

What makes a good carbon offset?

Exploring offset project value through the
Carbon Offset Evaluation Template.



By Ecotrust Canada Climate Innovation Initiative

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Carbon Offsets Explained

What are carbon offsets?

Carbon offsets are developed to evidence the achievement of project-based emissions reductions, for use in voluntary markets serving corporate and retail consumers, and for compliance markets needed to achieve emissions reductions for use by emitters covered under government-mandated systems. Projects meet different offset protocols or standards, which are validated and verified by an accredited third-party. Carbon offset projects fall into a variety of categories, including transportation, energy efficiency, fuel switch, afforestation and reforestation, biomass energy, improved forest management, recycling, landfill gas capture, and waste diversion. As government policies, laws, and regulations shift, so do the standards for what qualifies as a carbon offset. As governments strengthen industrial regulations for carbon emissions, some types of carbon offsets will no longer be additional or viable as emissions reductions that underlie an offset.

Criteria for Comparing Offsets

Though carbon offsets have been part of the sustainability landscape for over 15 years, it can be difficult to assess the quality of carbon offset credits. The assortment of voluntary and compliance offset standards, vast range in project quality and uneven tempo of interest in offsets make purchase decisions difficult for both vendors and consumers. Understanding and utilizing the criteria discussed in the following section for determining high quality offsets will allow buyers to best select and sell carbon offsets that resonate with its brand, market, and values.

The following Carbon Offset Evaluation Template functions as a tool to assess the quality of a carbon offset project based on its offset developments documents, including Project Design Document, Validation Statement, Verification paperwork and Issuance documents – along with whatever other reliable sources of information can be gathered.

The left column indicates the project Element under review. Middle column covers Description and Significance of Element. The right column indicates the Project Evaluation Standard with guidance on how to assess the project Element as being addressed as excellent, present or absent. The list of Elements in this guide is adapted from BC's Pacific Carbon Trust original Project Idea Document template, modified by Brinkman Climate and Ecotrust Canada. Ecotrust Canada Climate Innovation has developed the Description and Significance of Element, plus Project Evaluation Standard from a variety of standards & sources, and aims to present it as an up-to-date synthesis of best practice in the carbon offset space.

Rather than seeking to create a brand new metric device for rating and ranking offset quality, Ecotrust Canada has sought to draw a balance between providing assessment tools, and recognizing the subjective nature of offset quality assessment across differing standards and sectors. Standards bodies like those behind the Verified Carbon Standard, the Gold Standard, the UN Clean Development Mechanism and the various Provincial systems are qualified and tasked with delineating clear rules for eligibility and quality of projects under their system. With the task of facilitating assessment of project quality across the broad range of Canadian offsets and standard, we settled on three potential

rankings for each project Element – excellent, present and absent. The ranking of each element may be summed across the entire project to give a certain level of ranking against other projects if desired. That said, as different project Elements will be of different importance in comparison to others, and this will vary by project as well as by audience, there remains a significant element of subjectivity left up to the assessor when reviewing a project. We feel this is appropriate given the complexity, variety and diversity of offset projects.

This Carbon Offset Evaluation Template may be used as an aid to assessing offset project quality by proponents, prospective buyers, investors and other stakeholders. The guidance, though prepared with care, should be considered general, subjective and of varying relevance based on specific offset standards requirements. It is meant to assist the reader in understanding the key elements of an offset project, and as a template for deeper assessment of specific projects.

