

Report 14: March 2013

AN AUDIT OF CARBON NEUTRAL GOVERNMENT

www.bcauditor.com



OFFICE OF THE
Auditor General
of British Columbia



The Honourable Bill Barisoff
Speaker of the Legislative Assembly
Province of British Columbia
Parliament Buildings
Victoria, British Columbia
V8V 1X4

Dear Sir:

I have the honour to transmit to the Legislative Assembly of British Columbia my 2012/2013 Report 14: *An Audit of Carbon Neutral Government*.

In its 2007 Speech from the Throne, the provincial government announced its goal of becoming carbon neutral by 2010. In addition to making capital investments and reducing greenhouse gases, a significant part of its plan was the purchase of carbon offsets.

This audit examined two projects which accounted for nearly 70 percent of the offsets purchased by government to achieve their claim of carbon neutrality: the Darkwoods Forest Carbon project in southeastern B.C. and the Encana Underbalanced Drilling project near Fort Nelson. However, this claim of carbon neutrality is not accurate, as neither project provided credible offsets.

John Doyle, MAcc, FCA
Auditor General
Victoria, British Columbia
March 2013

Auditor General's Comments	3
Executive Summary	5
Summary of Recommendations	7
Response from Ministry of Environment	8
Detailed Report	12
Background	12
Audit Purpose and Scope	16
Audit Conclusion	16
Key Findings and Recommendations	17
Looking Ahead	31
Appendix 1: Definitions of Additionality	32
Appendix 2: Glossary	33

CLIMATE CHANGE IS SEEN BY MANY as the major environmental issue facing us today. The evidence of its impacts (extreme storms, increased droughts, warming and cooling shifts) is a constant feature in the daily news and the lives of many. With it comes the increasing recognition from governments around the world that greenhouse gas emissions (GHGs) must be reduced to mitigate these impacts.

In its 2007 Speech from the Throne, the provincial government announced its goal of becoming carbon neutral by 2010. In addition to making capital investments and reducing GHGs, a significant part of its plan was the purchase of carbon offsets. These offsets represent a reduction or sequestration of greenhouse gas emissions that can be used to compensate for emissions from another organization, such as a public sector body. Government established the Pacific Carbon Trust (PCT), a Crown corporation, to purchase the carbon offsets needed by government to meet its carbon neutral goal.

This audit examined two projects which accounted for nearly 70 percent of the offsets purchased by government to achieve their claim of carbon neutrality: the Darkwoods Forest Carbon project in southeastern B.C. and the Encana Underbalanced Drilling project near Fort Nelson. However, this claim of carbon neutrality is not accurate, as neither project provided credible offsets.

The credibility of carbon offsets is the crux of the entire concept. Within a complex system of dense terminology and calculations is mired a common sense test: Would the project have happened in the absence of carbon finance? Regarding the projects examined, the answer is a straightforward “yes”.

The main reason for this is that offsets can only be credible in B.C. if, among other things, the revenue from their sale is the tipping point in moving forward on a project. It must be an incentive, not a subsidy, for the reduction of GHGs. Yet neither project was able to demonstrate that the potential sales of offsets were needed for the project to be implemented. Encana's project was projected to be more financially beneficial to the company than its previous practices, regardless of offset revenue, while the Darkwoods property was acquired without offsets being a critical factor in the decision. In industry terms, they would be known as ‘free riders’ – receiving revenue (\$6 million between the two) for something that would have happened anyway.

The challenge of proving the credibility of carbon offsets is not limited to B.C. For example, the United Nation's Clean Development Mechanism, the largest offset certification body in the world, recently acknowledged that it needs to enhance its own processes and outcomes. It is, in part, recognition of these concerns that led me to undertake this audit.

With all my public reports, I aim for the results to be useful to individuals and groups beyond the specific organization audited, so that British Columbians and their elected representatives can get full value for the work of my Office. This audit is no different – not only would the Pacific Carbon Trust and the Climate Action Secretariat benefit from it, but so too could the broader international carbon offset community. However, I have reasons to be concerned whether such benefits will be realized.



John Doyle, MAcc, FCA
Auditor General

Audit team:

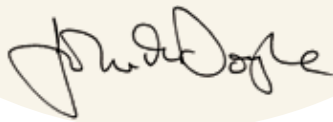
Morris Sydor,
Assistant Auditor General

Mike McStravick,
Director

Tanya Wood,
Senior Performance
Audit Associate

Of all the reports I have issued, never has one been targeted in such an overt manner by vested interests, nor has an audited organization ever broken my confidence, as did the senior managers at PCT by disclosing confidential information to carbon market developers and brokers. The orchestrated letter-writing campaign from domestic and foreign entities which followed this disclosure demanded considerable staff time, and resulted in the delay of this report. I cannot sufficiently express my surprise and disappointment that a public sector entity, with a fiduciary duty to the people of British Columbia, chose to expend its time and energy in this manner, rather than addressing the concerns raised in the audit – and that they did so with the knowledge of their governing board.

In that context, government's response is small encouragement, and my Office will continue to follow-up on their progress in implementing the recommendations in this report.



John Doyle, MAcc, FCA
Auditor General of British Columbia
March 2013

CLIMATE CHANGE, WHICH IS WIDELY attributed to rising levels of greenhouse gas (GHG) in the atmosphere as a result of fossil fuel use and land-clearing, is considered by many to be the largest threat to the global environment today. In its 2007 Throne Speech, the Province announced it would be taking an aggressive stand to reduce emissions of greenhouse gases. Bill 44, the *Greenhouse Gas Reduction Targets Act* (GGRT), called for a 33 percent reduction of GHG emissions by 2020 and 80 percent by 2050. It also required each public sector organization to become carbon neutral by 2010. The Province announced it had achieved this goal in July 2011.

While the Act called on public sector organizations — which includes all core government ministries, school districts, post-secondary institutions, Crown corporations and health authorities — to pursue actions to minimize their greenhouse gases, there are some emissions that cannot be avoided. In order to achieve carbon neutrality, public sector organizations are required to purchase eligible carbon offsets.

The Ministry of Environment's Climate Action Secretariat (CAS) directs government's policy actions in the areas of climate change and facilitates the legislated mandate to be carbon neutral. The Pacific Carbon Trust (PCT) is a Crown corporation with the mandate to purchase quality B.C.-based offsets to help the public sector meet their carbon reduction goals and to help grow B.C.'s low-carbon economy.

