview of Validation and Verification Bodies and Accreditation Protocols Used by Different Offset Programs**

<i>Program</i>	<i>Validation and verification entities</i>	<i>Accreditation framework and body</i>	<i>Also used by</i>
CDM	Designated Operational Entity (DOE)	<ul style="list-style-type: none"> <li>Accredited by the CDM EB based on recommendations by the CDM accreditation panel.</li> </ul>	JCM, GS, VCS, CCBS, SC
JI	Accredited Independent Entities (AIEs)	<ul style="list-style-type: none"> <li>Accredited by the JI Supervisory Committee (JISC) particularly for Track 2 based on recommendations by the JI accreditation panel</li> </ul>	GS
CAR	Verification Bodies (VB)	<ul style="list-style-type: none"> <li>Entities accredited by the American National Programs Institute (ANSI) under ISO 14065: 2007, IAF MD 6:2009 and ISO 14064-3: 2006 for specific project sector groupings related to approved protocols. CAR reserves the right to conduct random audits of verification of the verifier and maintains rights to rescind or suspend its recognition of a validation and verification entity.</li> </ul>	CCBS
JCM	Third party entities	<ul style="list-style-type: none"> <li>DOEs</li> <li>Entities accredited under ISO 14065. The Joint Committee may suspend or withdraw the designation of a third-party entity if it has found fraud, malfeasance or incompetence of the entity.</li> </ul>	
GS	Validator and verifier	<ul style="list-style-type: none"> <li>DOEs for projects in non-Annex I countries</li> <li>AIEs for projects in Annex I countries</li> </ul>	
VCS	Validation/ Verification Body	<ul style="list-style-type: none"> <li>DOEs</li> <li>Entities accredited by an International Accreditation Forum (IAF) member body such as the ANSI and other national accreditation body for ISO 14065 scope VCS</li> </ul>	CCBS (non-DOE validation and verification entity accredited for forestry)
CCBS	Certification Body	<ul style="list-style-type: none"> <li>DOEs accredited for A/R or agriculture</li> <li>Certification body accredited under the Forest Stewardship Council (FSC) in the geographical area of the project to be evaluated</li> <li>Entities accredited under ISO 14065:2007 with a scope specifically for the VCS program covering agriculture, forestry or other land use</li> </ul>	
SC	Certifying Entity	<ul style="list-style-type: none"> <li>Entities accredited under programs recognized by SC (incl. CDM, VCS, CAR)</li> <li>Other accredited entity approved by the SC (e.g., with proven experience in certification of ISO, OHSAS or similar social and environmental programs)</li> </ul>	

Source: Programs and labels' rules and requirements.

Note: Under SC so far most projects have been audited by DOEs.

**Table 14. Validation and Verification Standard Followed by Third Party Auditors**

<i>Program</i>	<i>Validation and verification manuals/guidelines</i>
CDM	CDM validation and verification program, partly drawing on ISO 14064-3:2006
Jl	Jl determination and verification manual
CAR	Reserve Program Manual and Verification Program Manual, to be used in combination with the applicable individual Reserve project protocol and the ISO 14064 series
JCM	Guidelines for validation and verification, to be applied alongside with ISO 14064-3:2006
GS	The Gold Standard Requirements
VCS	VCS Program, which uses as its core ISO 14064-3:2006 and ISO 14065:2007, Validation and Verification Manual
CCBS	Rules for the Use of the Climate, Community and Biodiversity Programs
SC	Socialcarbon Program

## A.8. Registry (Infrastructure Module)

Link to the discussion of the Liabilities, non-permanence risk and appeal module in the context of:

- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

Every offset program requires a registry system in order to function. Essential elements of a carbon offset registry system include a project database and a credit and issuance tracking system.

### *Project Database*

A database containing information on projects at various stages of the project cycle (e.g., submission, stakeholder review, validation, approval, verification, termination or cancellation). Common information required to be maintained in a project database may include:

- *Basic identifying information* for each project (e.g., project name, location, type, start date, and identification number; identity of project developer or account holder; identity of current verification body; current project status; etc.)
- *Project documentation*, including submittal forms, project design documents, monitoring and/or verification reports, etc.