Table 1. Carbon Offset Evaluation Template Guide

Project Summary

Element	Description and Significance of Element	Project Evaluation Standard whether element quality is <i>excellent/present/absent</i>
<i>Project Name</i>	Descriptive, simple name is often effective. Compelling acronyms also help when frequently discussing the project.	Excellent = Clear, descriptive, compelling name. Present = Accurate project name. Absent = Confusing or misleading project name.
<i>Standard</i>	Issuance to a recognized carbon offset standard is perhaps the simplest, most effective way of assessing project quality. In particular, it gives an indication of “minimum quality.” Every project issued to said standard will be at least this high of quality. Presence of standard does not delineate “maximum quality.” As such, projects not issued to strong standards may actually be better than the best project issued to a strong standard, but one cannot tell, based on the presence or absence of standard. If an entity is seeking to purchase carbon offsets for voluntary sale to the public, presence of a strong standard is important. In particular, it lowers reputational risk to the vendor, who can	Excellent = Issued to an actively governed offset standard, including government compliance standards. Present = Uses a standard. Absent = No standard, including using registry rules only.

	<p>always point to the standard in any situations where quality comes into question. It also allows those without means to explore every detail and aspect of the project to have a benchmark for quality.</p> <p>A non-exhaustive list of strong, actively governed offset standards includes the Verified Carbon Standard and the American Carbon Registry. California's CCAR standard, BC's compliance system under GGIRCA and other subnational government offset standards also issue excellent offsets that are commonly used for voluntary offsets.</p>	
<i>Protocol/ Methodology</i>	<p>Offset Protocols, also known as Methodologies, are integral to development of good offset projects. They lay out what it takes to develop an eligible offset project, of a certain type, to their particular standard.</p> <p>Though by no means an exclusive metric, Protocols that have been used by multiple, quality projects, have a good chance of being successfully used on a new project in question.</p> <p>In most offset systems, Protocols need to be Validated to the offset standard in question, before they are eligible for use. This provides an additional layer of audit and quality assurance to a project.</p>	<p>Excellent = Uses validated protocol issued and/or approved by project standard body.</p> <p>Present = Uses a validated protocol.</p> <p>Absent = Uses un-validated protocol, or no protocol present.</p>
<i>Project Start</i>	<p>Project Start date is an important metric. In specific, it affects eligibility for inclusion under different standards. The incoming Canadian federal offset system will only allow projects with a Project Start date 2017 or newer. The BC offset system requires projects to have begun 2007 or more recent.</p> <p>This metric also factors in subjective assessment of quality. "Is my investment in this project necessary to make it go or keep it going?" In</p>	<p>Excellent = 2017 or more recent.</p> <p>Present = 2007 or more recent.</p> <p>Absent = 2006 or earlier.</p>

	<p>many cases, if a project began a long time ago, it can feel less compelling to support, even if the project proponents were relying on investment return that your offset purchase would help support.</p> <p>Project Evaluation Standard included in this document is based on Canadian timing points mentioned above, and may have bearing on price appreciation of offsets purchased and held, in case offsets may become eligible in the incoming Federal system. Beyond that, Start Date assessment should be considered subjective for many projects purchased for voluntary reasons.</p>	
<i>Project Lifetime/ Validation Period</i>	<p>Project Lifetime refers to maximum period over which offsets may be generated by a project. It will be made up of Validation Periods, which refer to the length of time a project may issue offsets following a successful Validation.</p> <p>Validation Period is essentially the period over which the project is assessed to be Additional, and otherwise eligible to issue offsets. At the end of the Validation Period, the project must be re-assessed (Validated) to understand whether emissions reductions from it still meet requirements to be issued as offsets. Project Lifetime and Validation Period are often prescribed by an offset standard or protocol.</p> <p>Technology projects often have 5-year Validation Periods, and Forestry projects often have 10-year Validation.</p>	<p>Excellent = Congruent with requirement standards.</p> <p>Present = Listed.</p> <p>Absent = Unclear or unstated.</p>
<i>Project Type</i>	<p>Project Type refers to the sector in which the emissions are reduced. This is important for a number of reasons. Voluntary offset buyers will often have an affinity for certain project types, with some preferring renewable energy projects, and others preferring Natural Climate Solutions such as forest conservation.</p> <p>As climate regulation expands around the world, Project Type becomes an important factor in</p>	<p>Excellent: Project acts on uncapped/unregulated emissions sources. Fits into one of the priority project categories laid out by federal government - Advanced refrigeration systems, aerobic composting of organic waste, afforestation/reforestation,</p>

