Pacific Carbon Trust

Guidance Document v 1.0

Pacific Carbon Trust

This document is in draft form only and represents the opinion of staff with Pacific Carbon Trust (PCT) regarding the interpretation of the Emission Offsets Regulation ("Regulation") under the *Greenhouse Gas Reductions Target Act,* as it relates to the development of offset projects. Where this document and the "Regulation" conflict, the "Regulation" takes precedence. Where this document and any official PCT procurement document conflict, the official procurement documents take precedence. This document is designed to provide assistance to project developers in submitting projects to Pacific Carbon Trust, and use of this document does not guarantee a successful bid into the Pacific Carbon Trust offsets procurement process. Pacific Carbon Trust shall have no liability arising from the use of this document.

This document should be considered a draft only, and will be revised over the coming months based on stakeholder input. Templates contained within the document are for guidance only, as actual project plans and project reports may differ based on requirements. If you have suggested comments or changes to the draft document please contact Michael D'Antoni at michael.dantoni@pacificcarbontrust.ca. This document is geared towards larger scale projects. PCT is working with the Ministry of Environment to create performance standards to facilitate smaller scale offset projects. Please check for the latest version of the draft document at www.pacificcarbontrust.ca; in the near future the Pacific Carbon Trust website will include an area to post comments related to the draft. If you have questions regarding the PCT procurement process please contact Pacific Carbon Trust @ 250 952-6793 or info@pacifccarbontrust.ca

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About Pacific Carbon Trust

Pacific Carbon Trust (PCT) is a Crown corporation established in 2008 to deliver BC-based greenhouse gas offsets to help clients meet their carbon reduction goals and to support the growth of BC's low-carbon economy. A carbon offset represents a qualifying reduction in greenhouse gas emissions generated by activities, such as improved energy efficiency, that can be used to balance the emissions from another source, such as a plane trip.

In its first year, PCT purchased over 300,000 tonnes of offsets through investments in 15 innovative BC-based projects. PCT delivers high quality carbon offsets to its clients, including the BC government. Projected annual demand is up to 1 million tonnes. Through this long-term demand and its commitment to credible offsets, PCT is systematically building the BC offset market.

In addition to helping private and public sector clients implement their carbon reduction strategies, PCT provides BC businesses with new economic opportunities. For example, the price attached to selling offsets can help make clean technology projects a reality, resulting in many economic and social benefits, in addition to the benefit of carbon reduction. By leveraging our relationships with industry and government partners, we're bringing people, money and ideas together to support innovation, new job opportunities and technologies.

We need to act on many fronts to address climate change, and Pacific Carbon Trust is an important part of the solution in BC. Our work is leading to world class offsets, a cleaner environment and a vibrant low-carbon economy in BC. For more information on Pacific Carbon Trust, visit www.pacificcarbontrust.ca.

TABLE OF CONTENTS

List of Tables

List of Figures

PREFACE:

This draft document is designed to provide offset project developers (Proponents) an overview of the British Columbia Emission Offsets Regulation and the process required to successfully submit offset project proposals to Pacific Carbon Trust. This document is a draft only, and will be revised based on comments and suggestions from users. To assist proponents and other stakeholders, Pacific Carbon Trust will maintain a list of Frequently Asked Questions (FAQs) on our website at www.pacificcarbontrust.ca. The FAQs will be updated to reflect comments and questions we receive from project developers.

1.0 INTRODUCTION

British Columbia's Emission Offsets Regulation was established under the authority of the *Greenhouse Gas Reduction Targets Act* ("The Act"). The Act was passed on November 29, 2007, and the Regulation came into force on December 8, 2008. The BC Ministry of Environment (MoE) has named the Regulation's legal structure as the "GGRTA Offset Initiative" and an emission offset established in accordance with the Regulation as an "Offset." Pacific Carbon Trust (PCT) is a Crown Corporation mandated to deliver quality BC-based greenhouse gas offsets to help clients meet their carbon reduction goals and to support growth of this industry in BC. PCT is the sole supplier of offsets for the British Columbia Public Sector Organization's carbon neutral commitment, as well as providing offsets to its private sector clients. The projected carbon offset demand for our clients, including British Columbia's Public Sector Organizations (PSO) is up to 1 million tonnes per year.

2.0 PACIFIC CARBON TRUST PROCUREMENT PROCESS

2.1 GETTING STARTED

If the Proponent does not have in-house expertise in developing offset projects, the services of a carbon consultant can be engaged in order to properly prepare the various documents required in the PCT procurement process. There are four key questions that a Proponent needs to ask before starting the process:

1. Is the Project Start date after November 29, 2007?
2. Are the emissions reductions or removal enhancements reflected in the British Columbia Provincial Greenhouse Gas inventory?[1]
3. Does the Proponent have clear title to the carbon attributes of the project or is it reasonable that clear title can be established?
4. The emissions reductions are **NOT** attributed to electricity (energy efficiency or generation) in areas integrated into the BC Hydro centralized electrical grid.

If there is a positive response to these four questions, the Proponent should then start examining whether or not their project would meet the seven criteria of an Offset project.

[1] http://www.env.gov.bc.ca/epd/climate/ghg-inventory/index.htm

Table 1 Seven Criteria of an Offset Project:

Eligibility criteria	Criteria Description	Provision in the Emission Offsets Regulation
Within scope	A project reduction (i.e. reduction of GHG emissions or enhancement of GHG removals) must occur from sources, sinks or reservoirs and must be reflected in BC's Greenhouse Gas inventory.[2] Only a reduction of one or more of the six main types of GHGs[3] are eligible and they must be quantified according to their carbon dioxide equivalent (CO_2e) global warming potential (GWP).	Section 3(2)(o) & Definition of CO_2e
Real	The project must result in a quantified and independently verified emission reduction which results from a specific action or decision. The project must be conducted in a manner consistent with the requirements of the Regulation.	Section 3(2)(e) & Section 3(2)(h)
Quantifiable	The Proponent must describe how emissions or removals are to be estimated or measured and the formulae to be used in estimating the annual project reduction.	Section 3(2)(n) &Section 3(2)(p)
Additional	The GHG reduction achieved through a project activity must be incremental to that which would have occurred in the absence of the project activity.	Section 3(2)(j) & Definition of "project reduction"
	There are financial, technological or other obstacles to carrying out the project.	Section 3(2)(k)
	The project start date is no earlier than November 29, 2007.	Section 3(2)(l)
Verifiable	Project Plans must be validated and Project Reports must be verified by separate third party assurance providers, pursuant to the qualifications set out under the Regulation	Sections 3(1), 5(1) and 8(a)
Counted once	A GHG reduction can only be recognized as an emission offset if it has never been employed as an offset or been used in any other GHG reduction program.	Section 8(c)
Clear ownership	The Proponent must provide an assertion that, with respect to the reduction to be achieved by carrying out the project, it has a superior claim of ownership to the reduction. As appropriate, the assertion should be supported with evidence.	Section 3(2)(q) and 8(b)

PCT plans to use a variety of competitive processes to acquire offsets. Currently the main acquisition vehicle is the continuous procurement process, which consists of a Pre-Qualification Solicitation, a Potential Qualified Suppliers List and a Final Selection Solicitation from the Potential Qualified Suppliers List. PCT may also run other processes in the future such as a standard offer or a procurement process for a specific type of Offset project.

2.2 PCT PROCUREMENT PROCESS

[2] http://www.env.gov.bc.ca/epd/climate/ghg-inventory/index.htm
[3] Carbon Dioxide, Methane, Nitrous Oxide, Hydrofluoric Carbons, Sulphur Hexafluoride and Perfluorocarbons

The following figure and table detail PCT's continual procurement process. The figure highlights key nodal points in the procurement process, and the table highlights the roles and responsibilities of the various parties to the procurement process.