We carried out this audit to determine whether government achieved its objective of creating a carbon neutral public sector for 2010. We asked three questions:

1. Has government established reasonable procedures to allow public sector organizations to determine their greenhouse gas emissions and assessed whether they have taken sufficient actions to reduce those emissions?
2. Has the Pacific Carbon Trust purchased credible offsets?
3. Is government evaluating and reporting on the achievement of its objectives?

AUDIT CONCLUSION

We concluded that the provincial government has not met its objective of achieving a carbon neutral public sector:

- Government has established reasonable procedures to allow public sector organizations to determine their greenhouse gas emissions. However, government has not yet established criteria to evaluate whether government as a whole is taking sufficient actions to reduce emissions.
- Pacific Carbon Trust has not purchased credible offsets.
- Government is reporting on its efforts to reduce emissions and its progress in achieving a carbon neutral government. However, the PCT has not provided sufficient information in its reporting about the cost and quality of its purchases.

SUMMARY OF KEY FINDINGS

Government is determining greenhouse gas emissions but has not established criteria to evaluate whether reduction actions are sufficient

The *Greenhouse Gas Reduction Targets Act* requires all government organizations to “pursue actions to minimize their greenhouse gas emissions” for each calendar year, beginning in 2010. We found that while some organizations had GHG reduction targets, most did not. We also found the CAS has not established criteria to evaluate whether public sector organization’s actions to reduce emissions are sufficient.

The Pacific Carbon Trust has not purchased credible offsets

We looked at two offset projects that together accounted for approximately 70 percent of the total offsets for 2010 – the Darkwoods Forest Carbon Project, comprising 450,000 offsets and Encana’s Underbalanced Drilling Project, comprising nearly 85,000 offsets. We found that both offset projects started without showing that the value of offsets was considered to the extent that it provided the incentive for going ahead – an important consideration for demonstrating the eligibility of offset projects.

We also found that neither project had a baseline that could be supported. The Darkwoods baseline was not conservative and did not recognize the legal constraints on the project area. The Encana baseline was not supported by an appropriate test to show it was the most likely scenario.

Government and the Pacific Carbon Trust report on their achievements, but improvements could be made

We found that government reported on actions taken to reduce emissions, on the total emissions generated, the emissions required to be offset, and the offsets purchased. Although the reports highlight specific work taking place across the public service, they did not sufficiently address the risks facing public sector organizations in reducing GHG emissions, nor did the reports discuss key barriers.

We also found that while the Pacific Carbon Trust reports its offset purchases, their reporting lacked details needed to demonstrate the cost-effectiveness of the offsets purchased. The PCT is restricted to purchasing offsets generated in B.C. and had challenges demonstrating value-for-money in its purchases. For the projects examined in this audit, we found that the Pacific Carbon Trust had to pay more than market rates for both offset projects.

WE RECOMMEND THAT:

- 1** The Climate Action Secretariat work with public sector organizations to ensure each is pursuing reasonable actions to reduce emissions. As part of this, government should consider establishing public sector emission reduction targets.
- 2** The Climate Action Secretariat ensure supplementary guidance to the Emission Offsets Regulation be finalized and adhered to.
- 3** The Pacific Carbon Trust, to better manage offset purchase risks, ensure that the results of its due diligence efforts are satisfactorily analyzed, concluded and documented.
- 4** The Climate Action Secretariat provide stronger oversight to ensure that the offsets purchased on behalf of government are credible.
- 5** The Pacific Carbon Trust provide greater transparency about the cost-effectiveness of its purchases.
- 6** The Climate Action Secretariat and the Pacific Carbon Trust ensure that reporting on carbon neutrality assesses the trade-offs between reducing government emissions and offsetting those emissions through the purchase of offsets.

IN 2010, BC BECAME THE FIRST CARBON NEUTRAL GOVERNMENT

in North America. We met this achievement again in 2011 and are poised to do so for 2012 as well. The Auditor General of British Columbia has completed a performance audit of our first year as a Carbon Neutral Government and in particular two of the first offsets purchased by the Pacific Carbon Trust.

The Government appreciates the Auditor General's recommendations on how we can improve the program. We will move forward on these recommendations and have already accomplished a lot in these areas while the audit has been underway, including:

- Developed a diversified offset portfolio of 32 projects in all sectors of the economy and all regions of BC;
- Completed extensive engagements across the public sector, with offset professionals, and with academics and experts to improve our Carbon Neutral Government program;
- Eliminated reporting costs to the entire public sector;
- Implemented a new Carbon Neutral Capital program which has already provided \$10 million dollars over two years in new capital funding to the education sector;
- Created a Carbon Offset Advisory Panel to advise the Pacific Carbon Trust on the development of its offset portfolio;
- Provided greater transparency by publicly releasing the purchase price of every offset in the Pacific Carbon Trust's portfolio; and,
- Initiated a review to determine if the financial surplus we currently generate from offset purchases should be used to lower public sector costs or invested to further reduce emissions.

BC is recognized internationally as a climate change leader, and our offset system is based on international standards. BC is the chair of the Western Climate Initiative's offsets committee, and is referred to by the International Emissions Trading Association as a best practice for offsets internationally. A key feature of BC's offset program is that third party accredited professionals validate and verify projects to ensure they meet the requirements of the Emission Offsets Regulation. This approach is consistent with new offset systems now being implemented in Quebec, California, Australia, China, South Korea, and elsewhere.

BC stands by the importance of having qualified and independent experts make the professional judgement calls necessary to determine whether a project can be considered an offset, but note that the Auditor General has a difference of opinion on the judgement calls made on two offset projects. We will work with the private audit firms involved, as well as the American National Standards Institute, to ensure that BC offsets are credible.

BC is the first Carbon Neutral Government in North America. Program improvements we have made since 2010 underscore our commitment to be the best. Within that context, we will incorporate the Auditor General's recommendations into our strategic planning for carbon neutral government as noted below to further strengthen our program.

RECOMMENDATION #1:

The Climate Action Secretariat work with public sector organizations to ensure each is pursuing reasonable actions to reduce emissions. As part of this, government should consider establishing public sector emission reduction targets.

The audit examined BC's Carbon Neutral Government achievement in 2010, our first year of establishing our carbon footprint and the baseline to assess our future actions to reduce emissions.

By law, all public sector organizations are required to publicly report on their emissions as well as the actions they have taken to reduce them. The Climate Action Secretariat has worked across the public sector on these plans and has highlighted key success stories through our Carbon Neutral Government reports in 2010, 2011, and soon for 2012.