	<p>eligibility to generate offsets in any given region, including Canada. Once emissions from a certain industry or sector become “capped” by a cap and trade program or other regulatory programs such as a Clean Fuel Standard, Project Types acting on that sector are no longer eligible to issue offsets. All emissions reductions in a capped sector will automatically be counted by the cap, hence, attempting to credit emissions reductions from an offset project acting in that sector would lead to double counting.</p> <p>The Canadian federal government has indicated, in their July 2020 “Carbon Pollution Pricing: Considerations for Protocol Development in the Federal Greenhouse Gas Offset System” document that they will focus on developing offset protocols from the following Project Types: Advanced refrigeration systems, aerobic composting of organic waste, afforestation/reforestation, anaerobic digestion, improved forest management, landfill methane management, soil organic carbon. This seems is a clear indication that, though there are some regions where offsets from renewable energy and other unlisted project types are eligible to be issued, that their window is closing.</p>	<p>anaerobic digestion, improved forest management, landfill methane management, soil organic carbon.</p> <p>Present = Generally recognized project type.</p> <p>Absent = Unclear or unproved project type.</p>
<i>Price</i>	<p>Price has concrete bearing on project quality and value, in relation to price dynamics of previous sales. If a project has sold offsets at \$1/tCO₂e, and is now trying to sell offsets at \$50, (or vice versa) a reasonable person would question why.</p> <p>Legitimate differences in offset pricing often occur between retail and wholesale pricing which is predictable from a business standpoint, though sometimes needs clarifying.</p>	<p>Excellent = Offset pricing appears to be congruent with project quality, past sales, and market value.</p> <p>Present = Pricing appears congruent with project quality and market value.</p> <p>Absent = Pricing is incongruent with past sales, project quality and/or market value.</p>

	Price is often seen as a proxy for offset quality, but this can be misleading. Price is an important element for consideration, but best considered in context with the other aspects of the project.	
<i>Issuance Volume</i>	Describes offset issuance in tCO2e per year, generally, as well as total cumulative issuance.	Excellent = Clear indication of all past and cumulative issuance. Issuances logical and in line with volumes estimated in Validated Project Design Document. Present = Clear indication of all past and cumulative issuance. Absent = Issuance information missing or suspect. Unexplained variance of issuances from what would be expected.

Contacts Evaluation

	Description and Significance of Element	Project Evaluation Standard whether element quality is excellent/present/absent
<i>Project proponent information</i>	Availability of contact name, company, address, telephone, email, brief description of organization, and experience developing carbon offset projects and of this type.	Excellent = Project proponent has strong experience and good reputation in developing offset projects of this type. Present = All information present. Absent = Missing information and/or lacking qualifications.
<i>Project partner information</i>	Availability of contact name, company, address, telephone, email, brief description of organization, and experience developing carbon offset projects and of this type.	Excellent = Project partner has strong experience and good reputation in developing offset projects of this type. Present = All information present.

		Absent = Missing information and/or lacking qualifications.
<i>Validation body information</i>	Availability of contact name, company, address, telephone, email, brief description of organization, and experience developing carbon offset projects and of this type, and is accredited to scope/project type.	Excellent = Validation body has strong experience, good reputation and proper scope accreditation in developing offset projects of this type. Present = All information present. Absent = Missing information and/or lacking qualifications.
<i>Verification body information</i>	Availability of contact name, company, address, telephone, email, brief description of organization, and experience developing carbon offset projects and of this type, and is accredited to scope/project type.	Excellent = Verification body has strong experience, good reputation and proper scope accreditation in developing offset projects of this type. Present = All information present. Absent = Missing information and/or lacking qualifications.