Figure 1: PCT Procurement Process Flow Diagram:

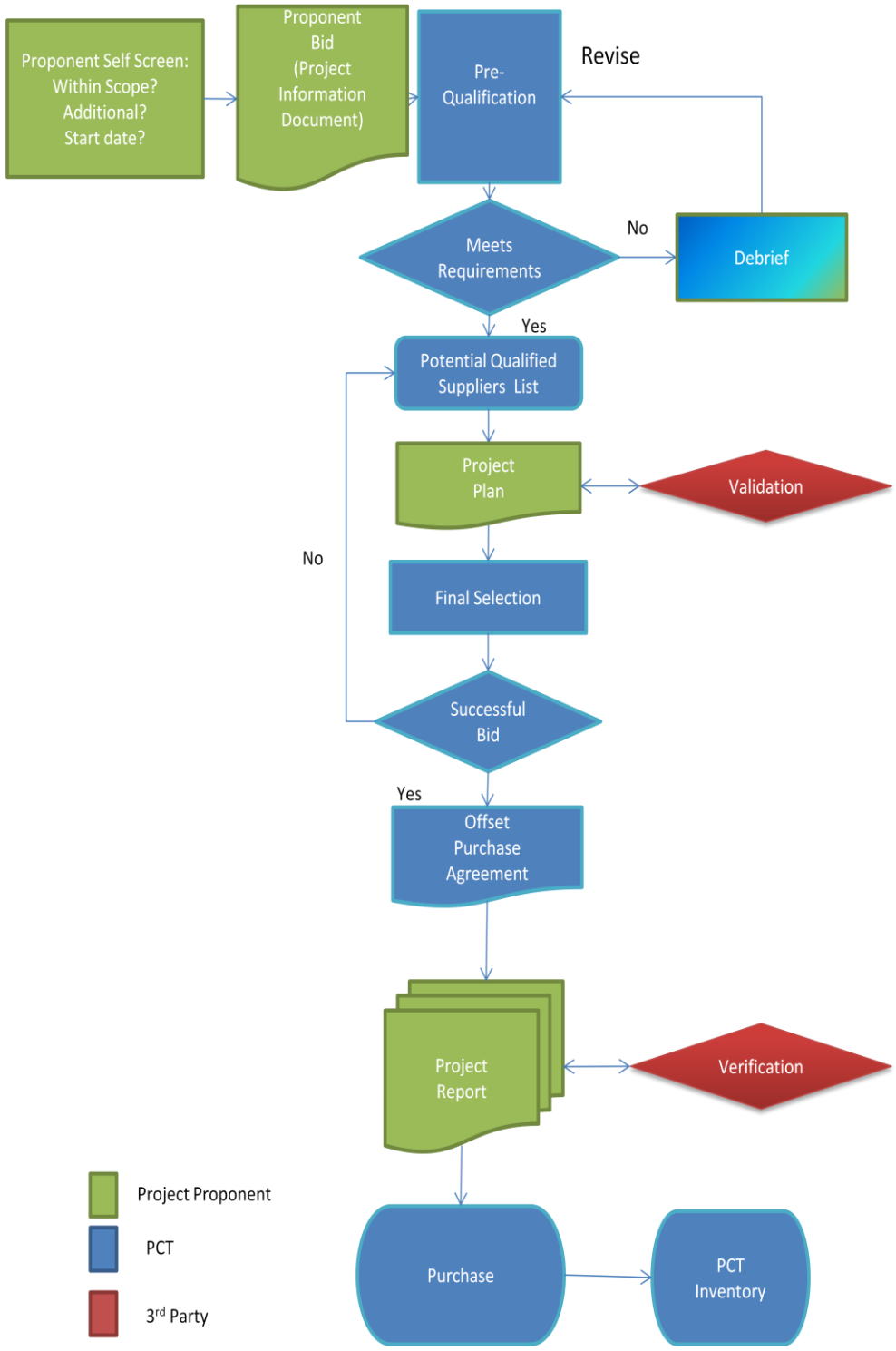


Table 2: Overview of PCT's Offset Procurement Process

PHASE	RESPONSIBILITY		
	Pacific Carbon Trust	Proponent	Third Party
Pre-Qualification Solicitation	Issue Pre-Qualification Solicitation		
		Submit Response with **Project Information Document (PID)**	
	Evaluate PID		
	Develop Potential Qualified Suppliers List		
Project Planning		Develop **Project Plan** (sent to PCT after validation)	**Validation Statement**
Competitive Bid	Issue Final Selection Solicitation	Submit Response with Validated **Project Plan**	
	Evaluate Responses		
	Sign Offset Purchase Agreement		
Project Operation & Reporting		Project Initiation & Operation	
		Data & Emissions Monitoring	
		Verified **Project Report**	**Verification Report**
Offset Recognition		Transfer title of project's emission reductions to PCT.	
	Offset Recognition &Payment		

3.0 PRE-QUALIFICATION

To initiate the procurement of offsets, Pacific Carbon Trust issues a Pre- Qualification solicitation. This process pre-qualifies Proponents' potential offset projects by ensuring the proposed projects clearly meet regulatory and other desirable requirements. This information will be required to be submitted through the Pre-Qualification solicitation in the Project Information Document. Successful proposals are placed on PCT's Qualified Suppliers List. No contractual obligations result directly from this process. The Pre-Qualification solicitation referred to in this document does not currently have an end date. If a Proponent's project(s) are not pre-qualified at this stage, a de-briefing will be provided by PCT and the Proponent will have an opportunity to resubmit to the Pre-Qualification solicitation.

3.1 PROJECT INFORMATION DOCUMENT

The Project Information Document (PID) is an integral component of this pre-qualification process. The PID provides administrative details and describes the proposed project. The PID is also evaluated by PCT to determine whether responses meet PCT's mandatory and desirable criteria.

The mandatory criteria section of the PID requires Proponents to clearly demonstrate how their proposed projects meet the offset eligibility criteria under GGRTA and the Regulation. The desirable criteria section provides information to PCT about the proposed protocol, project schedule, delivery volumes, pricing, additional benefits (i.e. social or economic).

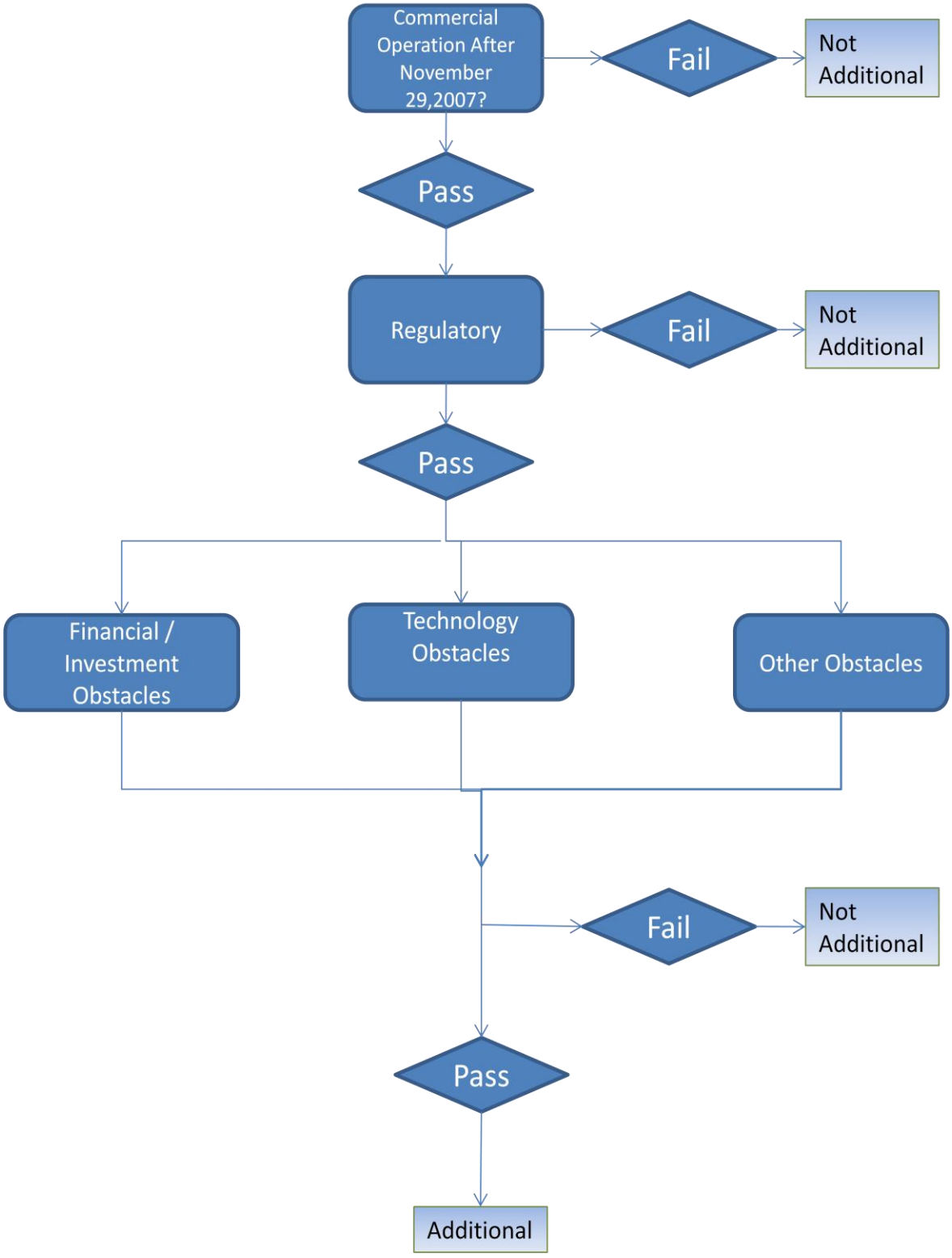
A PID Template is provided as an appendix to the Pre-Qualification solicitation document(s).