To reduce emissions across the public sector, BC has taken efforts such as :

- committed \$75 million from 2007 to 2010 to reduce emissions across the public sector
- reduced emissions from core government travel by 60%;
- required that new government buildings be built to LEED Gold or equivalent standards
- required that all new vehicle purchases first consider hybrid or clean energy vehicles;
- established agreements with BC Hydro and Fortis BC to provide financial incentives to energy projects as well as energy managers to work with public sector organizations across the province to develop plans to reduce emissions and save energy costs;
- Established a new Carbon Neutral Capital Program that has provided \$10 million towards energy efficiency projects in school districts to help them reduce GHG emissions;
- Used the fixed price of offsets of \$25/tonne as a concrete financial incentive to change capital planning and influence behaviour change across the public sector.

In support of this recommendation, the Climate Action Secretariat will take greater efforts to promote emission reductions across the public sector. As we report on BC's Carbon Neutral Government commitment over time, we will assess whether emission reductions are broadly in line with BC's provincial greenhouse gas reduction targets to ensure government's achieving appropriate results.

RECOMMENDATION #2:

The Climate Action Secretariat ensure supplementary guidance to the Emission Offsets Regulation be finalized and adhered to.

The audit has assessed two of the first offset projects purchased by the Pacific Carbon Trust. Since that time, the Climate Action Secretariat has been working with the Pacific Carbon Trust and the professional community to ensure that roles and responsibilities are clear and that the requirements of the Emission Offset Regulation are understood by all parties.

In support of this recommendation, the Climate Action Secretariat will review guidance provided to date with the Pacific Carbon Trust and the professional community and formalize the guidance and procedures for offsets.

RECOMMENDATION #3:

The Pacific Carbon Trust, to better manage offset purchase risks, ensure that the results of its due diligence efforts are satisfactorily analyzed, concluded and documented.

The Pacific Carbon Trust is a relatively new Crown corporation supporting the development of a new market in BC, and as such it recognizes the need to continuously improve, and implement processes to manage risk. With this in mind, PCT has been working with Deloitte & Touche to improve its business processes, policies and risk management. Since 2010, Pacific Carbon Trust has:

- Supported the development of provincially-approved protocols such as the Protocol for the Creation of Forest Carbon Offsets in BC.
- Implemented risk management policies and procedures including an enterprise risk management registry.
- Implemented a second risk assessment for all offset projects.
- Clarified Pacific Carbon Trust's role in relation to protocol development.
- Initiated monthly data reporting to better monitor supply chain risk.

In support of this recommendation, Pacific Carbon Trust will continue to work with Deloitte & Touche and other industry experts to implement continuous improvement. Deloitte has provided a follow-up performance review to assess PCT's implementation of previous recommendations and to suggest further areas for improvement.

RECOMMENDATION #4:

The Climate Action Secretariat provide stronger oversight to ensure that the offsets purchased on behalf of government are credible.

The Emission Offset Regulation defines BC's offset system and includes key elements to ensure offsets are credible including:

- Projects must be validated and verified by independent, accredited third parties;
- Offsets are purchased by a Crown Corporation arms-length from government and under the direction of an independent Board of Directors; and,
- A Director at the Climate Action Secretariat has statutory authorities to work with the professional community as well as set protocols to ensure the effectiveness of BC's offsets system.

The Climate Action Secretariat has been working with the Pacific Carbon Trust and the professional community to continuously improve BC's offset system. This has included increasing the number of CAS employees with ISO training in validation and verification of offsets.

In support of this recommendation, the Climate Action Secretariat will consult with the professional community and international experts and release formal procedures on how the Director's oversight role will be delivered.

RECOMMENDATION #5:

The Pacific Carbon Trust provide greater transparency about the cost-effectiveness of its purchases.

With the maturation of the BC carbon market and a portfolio of more than 30 carbon offset projects, Pacific Carbon Trust now has sufficient data to establish the range of prices it will negotiate with suppliers. The purchase price ranges correspond to the three project types in the PCT portfolio: forest sequestration, energy efficiency and fuel switching. Pacific Carbon Trust is restricted to purchase offsets within BC, and each project is evaluated on its own costs, risks and value.

- On February 15, 2013, the Pacific Carbon Trust released a pricing framework for each of the three project types in its portfolio. This will help guide potential offset project developers as they build financing for their projects.
- In addition, PCT has made all carbon offset payment and pricing information from 2009 through 2011 available on its **website**.
- Going forward, PCT will release this information on an annual basis every June in conjunction with the release of its annual carbon neutral government portfolio.

The carbon market has sufficiently matured to allow for more transparent financial reporting and a clear pricing structure ensures that releasing these details will not create any potential financial risk to B.C. taxpayers.

RECOMMENDATION #6:

The Climate Action Secretariat and the Pacific Carbon Trust ensure that reporting on carbon neutrality assess the trade-offs between reducing government emissions and offsetting those emissions through the purchase of offsets.

Since the time of the audit, BC has reported on its 2011 Carbon Neutral Government commitment and will soon report on its 2012 commitment. Since beginning this program, the Climate Action Secretariat, the Pacific Carbon Trust and the broader public sector has been able to develop a series of public information products communicating the value of Carbon Neutral Government, including both the benefits of reducing emissions and energy costs in the public sector as well as the value of the Pacific Carbon Trust's offset portfolio across BC.

The Climate Action Secretariat and the Pacific Carbon Trust have also introduced since 2010 expert committees to improve the measurement and reporting of actions taken by PSOs as well as the effectiveness of the Pacific Carbon Trust's offset portfolio.

In support of this recommendation, Government will take further actions to communicate the value of reducing public sector emissions as well as investing in emission reductions across BC.

BACKGROUND

Climate change is believed by many to be the biggest global environmental threat of this century. The provincial government has reported that British Columbia is experiencing the symptoms of climate change right now – from the pine beetle epidemic to increased forest fires and flooding – which is costing the province millions of dollars. Scientists attribute much of the climate’s warming over the last half-century to human influences — in particular the burning of fossil fuels and land-clearing. These activities have been linked to increased carbon dioxide and other greenhouse gases (GHGs) in the atmosphere.

In the 2007 Speech from the Throne, the provincial government announced it would take an aggressive stand to reduce GHG emissions. It passed the *Greenhouse Gas Reduction Targets Act* that put into law B.C.’s targets for carbon reduction: 33 percent by 2020 and 80 percent by 2050. The Act also includes an annual requirement for the public sector to achieve carbon neutrality beginning in 2010. Government sees its carbon neutral commitment as being an important way to demonstrate leadership in climate action.

This commitment covers the entire public sector, including all core government ministries, school districts, post-secondary institutions, Crown corporations and health authorities.