Quantification and Viability

	Description and Significance of Element	Project Evaluation Standard whether element quality is excellent/present/absent
<i>Leakage</i>	Emissions that are reduced by a project, but then displaced to another location, are considered Leakage. They generally occur when the project reduces available products, and some proportion of the reduced products are produced elsewhere, causing emissions. Projects must account for Leakage, and net-down or remove the equivalent number of emissions reductions from their credited offsets, before issuance. Some standards and protocols have prescribed leakage coefficients, and others	Excellent = Best practices in leakage assessment are followed, and assessed figure is considered conservative. Leakage is quantified and removed from total emissions reductions. Or, evidence of no leakage is achieved. Present = Leakage is quantified and removed from total emissions reductions. Or, evidence of no leakage is achieved.

	require project proponents to quantify and evidence the level of leakage.	Absent = Leakage left unquantified, or figures unsubstantiated.
Permanence	Nature based or geological sequestration shall undertake steps to ensure that GHG reductions will endure for at least 100 years. In the case that there is risk of reversal (re-emission of sequestered carbon), the project shall indicate how this risk is mitigated. Use of permanence buffer is common approach, where at-risk portion of emissions reductions are set aside, unsold, to ensure emissions reductions are not over credited. Other approaches include purchase of insurance tonnes, which will be retired (used) in case of project reversal.	Excellent = Project is permanent, or has properly mitigated risk by best-practice use of permanence buffer. Present = Project is permanent, or uses reasonable mitigation approach. Absent = Project has risks to permanence, but does not adequately mitigate.
Permanence Buffer	In the case a project's emissions reductions have a risk of impermanence, a Permanence Buffer must be secured. Quantity/percentage of project emissions reductions buffered should be sufficient to ensure conservatism of project offset issuance. Different standards and protocols have different requirements, but a buffer will often be achieved by either a) not crediting the emissions reductions at risk, b) crediting the emissions reductions at risk and only selling them as the risk goes down, or c) crediting and permanently retiring emissions reductions at risk. Some projects have sought to purchase and maintain a Permanence Buffer from a separate project, but this is generally a lower quality way to buffer a project. Some carbon offset standards, such as the Verified Carbon Standard, will collect a portion of permanence buffer tonnes from every project, and retain these in a pooled buffer, which is accessed in case a specific project's Permanence Buffer proved to be insufficient, and a higher quantity of emissions reductions were reversed.	Excellent = Permanence buffer is quantified to requirements of strong standard & protocol. Buffer of un-issued, or unsold credits from the project in question is securely maintained for life of project. Or, project emissions reductions are permanent. Present = Buffer is quantified in accordance with standard and protocol. Buffer tonnes are maintained as long as needed to buffer risk of reversal. This may allow a portion of offsets to be sold in later years of the project. Absent = Inadequate buffer held to mitigate risk of reversal. Project is insured by buffer held in offsets from a separate project.

	In this case, pooled Buffer tonnes can be accessed to make the project in question whole.	
<i>Monitoring Protocol</i>	Demonstrates how measurement/monitoring data is collected and the types of controls in place to ensure accuracy, completeness and certainty.	Excellent = Monitoring Protocol is clear, complete, and in accordance with Standards best practices. Present = Monitoring Protocol present and clearly explained. Absent = Monitoring Protocol details absent, or insufficient to ensure emissions reductions persist over time.
<i>Ownership</i>	<p>Right to the emissions reductions achieved by an offset project must be evidenced, in order to generate and issue the offsets. Emissions reductions from privately owned facilities and lands are generally simple to evidence, based on underlying ownership. Easements, leases and other contract mechanisms may also be used to separate carbon rights from underlying deed & title.</p> <p>Carbon offset projects developed on crown lands in Canada will need additional tools to secure and evidence ownership of emissions reductions achieved by their project. “Atmospheric Benefit Sharing Agreements (ABSAs)” have been negotiated for First Nations (Great Bear Rainforest Project) as well as commercial offset projects (Cheakamus Community Forest Offset Project, developed by Brinkman Climate and Ecotrust Canada.) in British Columbia, and perform this carbon rights transfer process well.</p>	Excellent = Private ownership with clear disposition of carbon rights. Or, ABSA or other legal tool executed with the responsible Provincial Crown agency. Present = Private ownership, without specific disposition of carbon rights to project. Absent = Lack of clear claim to ownership of carbon rights.