In the PID, the Proponent needs to demonstrate how the project would meet the seven regulatory criteria outlined in Table 1. For each criterion the PID provides some guidance.

3.1.1 ADDITIONALITY

To ensure the environmental integrity of the offset procurement process and that the requirements of the Regulation are met, the Proponent must demonstrate that the incentive of having project emission reductions recognized as offsets helps the project to overcome, or partially overcome, obstacles to carrying out the project. Such emission reductions are considered to be 'additional'. There are a number of evaluations that can be employed to determine additionality. The next figure details the process of evaluating additionality:

Figure 2: Additionality Flow Diagram:



Timing: The first evaluation for additionality is whether or not the project began commercial operation after November 29, 2007, the date of the passage of the *Act*. Commercial operation in this context refers to the project moving beyond the testing phase and delivering the required good or service on a regular schedule.

Regulatory: The second evaluation in determining additionality is whether or not the project activity would be already required by regulation. If the project is already required by law or regulation it would not be additional. For example after 2016, landfills in British Columbia with waste in place of 100,000 tonnes, and/or an annual waste acceptance rate of 10,000 tonnes will be required to have landfill gas capture in place. Prior to 2016 landfill gas capture beyond the threshold would qualify as a potential offset project, but after 2016 it would not. Identification and interpretation of the relevant regulatory framework and how the project would be additional to the regulatory framework are a required component of the PID.

The Proponent should also identify whether the project may be rendered non-additional via the implementation of a cap and trade system such as the Western Climate Initiative (WCI). Generally, entities included under the proposed WCI cap and trade system are entities with emissions greater than 25,000 tonnes of $C0_2e$ per year (excluding waste facilities, agriculture, forestry and, until 2015, transportation). For projects anticipated to go beyond the start of cap and trade system PCT intends to explore options with proponents regarding the conversion of offsets to allowances for projects which may be included under a cap and trade system.

Provided the first two criteria of additionality are met, financial, technological and other obstacles need to be evaluated. If the project can demonstrate that one of the three obstacles exist the project will be considered additional.

Technological: This evaluation is used where the technology employed in the project is new or not widely adopted in the sector or the region where the project is to be implemented. For example anaerobic digesters are common in Europe, but uncommon in North America; therefore it might be reasonable to assume that there would be inherent technical challenges regarding implementation of anaerobic digesters. Another example would be biomass gasification, which is still a relatively new technology. Projects that use biomass gasification could face a technological barrier to implementation.

Documentation and evidence in relation to a technological barrier would be required; for example, a description of the technology, a specification sheet regarding the technology and, if applicable, a survey of the technology's implementation in other jurisdictions.

Financial Additionality: If the sale of offset revenue removes an obstacle to the implementation of the project, then the financial additionality evaluation is met. For example, if a company requires capital projects to have a rate of return of 10 percent, and offset revenue helps the project reach this rate of return, it would be financially additional. In terms of examining the financial aspect of additionality it is important to note that funding from other government sources does not preclude the project from becoming a GGRTA offset. Provided that the government funding alone would still leave the project with a financial barrier to implementation and that the government does not claim ownership of the project reductions (clear ownership is a fundamental Offset principle), the project could still be shown to meet the test of financial additionality.

In terms of evidence, financial analysis must be transparent, showing all project financing and carbon pricing mechanisms (e.g. carbon tax, offset revenue, government funding), and how these mechanisms influence the decision regarding project implementation.

Other Obstacles: Other obstacles include project implementation challenges which cannot be captured as either technological or financial. For example, there may be a split incentive problem in implementing energy efficiency. For example, in energy efficiency for rental space, the technology may not be new or difficult to implement (such as a high efficiency furnace or water heater), and financially it would be viable except for the fact that the renters pay the utility bills and the property management corporation owns the energy infrastructure. Consequently neither party has an incentive to do the project despite financial returns and lack of technological barriers.

Compelling evidence would have to be presented that demonstrates the existence of the obstacle.

3.1.2 PROTOCOL SELECTION

The PID will also have to provide information on the protocol the Proponent intends to use in their project. A protocol is a detailed set of requirements that prescribes how to quantify and monitor emission reductions or removals for a particular type of offset project. The use of an existing protocol will greatly streamline the process of developing an offset project. A good protocol will specify the determination of the baseline, identify and select the sources sinks and reservoirs (SSRs) relevant to the project, quantification and monitoring methods, and identify reversal risk and risk mitigation strategies in carbon sequestration projects. Some protocols cover only quantification and monitoring methods (quantification protocol). A quantification protocol would need to be modified to include other relevant criteria before it can be used to guide the development of a project plan. In selecting a protocol, the Proponent should consider protocols from offset systems that have similar principles to the GGRTA Offset Initiative. Attention should also be paid to the scope and eligibility / applicability criteria specified in potential protocols to ensure that the project is in fact eligible to use the protocol. Validators will ultimate check to ensure that the project does fall within the scope of the protocol, or if it does not, that sufficient modifications to the protocol have been made by the Proponent to sufficiently broaden its scope.

This document is not designed to provide guidance in developing a project protocol.

There are two groups of protocols that could be used within the GGRTA Offset Initiative:

1. *Director's protocols*. The Director of MoE's Climate Change Branch has been given the authority to designate protocols for certain project classes. The use of protocols designated by the Director will be mandatory for projects that meet the applicability principles of those protocols.

2. *Proponent selected protocols.* Protocols that have not been designated by MoE. To adapt an existing protocol or to develop a new protocol, the Proponent will have to justify that it is suitable for developing a GGRTA Offset project.

As of the writing of this guidance document, there are no Director's protocols. Therefore an existing protocol will have to be adapted for the GGRTA Offset Initiative or the Proponent will have to develop a new protocol. It is important to note that Clean Development Mechanism (CDM) protocols do not follow ISO 14064 and must be modified to fit the British Columbia framework including the identification of Sources, Sinks and Reservoirs. As part of the validation of project plans described in Section 4.1 of this document, the Validation Body will review the justification for the selected protocol and its adaptation to determine whether it meets the requirements of the Regulation.