### *Credit Issuance and Tracking System*

A system that enables carbon offset credits to be issued, transferred among participants, and retired or cancelled. Basic required functionality includes:

- *Account establishment and maintenance*: Program participants must be able to create uniquely identifiable accounts for receiving, transferring, and retiring credits. Some programs may require

distinguishing accounts based on the type of participant (e.g., project developer, purchaser/buyer, trader/broker, program observer, etc.) Programs may also differ in terms of what kinds of entities are eligible to maintain accounts as well as specific conditions for eligibility (e.g., being a legally constituted entity, meeting “know-your-customer” requirements, agreeing to terms of use, etc.)

- Under the CDM Registry, only non-Annex I Parties project proponents and project proponents with authorization from an Annex I Party whose national registry is not yet connected to the International Transaction Log may maintain accounts. Other types of accounts (e.g., credit buyers and traders) are not supported, although these types of entities could in principle be accommodated under the auspices of non-Annex I Parties (see UNFCCC 2015 for more detail).
- Other international programs reviewed here generally support a variety of account types, with rules for eligibility defined by the programs themselves and/or their registry service providers.
- *Credit issuance, transfer, retirements, and cancellation:* Common functionality includes enabling the issuance and deposition of credits in a recipient’s account; allowing credits to be transferred between accounts; allowing credits to be retired in fulfillment of a mitigation obligation; and allowing credits to be cancelled if they are determined to be invalid or otherwise need to be removed from the system. Programs and their registries may differ in terms of specific functionality (some may not distinguish between retirement and cancellation) and the steps and procedures required to perform these actions.
  - Under the CDM Registry, for example, credits are issued into a program-wide “pending account” before being forwarded (transferred) to the holding accounts of project participants or non-Annex I Parties. There are also some restrictions on forwarding/transferring credits (e.g., project participant holding accounts can only hold credits issued for projects in which they are involved). Within the CDM Registry, credits may not be retired *per se*, but may be cancelled through transfer to a “voluntary cancellation account” (which could be done, for example, to fulfill a retirement obligation external to the Kyoto Protocol regime). See UNFCCC 2015 for further information.
  - Other international programs generally issue credits directly into the accounts of project developers and impose few if any restrictions on the transfer of credits to other accounts. They also explicitly support both retirement and cancellation functions.
- *Credit serialization:* Offset programs generally assign unique serial numbers to each credit they issue in order to facilitate tracking and reduce the risk of double counting. Serial numbers may also contain identifying information indicating the specific project to which a credit was issued and the year in which it was issued (vintage). Registries may differ with respect to identifying information and the degree to which individual serial numbers may be queried by outside observers.

For the project database component of a registry, the offset program administrator must establish rules, operating procedures, and requirements for:

- What kinds of information and documentation the database must contain
- Who may access the information, in what form, and under what modalities and restrictions, including what information will be made generally publicly accessible



- Submission and approval of project documents and application forms
- Initiation of project-cycle phases, including:
  - Project listing (pre-approval)
  - Project registration
  - Requests for credit issuance
  - Project termination, cancellation, or delisting

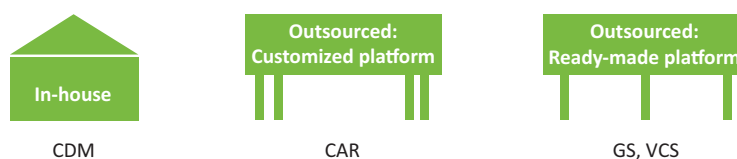
For the credit issuing and tracking system, the offset program administrator must establish rules, operating procedures, and requirements for:

- Account creation
- Credit issuance and serialization
- Initiation and completion of credit transfers
- Credit retirements
- Credit cancellation

Operationalizing these requirements requires the establishment of an interactive IT system providing all of the required functionality. Most existing programs have contracted out the development and operation of these IT systems. However, although underlying IT systems and software are almost always outsourced, there are differences in the extent to which user interfaces and operational details are customized or delegated to third-party registry service providers (see figure 26). Major registry service providers—such as Markit and APX, Inc. (see table 15)—provide customizable platforms used by a variety of different environmental commodity trading programs (including carbon offset programs). For some offset programs, these providers simply provide a software platform, with many interface details and operational requirements specified by the program (e.g., CAR). For other offset programs, registry service providers provide more of a ready-made system with a generic interface and program operational procedures, and fewer customized elements (e.g., GS). The VCS is unique in maintaining a centralized project database with an interface to two different registry service providers (Markit and APX) providing credit issuance and tracking services. Both the Markit and APX registry systems also link back to—and provide public accessibility to—information in the VCS project database, including project-specific documentation.