The Act requires each public sector organization to become **carbon neutral** beginning in 2010. To be carbon neutral, a public sector organization must:

- pursue actions to minimize its GHG emissions for each calendar year;
- determine its GHG emissions for each calendar year;
- purchase **carbon offsets** by the end of June in the following calendar year; and
- issue a Carbon Neutral Action Report each year to describe the actions taken to reduce emissions and plans to continue minimizing those emissions.

In July 2011, British Columbia announced it was the first jurisdiction in North America to achieve carbon neutrality.

CARBON NEUTRAL

The concept of achieving carbon neutrality involves purchasing carbon offsets for any emissions generated to achieve net-zero GHG emissions.

CARBON OFFSET

A **carbon offset** represents a reduction or sequestration of GHGs generated by activities – such as improved energy efficiency – that can be used to compensate for, or offset, the emissions from another source, such as a plane trip. One carbon offset represents the reduction of one tonne of carbon dioxide (or its equivalent in other GHGs).

Carbon Neutrality: Roles and Responsibilities

The Climate Action Secretariat (CAS) was established in 2007 to direct the Province's policy actions related to climate change and oversee the legislated mandate to be carbon neutral. In 2008, government then established the Pacific Carbon Trust (PCT), a Crown corporation with the mandate to purchase B.C.-based offsets to help the public sector meet its carbon reduction goals and help British Columbia develop a low-carbon economy.

Achieving carbon neutrality through this initiative is a four-step process (Exhibit 1).

EXHIBIT 1: The four steps to achieving carbon neutrality in British Columbia

MEASURE

Public sector organizations (PSOs) measure the energy consumed from their buildings, transportation fleets, equipment and paper use. Core government (ministries and agencies) also measure emissions from travel.

REDUCE

Putting a price on GHG emissions is intended to create an incentive for public sector organizations to take reduction action. Such actions may include reducing staff travel, promoting behavioural changes such as turning off computers and lights when not in use, and retrofitting buildings to make them more energy efficient. Even with best efforts to reduce, PSOs will still generate greenhouse gas (GHG) emissions.

OFFSET

Public sector organizations pay the Pacific Carbon Trust \$25 per tonne of carbon dioxide equivalents (CO₂e)* they generate. In turn, the Pacific Carbon Trust uses these funds to purchase offsets.

REPORT

Government reports annually on the results. In this way, legislators and the public learn about the outcomes achieved (both positive and negative) from reducing and offsetting GHG emissions, and government can determine what changes might be needed to improve the outcomes.

Adapted from Carbon Neutral B.C. – Transforming B.C.'s Public Sector Report

* CO₂e is a common unit of measurement used to compare the relative climate impact, or global warming potential, of the different greenhouse gases. Global warming potential is a relative scale that compares the gas in question to that of the same mass of carbon dioxide.

Ensuring the integrity and credibility of carbon offsets

Under the *Greenhouse Gas Reduction Targets Act*, carbon offset projects must meet the criteria laid out in the Emission Offsets Regulation. The regulation, based on international standards, is intended to ensure that offsets purchased by the PCT are, among other things, measureable, permanent and additional to business-as-usual.

One of the most challenging aspects of ensuring the integrity and credibility of offsets is demonstrating that the project in question is additional to business-as-usual — also referred to as demonstrating “additionality.” (See Appendix 1.)

The Emission Offsets Regulation includes several requirements designed to ensure projects demonstrate that they are additional to business-as-usual. These requirements include:

- The project has to start after November 29, 2007, the date of the passage of the Act.
- The project cannot be required by law or regulation.
- It must be demonstrated that the project faces financial, technological or other obstacles which are overcome, or partially overcome, by the incentive of being recognized as an emission offset.
- The financial implications of the baseline scenario need to be considered.

Beyond these requirements, the PCT has also indicated that proponents must have considered and included the value of developing offsets as part of the justification for going ahead with the project. When projects have already started (or have been completed) it can be difficult to demonstrate that offsets were part of the decision to implement the project. Supporting evidence in these circumstances may include the original business case, legal documents or board minutes showing how the value of offsets was factored into the decision to implement the project. If this evidence does not exist, the offset purchaser may be investing in projects that would have happened anyway. A project that would have happened anyway is not additional.

Another important characteristic of credible offsets is a conservative estimate of the quantity of greenhouse gas reductions. To do this, project developers establish an emissions baseline, which is an estimate of the scenario that would reasonably have occurred if the offset project was not undertaken. The baseline is what the project is compared against to determine the quantity of emission reductions. A baseline is always a hypothetical scenario, therefore establishing a credible baseline is critical. If the emissions baseline is overestimated, the project would claim an artificially high number of offsets, a portion of which are not real greenhouse gas reductions.

B.C. project development and approval processes

When a project is ready to be undertaken, the developer creates a project plan. This plan contains a detailed description of the proposed GHG reduction project and several baseline scenarios. The plan must also identify the selected baseline scenario, describe why it was selected and explain how the project is additional to the baseline. The plan follows a protocol — a detailed set of requirements, similar to a recipe, prescribing how emission reductions will be quantified and monitored.

They must see evidence, such as meeting minutes that show companies were factoring in the ability to earn money for emission reductions in determining the project's viability.

~ Pacific Carbon Trust CEO

The Vancouver Sun, April 21, 2012.

Under the Emission Offsets Regulation, offset projects must be validated and verified by independent, accredited third parties. The job of a validator is to ensure that the project plan follows the protocol and substantiate whether the planned GHG reductions are valid, reasonable and in compliance with B.C.'s Emission Offsets Regulation. The work of a verifier is to review the emission reductions that have taken place compared to the theoretical baseline developed in the project plan to determine the amount of offsets that have been generated. PCT relies on the work of validators and verifiers to ensure offsets are credible, only purchasing offsets from projects that have statements of assurance provided by appropriately accredited bodies.

Risks of the carbon offset market

The carbon offset market as an industry is relatively young and the concepts associated with offsets are quite complex. It involves a significant amount of scientific understanding and technical expertise. To build the integrity of this system, several international standards, such as the Verified Carbon Standard and the Clean Development Mechanism (CDM), have been developed with varying degrees of regulation and oversight. The International Organization for Standardization (ISO) has also developed offset definitions and procedures to account for GHG offset reductions. Many offset standards, including B.C.'s program, require adherence to the ISO standards. The role of the Pacific Carbon Trust is to ensure the offsets they purchase are credible.