PCT is exploring the development of suggested protocols for a number of project types. Proponents should check the PCT website regularly for updates on this opportunity. During the Pre-Qualification Solicitation review of PIDs, PCT will look for common project types that could benefit from a common supported protocol. PCT will then publish a list of suggested protocols at www.pacificcarbontrust.ca.

4.0 FINAL SELECTION

To determine which offsets PCT will purchase, PCT will issue a Final Selection solicitation exclusively to those Proponents on the Potential Qualified Suppliers List. Projects submitted through the Final Selection solicitation must include a validated Project Plan. The review at the Final Selection solicitation stage includes the price and volume of the project as well as other criteria. PCT will review the Project Plan and Validation Statement (Validation Statement). The PCT review of the Project Plan and Validation Statement will ensure that the Validation Body is independent of the Proponent as well due diligence on the validation.

If PCT's review of the Proponent's response to the Final Selection solicitation is favorable, the Proponent and PCT will enter into negotiations regarding an Offset Purchase Agreement. If PCT does not accept the project at the Final Selection solicitation stage, the project returns to the qualified suppliers list. A Proponent on the qualified suppliers list can respond to future Final Selection solicitations without having to go through the Pre-Qualification solicitation again.

4.1 PROJECT PLAN

The project plan and the accompanying validation documents are the key component of a project Proponent's response to a RFP from Pacific Carbon Trust, (a project plan template with guidance is attached in **Error! Reference ource not found.**). It is also an important tool for a project developer in organizing the various components of an offset project and ensuring that verifiable emission reductions can be quantified for the project.

The contents of a project plan will draw heavily on the selected protocol, and in many cases it will not be necessary to include extensive justifications for approaches within a project plan if the accompanying protocol provides sufficient detail to pass validation. However, a project plan does need to be a stand-alone document from the perspective of project implementation. For instance, while project staff will not need to know every rationale behind the selection of emission sources or monitoring methods, they will need to have a clear understanding of what emission sources are relevant to the project, and the specific procedures required to implement related monitoring, data quality, and calculation procedures.

Key elements of a project plan are discussed below.

4.1.1 PRINCIPLES

In addition to meeting the requirements of PCT and the Regulation, project plans (and protocols) are expected to adhere to the following standardized GHG quantification principles[4]:

Relevance - Use data, methods, criteria and assumptions appropriate to the reported information;

Completeness - Consider all relevant information that may affect the accounting and quantification of a project reduction, and complete all requirements;

[4] More information about these principles can be found in the WRI/WBCSD GHG Project Protocol http://www.ghgprotocol.org/files/ghg_project_protocol.pdf and in ISO 14064-2

Consistency - Use data, methods, criteria, and assumptions consistent throughout the project that allow meaningful and valid comparisons with other projects or activities;

Transparency - Provide clear and sufficient information for reviewers to assess the credibility and reliability of GHG reduction claims;

Accuracy - minimize uncertainties as much as is practical, use best practices, conform to conventions specific to the project activity; and

Conservativeness - Use conservative assumptions, values, and procedures to avoid overestimating the project's greenhouse gas reduction.

4.1.2 BASELINE SELECTION

To generate verified GHG project reductions which can be purchased by PCT the Proponent must demonstrate that the offset project reduces emissions or enhances GHG removals in comparison to the emissions or the removals of an appropriately selected baseline scenario. The baseline scenario is what would most likely occur if the project is not carried out, and is often referred to as the Business As Usual (BAU) case. The difference between project and baseline emissions or removals becomes the net project emission reduction or removal enhancement.

Selection of the baseline is often one of the greatest sources of uncertainty in an emission reduction calculation. Because the baseline is by its very nature hypothetical and never actually occurs (assuming that the project is implemented), it is not possible to know with 100 percent certainty the identity of the baseline scenario.

Due to this uncertainty, rigorous justification of the selected baseline is required. In justifying the selected baseline, one of two approaches is typically taken:

- **Project specific** – multiple potential baselines must be identified and a justification for the selected baseline must be given.
- **Performance standard** – an 'industry standard' emissions intensity is justified by considering the range of approaches available to deliver the main project functions and their relative market share. Any future performance standards would have to designated by the Director of MoE's Climate Change Branch.

To ensure a meaningful comparison can be made between the project and baseline case, the baseline must be 'functionally equivalent' to the project. In other words, the baseline must be able to deliver the same types and levels of products or services as the project. An example of functional equivalence would be a biomass and natural gas fired boiler – if both deliver the same quantity and quality of heat, they are functionally equivalent. A more complex situation would be where a project provides multiple functions, such as conversion of solid waste into heat and electricity. In this case the baseline must be able to provide the three project functions of: solid waste management, heat generation, and electricity generation; likely this would be achieved by including three separate processes in the baseline, for instance: landfilling of waste, combustion of natural gas for heat, and generation of electricity by diesel generator.

That said, the protocol used as the basis for a GHG project plan should provide a justified baseline assessment for the particular project type in question, simplifying the documentation that is required in the project plan. In some cases, a protocol may select only one baseline scenario that would apply in all cases; in other cases, a protocol may allow for various baselines, depending on project-specific circumstances. In the later case, additional

documentation would need to be provided in the baseline section of the project plan to justify the final baseline selection according to any instructions provided in the protocol.

The end result must be the selection of a conservative baseline scenario that is unlikely to overestimate the level of GHG emissions (or underestimate the level of GHG removals) under the business as usual case. In cases where multiple potential baselines appear equally likely to occur even after application of a detailed barriers test or other selection process, the baseline that would result in the lower emission reductions for the project should be selected.

4.1.3 SOURCES SINKS AND RESERVOIRS (SSRS) IDENTIFICATION

To calculate emissions or removals occurring in the project and baseline scenarios, it is first necessary to identify potentially relevant emission sources, sinks and reservoirs (SSRs). Definitions of these terms can be found below.

Table 3: Definition of Source, Sink, and Reservoir

	Source	Sink	Reservoir
Definition	Any physical unit or process that releases a GHG into the atmosphere.	Any physical unit or process that removes a GHG from the atmosphere.	A physical unit or component of the biosphere, geosphere or hydrosphere with the capability to store or accumulate a GHG removed from the atmosphere by a GHG sink or a GHG captured from a GHG source.

Source: Based on ISO 14 064 standard

The selected protocol will provide a list of SSRs potentially relevant to the project and baseline, ideally identified using a systematic process that considers key activities and associated material and energy flows in the project and baseline. In the project plan, Proponents are not expected to repeat the entire SSRs identification process; instead, they are expected to confirm that SSRs identified in the protocol encompass all potentially relevant SSRs based on project-specific situations. Where the protocol does not identify some potentially relevant SSRs, these SSRs need to be identified and described in the project plan, the end goal being to demonstrate the completeness of potentially relevant SSRs to the Validation Body. A sufficiently detailed project description section in the project plan, complete with flow diagrams, etc., will assist in demonstrating the completeness of the SSR identification.

SSRs can be categorized as either:

controlled, directly or indirectly, by the Proponent; (e.g. a project boiler, source of fugitive emissions at the project site, etc)

related to the project, i.e. sources, sinks and reservoirs associated with energy or material flows into or out of a project displacement (e.g. if a biomass project uses a biomass supply that is limited, and causes BAU users of the biomass to switch to fossil fuel due to lack of supply).;

affected by the project i.e. sources, sinks and reservoirs influenced by a project through changes in market demand or supply of products or services caused by the project or through physical

displacement. (e.g. if a biomass project uses a biomass supply that is limited, and causes other non-related users of the biomass to switch to fossil fuel due to lack of supply).

Controlled and related SSRs are the most commonly identified types of SSRs for a project and baseline. Affected SSRs are often more difficult to identify and even more difficult to quantify (due to the various economic forces involved). Usually, if affected SSRs are identified, a project or protocol will be re-scoped or specific eligibility criteria / restrictions will be placed on the use of the protocol in order to avoid the affected SSR altogether, rather than attempt to quantify the impact.