Finally, offset programs may differ in their degree of control over the operational elements of their registry systems. Programs like CAR and the Gold Program have staff that review and approve project

**Figure 26. IT System Development and Operation**



*Note:* CDM = Clean Development Mechanism; CAR = Climate Action Reserve; GS = Gold Standard; VCS = Verified Carbon Standard.

documentation before projects may advance through various stages of the project cycle and have credits issued; for these programs, registry service providers will only create accounts, update project status, and issue credits once program staff have approved these actions. By contrast, the VCS delegates some of these decisions to third-party registry system operators, including completeness checks on documentation.

Labels like CCBS and SC must approve certifications before projects can be flagged in their respective registry systems. CCBS maintains a project database separate from the registries that list and issue credits to CCBS-certified projects. SC relies on Markit for registry services.

**Table 15. Registry Providers**

<i>Offset program</i>	<i>Registry IT provider</i>	<i>Notes</i>	<i>Links</i>
CDM	In-house		CDM registry
J1	Depends (national registries)		National registries
CAR	APX	APX provides the software platform for CAR's registry, but the registry system is otherwise customized to CAR's unique interface and operational requirements.	APX registry
GS	Markit	GS projects are registered in Markit's general registry system, but identified as GS projects. The Markit registry functions as both project database and credit issuance/tracking system.	Markit registry
VCS	APX Markit	Both registry service providers maintain credit issuance and tracking systems. They also maintain project tracking systems that link to a central VCS project database. Project developers must register with either one of these service providers and submit validation and verification reports to them, as well as submit information to the VCS project database at different stages of the project cycle.	VCS project database APX registry Markit registry
CCBS	APX Markit	CCBS certification is flagged in the project information provided by the APX and Markit registry platforms. CCBS also maintains its own project database page.	CCBS project database APX registry Markit registry
Social Carbon	Markit	Social Carbon certification is flagged in the project information provided by the Markit registry platform. Social Carbon does not maintain a separate project database.	Markit registry

## A.9. Market Information (Market Module)

Link to the discussion of the Liabilities, non-permanence risk and appeal module in the context of:

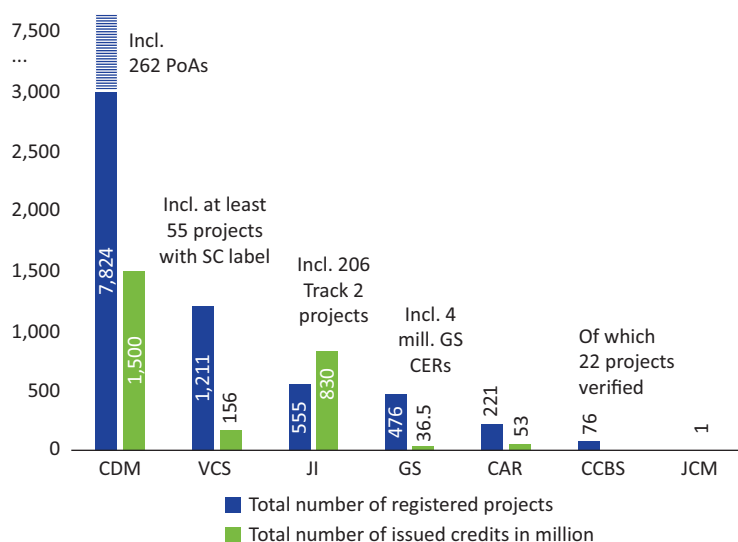
- The full reliance scenario: description and impact assessment
- The gate keeping scenario: description and impact assessment
- The outsourcing scenario: description and impact assessment
- The indirect reliance scenario: description and impact assessment

The international offset programs assessed are different in size (pipeline of projects and credits issued) and serve different markets. As a result, prices are varied. The information on the supply and demand of credits from the different programs and the resulting prices are presented in this section.