Baseline Additionality and Justification

	Description and Significance of Element	Project Evaluation Standard whether element quality is excellent/present/absent

<i>Baseline Scenario Identification</i>	<p>The baseline is realistic, probable, and a conservative representation of what would occur in the absence of the incentive of emission offsets. Business as usual.</p> <p>Project-based baselines will be determined in a project by project manner. Standardized baselines will be set by the Standard/program authority. Contemporary wisdom is that project-based baselines are more accurate, but take more time and expertise to calculate.</p> <p>Standardized baselines are easier to apply, but risk undercounting of emissions reductions for projects areas that already have high climate performance, and over-counting emissions reductions where no action will be needed to improve over the standardized baseline.</p> <p>Standardized baseline accuracy can be improved by ensuring there is high quality and fine grained inventory of emissions and real life conditions.</p>	<p>Excellent = Conservative, realistic baseline is assessed.</p> <p>Present = Baseline assessed according to Standard and Protocol.</p> <p>Absent = Baseline is unrealistic, inaccurate, or not sufficiently conservative.</p>
<i>Legal and regulatory framework</i>	<p>GHG emission reductions that are achieved as a result of meeting a legal requirement or obligation are not considered additional, as these reductions would have occurred with or without the incentive of the federal offset system. Only projects that can achieve GHG emission reductions and/or removal enhancements beyond any legal/regulatory requirements will be considered additional.</p>	<p>Excellent = Projects conforms to existing legal and regulatory framework, and all indications are that this will remain the case into the future.</p> <p>Present = Project conforms to legal and regulatory framework at time of Validation, but present and future changes would invalidate the project.</p> <p>Absent = Project already required by legal or regulatory framework in place at time of claimed emissions reductions.</p>
<i>Incentives or funding</i>	<p>In order for a project to legitimately create carbon offsets, the emissions reductions backing these offsets must not be incentivized or funded by other government programs. The incentives</p>	<p>Excellent = Project emissions reductions are not incentivized, nor funded by</p>

	<p>portion of this element includes the requirement that a project must not seek to sell emissions reductions incentivized by another program, such as a clean fuel standard program, as a carbon offset.</p>	<p>other programs or funding streams.</p> <p>Present = Project receives funding and incentives beyond carbon finance, but these incentives are provably insufficient to enable the project to occur without carbon finance.</p> <p>Absent = Project receives incentives or funding that could be expected to negate additionality, and/or take credit for the emissions reductions achieved, potentially leading to double counting.</p>
<i>Financial barriers</i>	<p>Financial additionality is a predominant and most commonly understood pathway to evidencing additionality. High quality financial justification includes cash flow analysis for the anticipated validation period with Net Present Value (NPV) or Internal Rate of Return (IRR) calculations, and provides supporting documentation such as financial agreements.</p>	<p>Excellent = Financial additionality assessed as per a higher standard protocol, including requirements for best practices assessments of NPV and IRR, with benchmarks appropriate for investment in the project region.</p> <p>Present = Financial additionality assessed as per a standard's protocol. Project doesn't appear to make financial sense without carbon offsets.</p> <p>Absent = Financial additionality not evidenced by project description.</p>
<i>Technological barriers</i>	<p>Innovative emissions reductions project types often have a technological barrier to widespread implementation. Technological additionality can be deemed where new technologies or practices have a low penetration rate within the industry or project category in question.</p>	<p>Excellent = Technological barrier is evidenced, and project is using innovative technology or practice with low penetration rate.</p>

		Present = Technological barrier present. Absent = No technological barrier exists.
<i>Social barriers</i>	Evidence of community, commercial, or legal barriers to adoption. Many legitimate carbon offset project activities actually fail the financial additionality test, as they make more economic sense than the status quo, but nonetheless are rare or non-existent in society. It is often the case that social barriers prevent things from being done a better way. As such, projects may evidence social additionality, also known as common practice additionality where evidenced.	Excellent = Clear, strong social barriers to project implementation exist. Project case presents a strong divergence from the status quo. Present = Modest social barriers to project implementation exist. Absent = No social barriers to project implementation.