It is important to remember that at the SSR identification stage in the project plan, the intent is to cast a wide net to ensure that all potential SSRs are identified, which may include some SSRs ultimately deemed not to be relevant upon further analysis (see the next section). However, it is important that SSRs be transparently identified early to avoid later questions about whether or not the relevance of those SSRs was considered. Certainly, common sense can be used to group similar SSRs or otherwise simplify the process, so long as the end goal of convincing the Validator that all relevant SSRs have been identified is achieved.

4.1.4 SELECTION OF RELEVANT SSRS

Once SSRs have been identified and categorized for both the project and baseline, a subset of SSRs that are deemed relevant to the GHG calculations must be selected. This is typically accomplished by comparing project and baseline SSRs (for instance, in a table), and assessing them against certain criteria. Again, the protocol will provide a default selection of relevant SSRs, but the project plan needs to confirm or adjust these selections based on project-specific circumstances and according to any flexibility mechanisms offered in the protocol, and present the final list of relevant SSRs for the project. In selecting relevant SSRs for quantification, the following should be considered:

- Only controlled emission sources / sinks reflected in the Provincial Greenhouse Gas Inventory and over which the Proponent exerts clear ownership are eligible to generate offsets. This does not mean, however, that related and affected SSRs are automatically irrelevant – where a project results in increases to related emissions (inside or outside BC), especially those related to on-going consumption of project inputs or management of project outputs, these should still be assessed to maintain environmental integrity and meet the requirements of the Regulation.

- Where emissions for a particular SSR are expected to be equal to an equivalent baseline SSR, then that SSR may be excluded from quantification as there is no net impact on emission reductions / removals.

- Where emissions for a particular SSR are expected to be greater for the baseline than the project (representing an emission reduction for the project), then that SSR may be conservatively excluded from quantification. For instance, if associated monitoring procedures will be too costly, it may be cost effective to ignore any associated emission reductions if they are expected to be relatively small, thereby underestimating the net project benefit. Conversely, where removals are expected to be *lower* for the baseline than the project (representing a removal enhancement for the project), then such an SSR may also be conservatively excluded. Clearly, such an approach would not be taken for larger SSRs, as these will be the basis for a project's emission reduction / removal enhancement claim.

- Most protocols tend to exclude from consideration 'one-time-only' emission sources related to the production of capital equipment, site commissioning and decommissioning, etc., as they usually represent

only a small fraction of overall emissions, are typically not controlled by the Proponent, are relatively costly to quantify with any degree of accuracy.

In identifying relevant SSRs, it is important to understand that every relevant SSR will not necessarily required detailed, costly monitoring. For some relevant SSRs that are small in magnitude, it may be entirely appropriate to estimate emissions using simple approaches, as will be discussed in the next section.

Any exclusion of SSRs from quantification must be justified, with supporting information such as sample calculations as appropriate, either in the protocol or the project plan.

When reviewing the project plan the Validation Body will assess the reasonableness of the Proponent's assertions regarding the selection of SSRs and assess whether it is reasonably likely that the estimated project reduction:

- is an accurate and conservative estimate of the GHG reduction;
- is clearly owned by the project Proponent;
- will be achieved during the validation period;
- will be achieved from controlled SSRs in BC, but takes into account increases in emissions or reductions in removals (as compared to the baseline scenario) from non-controlled SSRs.

4.1.5 QUANTIFICATION AND MEASUREMENT

The Regulation requires the Proponent to provide a description of and justify the choice of measurement and estimation methods, including the frequencies of measurement and monitoring, for each relevant SSR to be quantified. Typically, the calculation approach to be used (i.e. the equation or procedure) is described separately from the associated monitoring approaches, which would include various factors such as: units of measure, frequency of measurement, and measurement approach (e.g. type of meter, source of data, etc.).

The protocol that is used to prepare the project plan needs to have clearly described and justified methodologies for quantifying emissions from each relevant SSR. Where additional SSRs are identified by the Proponent or flexibility is offered in the protocol, a Proponent will need to select and justify appropriate methodologies in the project plan. As well, the project plan must include a description of each methodology expressed in the project-specific context so that project staff are able to perform calculations without having to refer back to a generic protocol.

The first decision to be made when selecting a method for quantifying a particular SSR is the degree to which monitored data, versus estimates and assumptions, are to be used in the calculation (monitored data is considered more accurate than estimates). This decision should be made based on various factors including:

- Expected magnitude of emissions
- Inherent uncertainty / variability of the associated data
- Cost and effort required to monitor the data
- Availability of reasonable estimates / assumptions drawn from recognized sources of information

Most methodologies will involve some level of estimation, for instance the use of standard emission factors (discussed in 4.1.6.2 Emissions Factors:) is the common practice for fuel combustion SSRs versus directly measuring combustion-related GHG emissions. However, in that case quantities of fuel consumed would normally be directly measured. In other cases, such as a landfill gas project, direct measurement of GHGs may be practical and necessary to manage associated variability and uncertainty. Where an estimates-based approach is to be used, justification must be provided for why direct measurement is not appropriate.

Following a decision on monitoring versus estimation, the specific methodology to be used must be determined. Methodologies may be sourced from a wide range of currently available guidance, including industry standard practice set out by standards bodies such as the American Society for Testing and Materials (ASTM) and the Canadian Standards Association (CSA), sector agreements, government guidelines, agreements or permits, expert opinion, and in particular other protocols such as The Climate Registry's General Reporting Protocol, or other project type-specific protocols. Where multiple potential methods are available (such as the use of different estimation models, or different types of meters), the final choice must be justified. Where the selected method includes significant uncertainty, provision must be made to ensure that the conservativeness of the final project emission reduction result is maintained (e.g. application of a discount factor, use of worst-case project assumptions, etc.).

4.1.6.1 CONSERVATIVENESS IN QUANTIFICATION METHODS AND ASSUMPTIONS

Conservativeness, one of the principles noted in Section 4.1.1, is a key tool in reducing the potential for over-estimation of emissions reductions and managing uncertainties. Below is a hypothetical example of conservativeness applied to a facility emitting methane:

> Methane (CH_4) is a greenhouse gas with a global warming potential 21 times that of carbon dioxide. Combustion of otherwise vented CH_4 would represent an emission reduction. If the baseline is venting CH_4 to the atmosphere, a component of an emission reduction project would be a methane destruction flare. The higher the destruction efficiency of the flare, the larger the emission reduction.
>
> At the facility, the gas stream is pure CH_4 and at 100 percent destruction efficiency 1,000 m^3 of CH_4 yields 1.92 tonnes of $C0_2e$. With the type of flare stack proposed for the offset project, the destruction efficiency ranges from 98 percent to 100 percent. At a 98 percent destruction efficiency 1,000 m3 of CH_4 yields 2.35 tonnes of $C0_2e$. Given the difficulties measuring the actual destruction efficiency of the flare, applying the principle of conservativeness, the Proponent would use the upper bound of 2.35 tonnes of $C0_2e$ per 1,000 m3 of CH_4 in the assessment of project emissions.
>
> A 99 percent combustion efficiency (or other intermediary value) could also be considered with justification or documentation on why it is reasonable. For example, if there was periodic testing of the combustion efficiency that showed a range between 98 percent and 100 percent with an average of 99 percent, a 99 percent destruction efficiency could be justified. If the range between 98 percent and 100 percent was based only on an engineering estimate with no supporting test data, 98 percent destruction efficiency would be a more conservative choice.
>
> It is important to note that if the flare were in the baseline instead of the project. For instance where the project involves replacing the flare with steam generating boiler to displace fossil fuel heating sources, the conservative destruction efficiency would be 100 percent, and not 98 percent. This is because selecting 100 percent would result in a lower baseline emissions value than 98 percent, thereby resulting in a lower overall estimate of net emission reductions for the project

The application of the principle of conservatism limits the exposure of a project to material misrepresentations of emissions reductions at the project verification stage. At the verification stage, if the Verifying body believes that emissions reductions may have been over-estimated by five percent or more, the project report risks being

considered to contain material errors, which would then require updating of assumptions and resubmission and verification of the project report, entailing additional time and expense on the part of the Proponent.