### Project Pipeline (Supply)

The number of projects approved (registered) under each program and the volume of credits issued are shown in figure 27 below. The CDM, JI, GS, VCS and CAR have been operating for 10 years or more. The JCM is just starting to operate, and CCBS is a niche label, which explains in part why their pipeline is limited.

**Figure 27. Total Number of Registered Projects and Number of Issued Credits (as of October 2014)**



Note: SC = Social Carbon; CDM = Clean Development Mechanism; VCS = Verified Carbon Standard; JI = Joint Implementation; GS = Gold Standard; CAR = Climate Action Reserve; CCBS = Climate Community and Biodiversity Standards; JCM = Joint Crediting Mechanism.

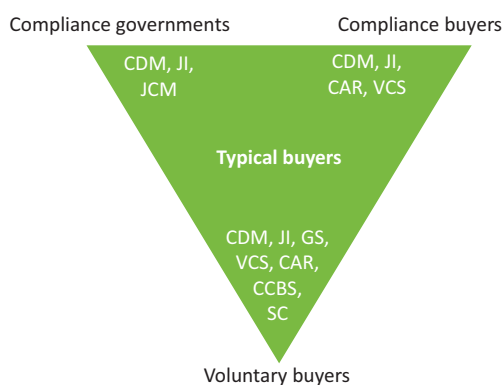
### Buyers of the Credits (Demand)

Buyers of the offset credits fall in three main categories (see figure 28):

- *Compliance governments:* governments of countries that have an emission reduction targets under the Kyoto Protocol. Such governments can also decide to cancel voluntarily credits beyond their commitments.

- *Compliance private entities*: entities that have a carbon liability, e.g., under an ETS or a carbon tax. These entities generally retire these credits or swap them for another unit (e.g., CERs for EUAs in the EU ETS. The CERs are then cancelled by the governments.)
- *Voluntary buyers*: buyers (private entities and government) that buy and cancel credits to voluntarily offset their emissions.

**Figure 28. Typical Buyers of Offset Credits Can Be Divided into Three Main Categories**

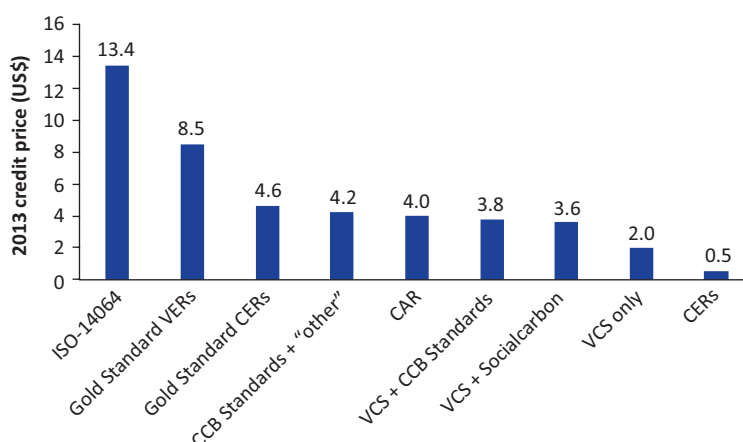


Note: CDM = Clean Development Mechanism; JI = Joint Implementation; JCM = Joint Crediting Mechanism; CAR = Climate Action Reserve; VCS = Verified Carbon Standard; GS = Gold Standard; CCBS = Climate Community and Biodiversity Standards; SC = Social Carbon.

### Credit Prices

The average credit price observed in the different programs in 2013 is shown in figure 29 below. The determinants of the price are not discussed in this Technical Note.

**Figure 29. Credit Prices**



Sources: Ecosystem Market Place. 2014. *Sharing the Stage: State of the Voluntary Carbon Markets 2014*; World Bank. 2014. *State and Trends of Carbon Pricing 2014*. Washington, DC: World Bank, developed by Ecofys and the World Bank.

Note: CDM = Certified Emission Reductions (CERs); VCS = Verified Carbon Units (VCUs); CAR = Climate Reserve Tonnes (CRT); Gold Standard = GS Voluntary Emission Reductions (GS VERs); and GS CERs.





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<http://www.thepmr.org>  
[pmrsecretariat@worldbankgroup.org](mailto:pmrsecretariat@worldbankgroup.org)