Co-benefits

	Description and Significance of Element	Project Evaluation Standard whether element quality is excellent/present/absent
<i>Environmental</i>	Evidence of biodiversity, ecological preservation, improved air quality, reduced pollution, water conservation, improved soil quality, etc.	Excellent = High level of environmental benefits that would not occur without implementation of the project. Present = Some environmental benefits accrue. Absent = No demonstrated environmental benefits.
<i>Economic</i>	Sustained or increased employment, increase in capital investment benefitting affected communities, revenue sharing and/or ownership by local communities.	Excellent = High level of economic benefits that would not occur without implementation of the project. Present = Some economic benefits accrue. Absent = No demonstrated economic benefits.
<i>Social</i>	Evidence of education, knowledge transfer, capacity building, culture and heritage	Excellent = High level of social benefits that would not occur

	<p>preservation, benefits to Indigenous communities, benefits to local communities, etc.</p>	<p>without implementation of the project. Present = Some social benefits accrue. Absent = No demonstrated social benefits.</p>
<i>Co-benefit Standard</i>	<p>Project has utilized a Co-benefit Standard such as the Climate, Community and Biodiversity Standard to quantify and evidence project co-benefits.</p>	<p>Excellent = Project achieved certification to a Co-benefit Standard. Present = Project has sought certification to Co-benefit standard and has passed majority of elements, but failed to achieve full certification. Absent = No Co-benefit standard sought, or failed majority of assessed elements.</p>

Project Assessment Total

	Absent/Present/Excellent
<i>Project Summary</i>	
<i>Contacts Evaluation</i>	
<i>Quantification and Viability</i>	
<i>Baseline and Justification</i>	
<i>Risks and Mitigation</i>	
<i>Co-benefits</i>	
TOTAL	

Recommendations

Enhance online transparency: Improving the availability of carbon offset data, reporting, and methodologies is generally best practice, and may be required by federal procurement programs in

the future. It will also improve credibility and consumer trust, leading to a competitive advantage. Offset buyers have an opportunity to highlight a higher level of detail on the carbon offsets they carry, especially as they add new, high quality offsets to their portfolio.

Consider shift towards forest carbon: Policy changes such as the Clean Fuel Standard and market shifts of alternative energy prices will make fuel switch and energy efficiency projects less viable in the future. Forest carbon offset projects are now included in all carbon offsets standards around the world, demonstrate good practices, and are a critical emerging carbon market choice.

Assess social, environmental, and economic co-benefits: Evidence that demonstrates how a carbon offset project meets other “co-benefit” goals will help set apart a buyer’s portfolio of carbon offsets. Governments and voluntary consumers alike prioritize projects that communicate their values beyond the climate impact alone.

Recommended carbon offset standards: Offset buyers have an opportunity to assess a wide range of offsets for inclusion in their portfolio. We recommend that they start with assessing offsets from the leading voluntary carbon offset standards, as well as provincial and future federal compliance programs. This focuses effort on securing the highest quality offsets available. BC and Alberta’s compliance standards have delivered high quality offsets and are recommended. The Verified Carbon Standard (VCS) and American Carbon Registry (ACR) host standards with active management and oversight, that review and vet the project protocols eligible for use in their system, which makes them worthy of recommendation.

The VCS, ACR, Gold Standard and Clean Development Mechanism have an executive board, or similar body that reviews and vets the protocols eligible for use under the standard, as do the compliance standards in Canada. These standards also have an offset issuance process that adds another layer of diligence to the offset creation. Because of these differences in governance, it is much easier to judge project quality based on the achievement of Validation and Verification.