4.1.6.2 EMISSIONS FACTORS:

A wide variety of emission (and removal) factors are available covering various types of activities, fuel types, technology types and jurisdictions. These factors help avoid the need for each Proponent to directly monitor all emissions by having broadly applicable factors determined in a scientific and rigorous manner, and also help to ensure consistency in quantifications between different projects. Fuel combustion emission factors are most common, but factors may be specified for any kind of activity, ranging from carbon sequestration rates to cattle emissions.

The geographic applicability of emission factors for use in generating GGTRA offsets may be project specific, BC-focused, national or international, in order of decreasing preference.[5,6, 7] In determining which is appropriate, it is necessary to consider how closely the project-specific activity, fuel source, technology, etc. compares to the emission sources that were considered in generating the factor. For instance:

- for natural gas, where facilities in BC will likely receive the same quality of fuel from the centralized distribution system, a BC average factor would likely be appropriate. A Canada-wide factor might not be appropriate since it would reflect natural gas of different qualities and characteristics that might be available in other parts of the country.
- for biomass, which can change from project to project based on biomass type and source, moisture content, etc., project specific emission factors should be used
- for coal, mine specific is preferred or BC specific emissions factors based on the type of coal mined should be employed.
- for liquid fuels, refer to emissions factors in footnote 5.

It is important to note that in the calculation of the emissions implications of changes to grid electricity consumption for a GGRTA Offset, there is no carbon value assigned due to the province's commitment to move to net zero GHG emission electricity generation by 2016. The carbon value of on-grid electricity is important in the valuation of emissions from projects such as ground source or air source heat pumps, which do require electricity to operate. The zero carbon value of electricity in BC also precludes electricity energy efficiency projects and renewable on- grid generation from qualifying as emissions reductions. Note that

[5] http://www.env.gov.bc.ca/epd/climate/ghg-inventory/index.htm#6; http://www.bclaws.ca/Recon/document/freeside/--%20g%20--/greenhouse%20gas%20reduction%20targets%20act%20%20sbc%202007%20%20c.%2042/05_regulations/10_392_2008.xml#FOUND-NOTHING

[6] http://www.ec.gc.ca/pdb/GHG/inventory_report/2003_report/ann13_e.cfm#sa13_1

[7] http://www.ipcc-nggip.iges.or.jp/EFDB/main.php

changes in the consumption of off-grid electricity (e.g. from diesel generators) would still be eligible to generate offsets.

4.1.5 ACCURACY AND UNCERTAINTY

For the purpose of complying with the Regulation, Proponents are required to conduct an uncertainty assessment on the emission reduction expected to be achieved by carrying out the project. According to standard practice[8], an uncertainty assessment involves a qualitative consideration of uncertainty associated with parameters and SSR calculations and how they combine to affect the overall uncertainty of the emission reduction estimate. This is distinct from an uncertainty analysis, which would typically involve statistical error analysis and error propagation techniques that would be more appropriate (though not mandatory) in a project report once actual monitored project data are available.

Results of the uncertainty assessment should be used to refine quantification approaches and assumptions in order to ensure that the emission reduction estimates are conservative and as accurate as is practical. This may result in an iterative approach, where initial risks are addressed through adjustments to quantification approaches, which subsequently lowers the overall assessment of uncertainty.

The Regulation does not prescribe a particular approach to conducting an uncertainty assessment. However, one potential approach[9] would be to consider, for each relevant project and baseline SSR:

- the magnitude of emissions/removals – e.g. relative to other SSRs or total emission reductions, are emissions expected to be negligible, low, medium, or high?
- the likely error / uncertainty associated with the emissions estimate – e.g. highly accurate monitored activity level plus a low uncertainty emission factor gives a low associated uncertainty;

Please note that key risks to overall project activity levels unrelated to specific monitoring or calculation approaches employed should also be flagged where they could impact potential emission reductions. For instance, in the case of an anaerobic digester, the amount of biogas generated may depend on the amount of waste received in a given year, with clear potential to affect that quantity of emission reductions. While the method used to quantify emissions might not be adjusted to account for such an uncertainty, this uncertainty should still be transparently disclosed in the project plan to avoid complications at the validation stage. In the project plan template provided in Appendix C, a risk assessment subsection is provided in the up-front Project Description section.

Once the magnitude of emissions and associated uncertainty are assessed for a particular SSR, they can be qualitatively combined to arrive at the overall assessment of the risk presented to the accuracy of the final emission reduction estimate. For instance:

- For a large emission source that has very low associated uncertainty, or a very small source with high uncertainty, overall risk to the emission reduction estimate might be considered low,
- Where medium to large sources have medium to high associated uncertainty, then overall risk would be medium to high, warranting further consideration.

[8] For an example, see Section A.3.6. in the Annex to ISO 14064-2

[9] This approach draws on the 'key SSRs' approach contained in the draft Guide for Protocol Developers published by Environment Canada in August 2008.

The following table provides one potential structure for implementing this approach.

Table 4: SSR Accuracy and Uncertainty

SSR	Relative Magnitude of Emission / Removal	Associated Uncertainty	Overall Risk to Emission Reduction	Justification of Assessment	Risk Mitigation Strategies
1					
2					
3					
4					
n					
Overall Uncertainty in Emission Reduction Estimate					

4.1.7 MONITORING AND DATA QUALITY MANAGEMENT PLANS

MONITORING PLANS

As stipulated in Section 3(2)(n) of the Regulation, the Proponent must describe and define the key project data and parameters that need to be monitored and recorded (e.g. fuel consumption, working hours, etc.) in the Project Plan (see the Project Plan template in **Error! Reference source not found.**) which would normally be done as part f describing the quantification methodologies, as previously discussed in this guide.

For each parameter requiring monitoring or estimation, details regarding the units of measure, frequency of measurement, and measurement approach (e.g. type of meter, source of data, etc.) must be described and justified. Typically, this information would be presented in a formal monitoring plan that would serve as a stand-alone guide for project staff in carrying out required monitoring and data gathering. A clearly presented monitoring plan is of utmost importance in ensuring that the right data is collected during the project such that verifiable emission reductions can be demonstrated. This is a common and costly shortcoming of many projects.

Key considerations include:

Frequency of measurement: where a particular parameter varies over short timescales in an unpredictable manner, shorter measurement frequency would be warranted. In some cases, such as monitoring of key activity levels, continuous monitoring may be appropriate.

Measurement approach: various techniques, meters, equipment, etc. might be available for measuring a particular parameter. In justifying the most appropriate approach, consideration should be given to the cost,

practicality, and level of error / uncertainty of different approaches as compared to the significance of the particular SSR.

Contingency procedures: To ensure uninterrupted data gathering (and offset generation) for the project during periods of equipment breakdown, power failure, or other challenges, contingency procedures are often specified for key parameters should the primary monitoring method not be feasible for a short period of time.

DATA QUALITY MANAGEMENT PLAN

A Project Plan must also include a description of data quality assurance (QA) and quality control (QC) provisions that will be employed to ensure that a high quality of data is maintained to allow for successful verification of results.

The following definitions of QA/QC procedures are commonly accepted:

Quality Assurance refers to plans and procedures to ensure that data is as precise, repeatable and reproducible as much as possible, and that established quality control procedures are being implemented as planned (e.g. bi-monthly check to ensure that meter reading logs are being filled out correctly).

Quality Control refers to measures controlling the data collection processes and the standard of the data, e.g. procedures for sample collection and instrument calibration, data validation during manual entry of data, etc.

In designing a data quality management plan, risks to data quality need to be assessed across the entire data chain of custody (i.e. from the point of data collection through to storage, processing and ultimate generation of results for all parameters). High risk areas would then be the focus of quality control procedures designed to minimize risks.