Recent studies and audits have identified a number of risks to the assessment and quality of offsets. The CDM, established by the United Nations under the Kyoto Protocol, has developed one of the most influential carbon offset standards in the world. A 2007 report¹ looking at 93 projects registered by the CDM found that additionality was unlikely or questionable for roughly 40 percent of the projects. Furthermore, 64 percent of the projects that started before seeking offsets did not show that “the incentive from CDM was seriously considered in the decision to proceed with the project activity” even though this is a CDM requirement. Subsequently, the CDM examined a number of projects itself and temporarily suspended several organizations from validation and verification work. In 2012, the agency acknowledged that it needed to improve its standards and outcomes.

These issues are not isolated to projects approved under the CDM standards. Other offset programs have experienced similar challenges. Emission reductions that “would have happened anyway” are something the industry calls “free-riders.”

The Pacific Carbon Trust is mandated to purchase offsets from projects in British Columbia that reduce greenhouse gas emissions. This can create risks around availability and quality and makes the PCT dependent on a restricted pool of projects. Given these factors, our audit included examining whether the offsets purchased met the key requirements of the Emission Offsets Regulation and the PCT's expectations. The audit also assessed whether the PCT used appropriate due diligence in their acquisitions to ensure that they only purchased credible offsets.

¹ “Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement”. Report prepared for World Wildlife Fund, 2007.

AUDIT PURPOSE AND SCOPE

We carried out this audit to determine whether government achieved its objective of creating a carbon neutral public sector for 2010. We asked three questions:

1. Has government established reasonable procedures to allow public sector organizations to determine their greenhouse gas emissions and assessed whether they have taken sufficient actions to reduce those emissions?
2. Has the Pacific Carbon Trust purchased credible offsets?
3. Is government evaluating and reporting on the achievement of its objectives?

We developed the audit objectives using the *Greenhouse Gas Reduction Targets Act*, the Emission Offsets Regulation, Pacific Carbon Trust guidance and an understanding of the risks associated with carbon offset projects. For purposes of this audit, credible offsets are defined as offsets that are additional, conservative and real.

The audit focused on the actions of the Climate Action Secretariat and the Pacific Carbon Trust. In confirming the credibility of offsets purchased by the Pacific Carbon Trust, we also extended our work, as necessary, to obtain evidence from agencies outside of government involved with the offset projects development and approval.

We carried out our work between January and August 2012. Subsequently, we went through an extensive clearance process with a number of organizations involved in these projects. We conducted the audit in accordance with section 11(8) of the *Auditor General Act* and the standards for assurance engagements established by the Canadian Institute of Chartered Accountants.

AUDIT CONCLUSION

We concluded that the provincial government has not met its objective of achieving a carbon neutral public sector:

- Government has established reasonable procedures to allow public sector organizations to determine their greenhouse gas emissions. However, government has not yet established criteria to evaluate whether government as a whole is taking sufficient actions to reduce emissions.
- Pacific Carbon Trust has not purchased credible offsets.
- Government is reporting on its efforts to reduce emissions and its progress in achieving a carbon neutral government. However, the PCT has not provided sufficient information in its reporting about the cost and quality of its purchases.

KEY FINDINGS AND RECOMMENDATIONS

Government is determining greenhouse gas emissions but has not established criteria to evaluate whether reduction actions are sufficient

Determining emissions

In order to calculate a carbon footprint, each public sector organization needs to determine their greenhouse gas (GHG) emissions. The province's Carbon Neutral Government Regulation requires these organizations to measure specific GHG emissions related to their energy, fuel and paper consumption. Emissions are categorized into three groupings:

1. Direct emissions (referred to as scope 1) are from sources owned or controlled by the organization, such as emissions from furnaces, boilers and company vehicles.
2. Indirect emissions (scope 2), such as those arising from electricity consumption.
3. Other indirect emissions (scope 3) that are a consequence of the activities of the organization, but occur from sources not owned or controlled by it such as employee commuting, business travel, paper consumption, waste disposal and outsourced activities.

The organizations are required to determine their scope 1 and 2 emissions. The only scope 3 emissions included are those from business travel (core government only) and paper consumption.

Calculating the emissions was a significant undertaking for the organizations because they had not previously been tracking them. Each organization had to establish procedures for identifying its sources of emissions at all facilities and recording emissions data.

Our audit did not directly assess the procedures used or test emissions data, but focused on whether the Climate Action Secretariat (CAS) has provided reasonable tools and procedures for PSOs to use in calculating their emissions. We found that the CAS provides training and oversight to help ensure the data recorded is complete and accurate and there are processes in place to identify errors and omissions.

In addition to calculating emissions, public sector organizations (PSOs) must verify the accuracy of those calculations. For the 2010 reporting period, organizations certified that the emission information they submitted was correct. During this time, the Climate Action Secretariat piloted a more detailed self-certification process that included an independent verification of a sample of PSOs. The independent assessors concluded that the sample had implemented satisfactory procedures to "facilitate reasonable carbon emissions reporting". This self-verification process was expected to be rolled out to all PSOs after the conduct of our audit and should further support the reliability of the emissions data.

Actions to reduce emissions

The *Greenhouse Gas Reduction Targets Act* requires all government organizations to “pursue actions to minimize their greenhouse gas emissions” for each calendar year, beginning in 2010. It also requires these organizations to describe the actions taken by them during the year to reduce their emissions and their plans to continue doing so. See Exhibit 2 for an example of a greenhouse gas reduction initiative in the public sector.

We expected government to set clear criteria to be able to evaluate whether public sector organization’s actions to reduce emissions are sufficient. We also expected government to have clear reduction targets in place against which to evaluate reduction efforts across government.

The CAS sets out the content requirements for the Carbon Neutral Action Reports and ensures that each organization submits the report to them, which they then make available on the CAS website. There is no requirement for public sector organizations to have GHG emissions reduction targets. We reviewed a sample of reports for 2010 and found that while some organizations had GHG reduction targets, most did not.

For 2011, government reported a 6 percent increase in emissions over the previous year. This increase is contrary to government’s expectation to reduce GHG emissions. However, the total increase was reported as a relative reduction of approximately 3 percent when normalized for climate variability (i.e. a colder average temperature in 2011).

These factors suggest that without clear emission reduction objectives in place for public sector organizations, efforts to reduce emissions may be limited. Reduction targets can act as an incentive, encouraging organizations to substantially reduce their own GHG emissions. Otherwise, organizations may choose to purchase offsets to reduce their carbon footprint rather than invest in reduction activities.

WE RECOMMEND THAT:

The Climate Action Secretariat work with public sector organizations to ensure each is pursuing reasonable actions to reduce emissions. As part of this, government should consider establishing public sector emission reduction targets.