In establishing data quality control procedures, the project's GHG information management system (IMS) can often be of service where computer-based data management tools, such as databases or spreadsheets, are used. In these cases, automated controls such as data entry forms, data validation, error checking, password protection, change logs, etc. may be used to enhance data quality. However, the Proponent must be ready to provide the Validation Body with confidence that the electronic systems employed have been designed correctly, are free from error and are operating as planned. This may be accomplished by including a description of the GHG IMS and its development in the data quality management plan (or monitoring plan), and ensuring that it is designed according to industry best practices and thoroughly tested (with accompanying documentation).

To ensure that a high standard of data management is maintained, the following general procedures are recommended:

- Schedule monitoring equipment calibration and maintenance in accordance with relevant technical specifications and current best practices;
- Storage of data and information needed to support an independent and objective verification process. All documentation should be stored and available to relevant parties in accessible electronic formats for a minimum of 10 years (or for the length of the validation period for biological sink projects), and appropriate archiving and security procedures should be in place to protect data from accidental or intentional destruction or tampering;
- Ensure the personnel involved in data management are adequately trained.

- Independent staff should be identified to carry out quality assurance procedures, such as periodic internal audits, and a senior staff member should be assigned overall responsibility for ensuring that quality assurance procedures are implemented as planned.

High quality, well-designed monitoring and data quality management plans save time and money at the verification stage of the project and help to ensure that expected emissions offsets are realized, even though they require additional upfront investment. In the worst case, a poorly designed monitoring or data quality management plan can result in a project not being able to demonstrate verifiable emission reductions.

4.1.8 REVERSAL RISK AND RISK MITIGATION:

A reversal is the release to the atmosphere of GHGs stored or carbon sequestered in a reservoir. A risk of reversal is therefore inherent in projects that involve storage or sequestration. The risk of reversal stems from unintentional events, such as earthquakes in relation to carbon capture and storage, fire and flooding in relation to grassland conversion as well as from intentional events such the reversion of grassland to crops. The release of stored GHGs or sequestered carbon to the atmosphere amounts to negating the original benefits of the project. It is therefore essential that proponents of sequestration projects take measures to manage this risk. **Error! eference source not found.**

Table 5: Examples of reversals in, land-use, and geological Carbon Capture and Storage activities

Activity	Description	Unintentional reversal	Intentional reversal
Grassland conversion	Converting cropland to grassland to increase soil content and permanent, above-ground, biomass cover	Flooding, fire	Reversion to crops
Geological carbon capture and storage (CCS)	Capturing CO_2 emissions from industrial sources and injecting them into geological formations for permanent storage	Earthquakes	Release of carbon dioxide from storage

Source: Adapted and expanded from Murray and Olander (2008).

The Proponent must assess and characterise reversal risk.

4.1.9 EVIDENCE OF OWNERSHIP

Clear, unencumbered title to the emission reduction or removal enhancement is necessary for PCT to purchase offsets. Both the Project Plan and Project Report require that the Proponent provide an assertion that it has a superior claim of ownership. In some cases, the ownership of the emission reduction is clearly and exclusively held by the Proponent (e.g. when the Proponent reduces emissions from processes it fully controls and for which it covered the total cost to implement the project). In other cases, where ownership is less clear-cut, and there may be doubt about ownership, the parties need to reach a contractual agreement to determine who has the legal right to the emission reductions.

Evidence of the legal right to ownership can take several different forms. If the emission reduction or removal enhancement is the product of a specific asset owned by the proponent, purchasing records or audited financial statements detailing the asset would suffice. In cases where ownership is less clear, such as the operation, but not ownership of an asset, or in a joint venture, a copy of the contract or clear title establishing ownership of carbon would be required. If the existing contract does not specify carbon attributes, the Proponent should work with its contractual partners to clarify carbon attributes. Proponents are solely responsible for addressing any ownership claims from other parties.

4.2 VALIDATION

The purpose of the validation process is to provide a third-party assessment of the quantification of the estimated project emission reduction or removal enhancement and a technical evaluation of the integrity of the project plan. As per Section 4 of the Regulation, a Validation Body reviews the Proponent's project plan and provides an assurance that the assertions made in the project plan are, as a whole and individually, "fair and reasonable" and that there are no material errors or omissions. The Validation Body will review the Proponent's selection of protocol, the Proponent's justification for the selection of the protocol, and whether the protocol meets the requirements of the Regulation. The Validation Body will review the project plan and whether or not the project plan conforms to the policies and procedures laid out in the Protocol. The Validation Body will also review any adjustments the Proponent may have made to an existing protocol to meet the Regulation. In order to satisfy the requirements of the Regulation, the project will have to be compliant with ISO 14064-3, unless otherwise specified by the Regulation. As part of the review, the Validation Body will evaluate the reasonableness of the assertions of additionality contained within the project plan.

4.2.1 VALIDATION ASSURANCE STATEMENT

At the validation stage it is rare that a project passes its first attempt without issues being raised. The Proponent should expect that the Validation Body will have some questions or concerns about the project plan which should be addressed prior to resubmitting the project plan for review. The Validation Body should not be expected to provide consultation services (e.g. suggesting ways of addressing issues) as they would no longer be able to offer an independent third party review of the report. The Validation Body will review and note deficiencies but it is up to the Proponent (and their consultant, if applicable) to decide how best to address any deficiencies. If successfully reviewed, the Validation Body will provide an assurance statement detailing:

- Estimated / projected GHG reductions
- Review of the appropriateness of the selected protocol.
- Conformance to the selected protocol requirements
- The selection of Sources, Sinks and Reservoirs
- Conformance to the BC Emission Offsets Regulation
- Conformance to ISO 14064-3

A sample validation assurance statement is contained within **Error! Reference source not found.**. The validation eport will contain evidence to support all claims made in the Validation Assurance Statement.

4.2.2 VALIDATION BODY

- Reviews the Project Plan to a reasonable level of assurance.
- Assesses project, baseline, and protocol selection and justification.
- Determines whether plan is fair and reasonable.
- After July 1, 2010, must be ISO 14065 accredited.
- Prior to July 1, 2010 must be a team which meets the requirements laid out in 4.2.3 Statement of Qualifications.
- Must be independent from the verification body and Proponent.
- Is not the project consultant.

4.2.3 STATEMENT OF QUALIFICATIONS

The validation statement needs to state the qualifications of the Validation Body reviewing the project. Until June 30, 2010, a Validation Body means a team that consists of (at least) one person authorized to act as an auditor of a company under section 205 of BC's Business Corporations Act and at least one "qualified professional".[10] Consequently, the Validation Body needs to include at a minimum a Chartered Accountant or Certified General Accountant, as well as a technical expert relevant to the subject such as a professional engineer, registered professional biologist or registered professional forester.

The Validation Body should have experience relevant to the project sector, for example a petroleum engineer as opposed to a registered professional forester would be more appropriate on the validation team for a project in which emissions reductions at a natural gas well-site. The Validation Body should have received training on components of ISO 14064-2&3, and demonstrated an understanding of offsets projects. Experience with projects of a similar size and scope would be preferred but is not required.

Beginning July 1, 2010 the Validation Body will have to demonstrate that they are certified via ISO 14065.

4.2.4 MATERIALITY AT VALIDATION STAGE

"Materiality" is the concept that the inclusion or exclusion of certain information items in the Project Plan could affect the interests of its intended users. In the Regulation, this information is specified as "errors, omissions and misrepresentations." Materiality is based on either the Validation Body's professional judgment or guidelines developed by the Director. As of the writing of this document, no guidelines have been issued by the Director.

[10] The Regulation defines a "qualified professional" as an individual who (a) is registered in Canada with a professional organization, is acting under that organization's code of ethics, and is subject to disciplinary action by that organization, and (b) through suitable education, experience, accreditation, and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

The Validation Body's professional judgment is based on the concepts of professional skepticism and whether the errors, omissions or misrepresentations would affect the decision making of the intended users of the information. The intended users of information in this case are PCT, the Province and other interested parties. The validation stage does not contain the 5% materiality threshold with regard to the quantification of emissions reductions or removal enhancements found in the verification stage. However careful review of processes and procedures at the project planning stage will serve to minimize the potential for a systemic over-statement of the emission reduction which would breach the 5% materiality threshold at the verification stage, potentially jeopardizing verification. Consequently the project plan should be reviewed from the perspective of whether or not cumulative uncertainties would create the potential for a 5% over-statement of the emissions reduction.

4.2.5 VALIDATION – PERIOD

Under the Regulation, a validation of a GHG reduction project expires ten years after the date of the statement of validation assurance unless otherwise indicated by the Director of Ministry of Environment's Climate Change Branch. After the validation period has elapsed the Proponent may develop a new and updated Project Plan which will address the requirements of the Regulation at that time. In the case of projects that are likely have their emissions regulated under a cap and trade system, this should be identified by the Proponent within the Project Plan, as the requirement of regulation would compromise the principle of additionality. PCT intends to negotiate with proponents with projects which may be included under a cap and trade to explore the conversion of offsets to allowances.

5.0 OFFSET PURCHASE AGREEMENT

After the validated Project Plan has been received and reviewed by PCT, PCT will evaluation all projects and select the highest scoring qualified projects and enter into an offset purchase agreement. The offset purchase agreement is a contract between PCT and the Proponent for the purchase and sale of offsets. The offset purchase agreement incorporates the contract terms and conditions in pre-Qualification and Final Election Solicitation as well as the pricing and delivery schedule for Offsets. A standardized contract will be posted with the pre-Qualification documents on PCT's website (www.pacificcarbontrust.ca).

To facilitate delivery of the offsets, the Proponent will generate a project report based on the actual performance of the project. Once a verified project report has been reviewed and accepted by PCT, the emission reduction or removal enhancement becomes an Offset which can then purchased by PCT.

6.0 PROJECT REPORT

In order for the emission reduction or removal enhancement generated by the Proponent to become an Offset, a verified project report must be submitted to PCT. The Regulation stipulates that the Project Report contain assurances that the project is in compliance with the project plan, including the project start date, inclusion within the validation period and validated project plan. The actual emission reductions and/ or removal enhancements within the project boundary must be quantified and detailed by SSR with supporting calculations.[11] The project report needs to assert a superior claim of ownership of the emissions reductions or removal enhancements with

[11] An example of supporting calculations is shown in Appendix D: Project Report Template

supporting evidence. Finally, the project report needs to assert that the project report complies with the Regulation. The completed project report then needs to be verified by an accredited Verification Body that is independent from the Validation Body, and a statement of assurance from the Verification Body must accompany the completed report. See Appendix D: Project Report Template

6.1 PERIOD COVERED

The project report is a document which is produced periodically, the timing of which is negotiated with PCT. Timing of project reports will likely be on a quarterly or annual basis influenced by many factors including economics. The period covered needs to refer to other project reports which may have been completed and demonstrate that the verification period is within the validation period.

6.2 START DATE

The project report will make an assertion regarding the start date of the project, and requires supporting evidence. The project start date is normally the start date of commercial operation for the project. Therefore the project report needs to contain evidence of the first day of commercial operation, such as evidence of the transfer of assets to the owner or sign off by the owner on commercial operation

6.3 GHG ASSERTION

The GHG assertion is the declaration made by the Proponent of the actual GHG reductions or removal enhancements from the project for the period covered by the report. The GHG assertion must be supported by appropriate facts and evidence, including calculations for each selected SSR (See **Error! Reference source not ound.**. The Verification Body will examine the chain of custody of the data, the data itself and information processing systems. The Verification Body will develop a sampling plan to ensure the integrity of the GHG assertion which may include back calculating to ensure consistency.

6.4 CLAIM OF OWNERSHIP

The Regulation requires that the Proponent assert a superior claim of ownership over the emissions reductions or removal enhancements detailed in the Project Report. The Verification Body will review documentation and evidence related to the assertion of ownership.

7.0 VERIFICATION

PCT only recognizes offsets after the emissions reductions or removal enhancements asserted in project report have been verified.[12] Verification takes place after the project has been initiated and reviews the actual emission reductions or removal enhancements that have taken place as documented in periodic project reports compared to the theoretical baseline developed in the Project Plan. The verification process is designed to ensure that the emissions reductions or removal enhancements are real and have not been over stated. Verification is undertaken by an organization which is a third party to both the Proponent and the Validation Body. A sample verification assurance statement is attached in **Error! Reference source not found.**

7.1 VERIFIER:

At the verification stage it is uncommon that a project passes the first attempt without issues being raised. The Proponent should expect that the Verification Body will have some questions or concerns about reports which could be addressed prior to resubmitting the report for review. The Verification Body should not be expected to provide consultation services (e.g. suggesting ways of addressing issues) as they would no longer be able to offer an independent 3rd party review of the project report. The Verification Body will review and note deficiencies but it is up to the Proponent (and their consultant, if applicable) to decide how best to address the deficiencies.

- Reviews the project report to a reasonable level of assurance.
- Verifies that the emissions reductions have occurred and have been adequately quantified.
- Ensures consistency with the project plan.
- After July 1, 2010, must be ISO 14065 certified.
- Prior to July 1, 2010 must meet the requirements laid out in 7.1.1 Verification - Statement of Qualifications.
- Must be independent from the Validation Body and Proponent.

7.1.1 VERIFICATION - STATEMENT OF QUALIFICATIONS

The verification statement needs to state the qualifications of the Verification Body involved in the project. Until June 30, 2010, a Verification Body means a team that consists of (at least) one person authorized to act as an auditor and at least one "qualified professional".[13] Consequently, the Verification Body needs to include a Chartered Accountant and/ or a Certified General Accountant as well as a professional with subject area expertise such as a registered professional biologist, registered professional forester or professional engineer. The members

[12] Under the Regulation there is a Transition Period, whereby if a Proponent has a validated Project Plan, PCT can recognize Offsets that are expected to have a Project Report validated by December 31, 2012 and apply them against PSO emissions for 2008,2009,2010,2011, 2012.

[13] The Regulation defines a "qualified professional" as an individual who (a) is registered in Canada with a professional organization, is acting under that organization's code of ethics, and is subject to disciplinary action by that organization, and (b) through suitable education, experience, accreditation, and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

of the Verification Body should have completed ISO 14064-3 and have demonstrated knowledge in carbon accounting. After July 1, 2010 the Verification Body will have to demonstrate that they are certified via ISO 14605.

7.2 VERIFICATION – MATERIALITY

The Verification Body has three pathways to materiality. The first is the professional judgment of the verification team. The second is guidelines issued by the Director. The third pathway established in the Regulation (section 6(3)(b)) and sets a materiality threshold that states that when an individual or aggregate affect of an error, omission or misrepresentation could have resulted in an overestimation of more than 5% in the project emission reduction or removal enhancement (subject to any guidelines issued by the Director) the project report is deemed to contain a material error. The application of the principle of conservatism in the measurement of emissions reductions or removal enhancements is an important tool in mitigating the risk of overestimation of emission reductions.

When satisfied that the project report is fair and reasonable, and does not contain material errors or omissions, the Verification Body will issue a statement of assurance to a "reasonable level of assurance" using the risk based approach to validation / verification specified in ISO 14064-3. If a material error exists, the Proponent will have to make appropriate adjustments acceptable to the Verification Body and re-submit the project report for verification. Once verified, the emission reduction or removal enhancement becomes an offset which can be purchase by PCT.

8.0 OFFSET PURCHASE

Once PCT reviews and accepts the Verified Project Report, title to the offsets is transferred from the Proponent to PCT. The PCT review at this stage examines the qualifications of the Verifier, ensures that the Verifier is a 3rd and reviews the Project Report with a similar lens as a Verifier. When PCT establishes that it has clear title to the offsets, payment is made to the Proponent. To ensure careful tracking and to avoid double counting, PCT gives each offset an identification number. The identification number, as well as the project reports and verification statements are published on PCT's website after PCT sells the offsets to a client. After offsets are delivered, the Proponent is responsible for maintaining all appropriate documents and records on file and, if requested, providing them to PCT.