EXHIBIT 2: Northern Lights College

In 2011, Northern Lights College completed the Centre for Clean Energy and Technology. This LEED Platinum building will showcase water conservation and the latest “off the grid” technology for electricity production including solar and geothermal heating.

Source: Northern Lights College



The Pacific Carbon Trust has not purchased credible offsets

The provincial public sector's GHG emissions for 2010 were calculated at 814,149 tonnes².

In all, 128 public sector organizations provided \$18.2 million to the Pacific Carbon Trust to purchase offsets on their behalf. We expected the Pacific Carbon Trust to have purchased high-quality offsets consistent with the Emission Offsets Regulation, and their own expectations.

In assessing the credibility of the offsets purchased by the PCT, we looked at two projects that together accounted for approximately 70 percent of the total offsets for 2010.

One, the Darkwoods Forest Carbon Project, involved the purchase of 450,000 offsets.

The other, Encana's Underbalanced Drilling Project, involved the purchase of 84,671 offsets. A description of these projects is presented in Exhibit 3.

EXHIBIT 3: Two offset projects purchased by the Pacific Carbon Trust

Darkwoods Forest Carbon project

In April 2008, the Nature Conservancy of Canada (NCC) bought a 54,792-hectare property in southeastern B.C. known as Darkwoods, with the objective of managing the land for ecological conservation. Darkwoods is an area of significant habitat for at least 19 species at risk, including grizzly bear and endangered mountain caribou.

The project plan states that the property was "under immediate threat of liquidation logging" by a market-driven acquirer. This became the hypothetical baseline scenario for the project. Under this scenario, the project expected to achieve GHG emission reductions by avoiding the release of carbon associated with aggressive logging practices. The NCC claimed that carbon finance would help it overcome financial obstacles, allowing them to implement the project. The Darkwoods project was developed, validated and verified under the Verified Carbon Standard.

Source: Canadian Geographic



² Of this total, 84,367 tonnes do not require offsetting under the Carbon Neutral Government Regulation. As per the regulation, some of the emissions reported in the total do not require the purchase of offsets in order to reach carbon neutrality. This includes emissions from mobile or stationary combustion of biomass as well as emissions from school buses and BC Transit buses.

EXHIBIT 3 (CONTINUED): Two offset projects purchased by the Pacific Carbon Trust

Encana Underbalanced Drilling project

This carbon project, located near Fort Nelson, B.C., was developed by Encana Corporation and resulted in emission reductions from reduced gas flaring. The project used an existing technique known as underbalanced drilling, but with natural gas used as the drilling lubricant instead of nitrogen. This natural gas was conserved through on-site recovery and capture, and then streamed directly into a pipeline, eliminating the need for flaring. Encana claimed that carbon finance would help overcome technological obstacles, allowing them to implement the project. The Encana project was developed under the Pacific Carbon Trust Standard, meaning it was validated and verified against the requirements of the Emission Offsets Regulation.



Source: Encana Corporation

Project eligibility concerns

We expected the Pacific Carbon Trust to ensure it only purchased offsets that met the additionality criteria of the Emission Offsets Regulation (EOR) and the PCT's expectations. This includes ensuring that the proponents considered and included the value of developing offsets as part of the justification for going ahead with the project. This is a stated expectation of the PCT and is consistent with EOR and good practice. Carbon experts also confirmed this to be an important expectation.

We found that both projects started without showing that the value of offsets was considered to the extent that it provided the incentive for going ahead. Offsets are supposed to be the tipping point to make a project happen.

- The Nature Conservancy of Canada (NCC) decided to purchase the Darkwoods property in 2006, but the transaction did not close until April 1, 2008 (Exhibit 4). For the NCC, offsets were not a critical factor in the decision to acquire the Darkwoods property. A carbon offsets feasibility study was not completed until January 2009. The NCC did not approach the Pacific Carbon Trust about offsets until late 2009.
- In the case of Encana's underbalanced drilling project, the company started the project in 2008 and had already successfully completed many wells by the time they met with the Pacific Carbon Trust in August 2009 (Exhibit 4). We found that carbon credits were not part of the decision to proceed with the project.

The project baselines were not properly determined

Even if the projects had considered the value of offsets, they would still be problematic because of their flawed baselines. The baseline scenario is a hypothetical representation of what would reasonably be expected to have occurred in the project's absence. Section 3(2)(j) of the Emission Offsets Regulation requires baselines to result in a conservative estimate of the GHG reduction by considering legal requirements and any other factors needed to support the selected baseline. We expected projects purchased by the Pacific Carbon Trust to demonstrate that the baseline met these requirements. We found that both projects had problems satisfying these baseline requirements.

Neither project had a baseline scenario that could be supported. The Darkwoods baseline was not conservative and did not recognize the legal constraints on the project area. The Encana baseline was not supported by an appropriate test to show it was the most likely scenario.

Darkwoods baseline determination

We found the baseline assumptions in this project were not conservative and resulted in a baseline far above what would likely have occurred had common practice been reasonably established. We also found that the NCC's potential harvesting activities are significantly constrained by a legal obligation to conserve the land, thereby limiting the baseline options available to the NCC.

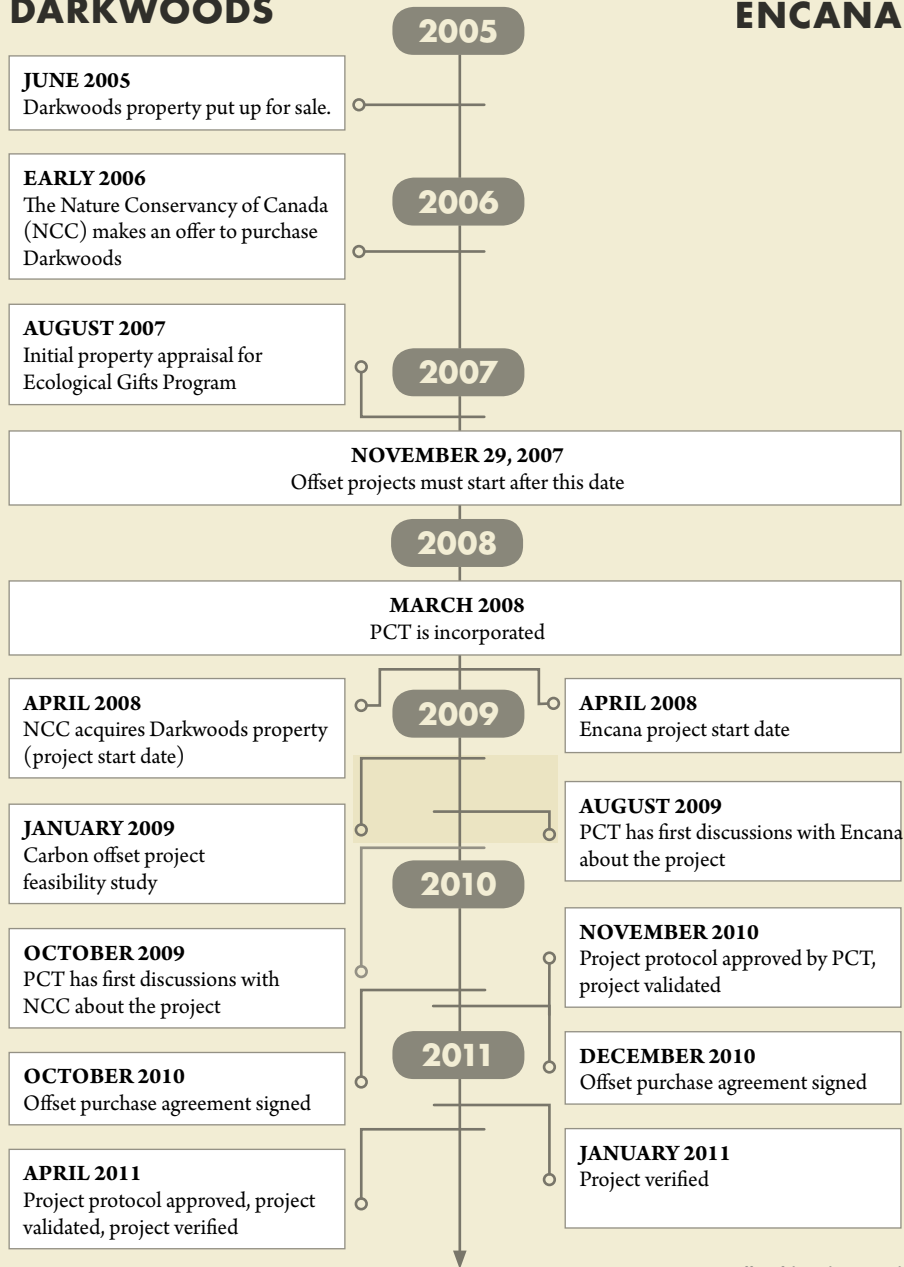
EXHIBIT 4: Darkwoods and Encana timeline of activities

The Darkwoods and Encana projects were underway before seeking offset credits.

NCC = NATURE CONSERVANCY OF CANADA; PCT = PACIFIC CARBON TRUST

DARKWOODS

ENCANA



Source: Office of the Auditor General

Baseline assumptions not conservative

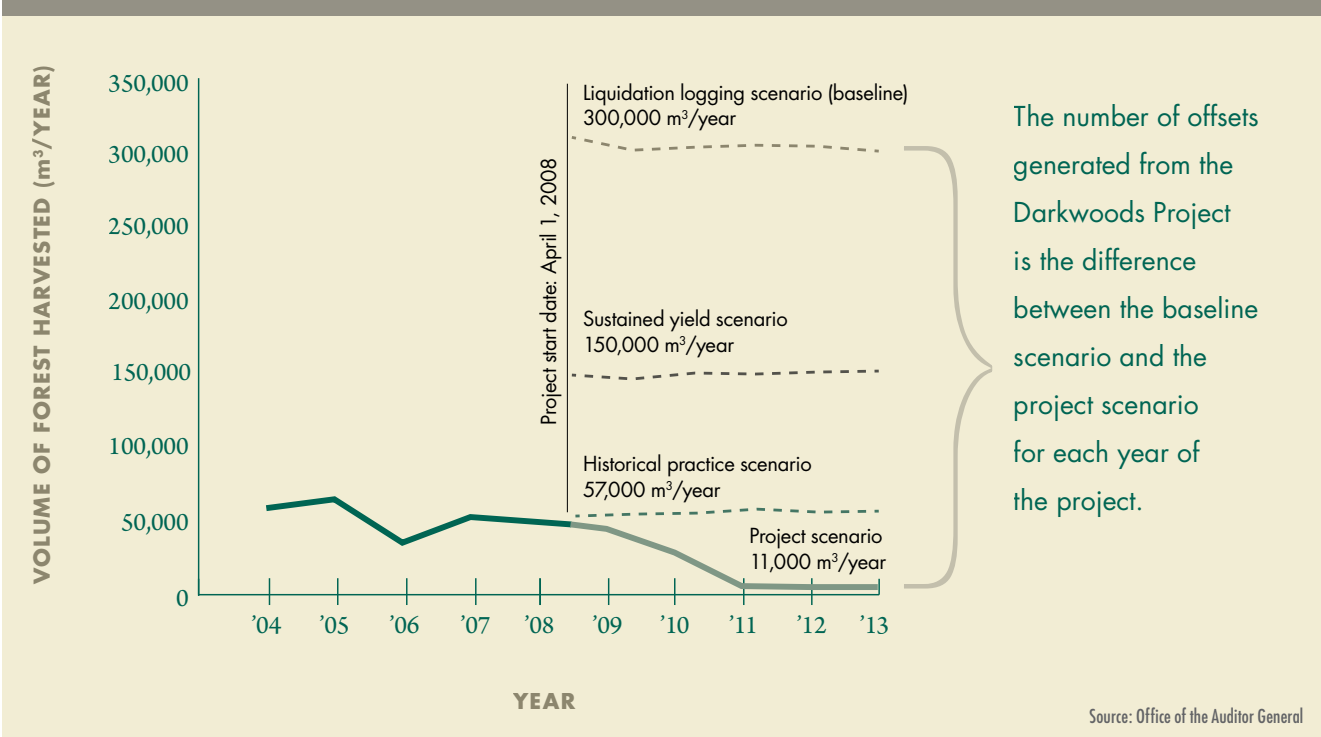
The Darkwoods project was designed under the assumption that if the Nature Conservancy of Canada had not purchased the property, the most likely owner would have been a liquidation harvester, who would purchase the property to generate the “maximum financial return” “with little regard for environmental protections.” Following this scenario, the project expected to achieve GHG emission reductions by avoiding the release of carbon associated with aggressive logging practices. Other alternative baselines presented in the project plan included a sustained yield harvesting scenario, and the previous owner’s historical practice which involved limited annual harvesting.

The selected baseline (liquidation logging), as well as the other options available to the project developer, is shown in Exhibit 5.



Darkwoods Photo: Bruce Kirby

EXHIBIT 5: Comparison of harvesting volumes in potential baseline scenarios developed for the Darkwoods project



Source: Office of the Auditor General

However, we found limited support for a “liquidation logger” scenario: no such companies bid on the property, and it was widely reported at the time of sale that the owner’s preference was to sell to a buyer who would appreciate or maintain the area’s forest and wildlife values. Our assessment is that a logging company, certified to one of three internationally recognized forest certifications, would be the most likely alternative purchaser of the Darkwoods property. Most logging companies in the province are certified and sawmills in this region are also certified. Such certification requires forestry practices to reflect key values (see sidebar). Forest companies that do not preserve environmentally sensitive areas can face public pressure to do so. As such, an alternative owner would likely have followed sustainable forestry practices as opposed to the unsustainable practices assumed in the selected baseline.

The project assumed a “liquidation logger” would not follow the requirements of the *Private Managed Forest Land Act* (PMFLA), even though the project plan identified that most private forest land owners in the area followed these requirements. This is common practice in the area, as significant tax benefits are gained by registering a forest under the Act. The project documentation provided no explanation for omitting such registration from the baseline calculation. By not registering under the PMFLA, a liquidation owner would not follow the minimum forest management objectives for private land (e.g. for soil conservation, protection of water quality, fish habitat and critical wildlife habitat, and reforestation). The baseline assumed that areas classified as environmentally protected by the previous owner such as sensitive habitat for mountain caribou and other at-risk species, would be logged, and not replanted by a liquidation owner.

We found that aggressive assumptions around the harvesting practices under the baseline scenario resulted in 30 percent more harvestable wood than was projected in the timber appraisal used for establishing the property purchase price. This resulted in overestimating the emission reductions and in overstating the carbon offsets generated by the project.

FORESTRY PRACTICES IN THE KOOTENAY REGION

The Sustainable Forestry Initiative (SFI) is a globally recognized standard that covers key values such as protection of biodiversity, species-at-risk, wildlife habitat and water quality, as well as sustainable harvest levels and prompt regeneration. For example, one company located in Creston, B.C., issued a guide for timber producers encouraging adherence to the SFI program and including the statement that its mill will not purchase timber from unknown sources or producers whose practices are illegal or do not meet regulations for private land management.



Darkwoods Photo: Bruce Kirby

The sustained yield scenario considered by the project was the closest to following the requirements of the PMFLA but was not selected as the most likely option. While this scenario would have resulted in significantly lower harvest levels and fewer offsets (see Exhibit 5), even this scenario is not the most likely baseline. Baselines are required to meet any legal obligations on the project area. For the Darkwoods project, significant legal constraints on harvesting were not accounted for in the project plan.

The Nature Conservancy of Canada had a legal obligation to conserve the property

The Nature Conservancy of Canada acquired the Darkwoods property using a Natural Areas Conservation Program grant of \$25 million and a donation of a major portion of the property through the federal **Ecological Gifts Program** (see sidebar). These two sources accounted for the majority of the property's purchase price of approximately \$100 million. Under the Ecological Gifts Program, the Nature Conservancy of Canada becomes legally obligated at the time of purchase to manage these lands for conservation.

To stay within their legal obligations, the NCC is restricted to a minimal harvest required to maintain ecological values and the health of the forest. With such a minimal amount of harvesting available to the NCC, the project baseline should have been no greater than the historical practice.

Encana baseline determination

Encana developed its own protocol for the proposed **underbalanced drilling** project. This protocol was approved by the Pacific Carbon Trust, although the EOR does not give such approval authority to the PCT. We found that the protocol included an inappropriate process to determine the baseline. In the protocol, the baseline is defined as historical practice – gas flaring. This approach is inconsistent with EOR and ISO expectations for establishing a baseline, which require a test to select the baseline from several potential scenarios. This limitation allowed Encana to avoid conducting a financial test to determine whether the project was more financially attractive than the baseline scenario.

THE ECOLOGICAL GIFTS PROGRAM

This federal government program allows Canadians who own ecologically sensitive land to ensure its protection through tax benefits to land owners who donate land to a qualified recipient. For an "ecogift" to meet the requirements of the program, the federal Environment Minister must certify that the land is ecologically sensitive, approve the recipient to receive the gift, and certify the fair market value of the donation. The donor receives a tax receipt for the full value of the ecogift. The land recipient must then ensure that the land's biodiversity and environmental heritage are conserved in perpetuity.

UNDERBALANCED DRILLING is a procedure used to drill gas wells where the pressure in the wellbore is kept lower than the pressure in the formation being drilled. As the well is being drilled, formation gas flows into the wellbore and up to the surface. Historically, this gas has been flared, as venting has more serious atmospheric impacts. Commercially available technology allows this gas to be captured and sold into the pipeline.

When a carbon offset project involves revenue, good practice typically requires a financial analysis test to show that the proposed project is not the most attractive course of action.

We expected Encana to have considered the financial benefits of this project, to ensure this project could not be considered business-as-usual.



Encana Photo: Encana Corporation

Instead, we found that Encana did not assess the financial implications of the project. Based on the preliminary information provided to the PCT on the project costs and gas recovery levels, the project was projected to be more economical than the historical practice of flaring the gas. The project had the potential to provide a significant financial return on the incremental project costs. Actual results confirm the projections: the company providing the technology reported that the gas conserved over the course of the project had a market value of more than \$7 million. This is substantially greater than the projected incremental cost of the technology. Gas valued at more than \$3 million was still flared because the compressors employed had insufficient capacity for the stronger gas flows.

Despite the lack of financial information, the Pacific Carbon Trust purchased offsets from the Encana project. As the only offset purchaser of this project, the PCT could have directed Encana to use specific tests. The PCT is able to select projects based on their own requirements (as long as these do not contradict the requirements of the B.C. Emission Offsets Regulation). Knowing that revenues were a highly relevant factor in this proposal, the PCT should have pursued a financial analysis by Encana.

The Climate Action Secretariat supports the PCT in creating their own purchase requirements, and the CAS has indicated that offsets should not pay companies to do what they had a solid business case to do already. Encana's project does not pass this test.

Why this happened

The intentions of the Emission Offsets Regulation have not been clearly defined

The Emission Offsets Regulation (EOR) provides the regulatory framework for offset projects but is designed to not be overly prescriptive. Government has intentionally placed reliance on the expertise of third parties to interpret the regulation during their validation and verification work.

These third parties are required to assess the projects against the regulation and applicable ISO standards—both include language that allows for considerable flexibility and judgment.

While professional judgment is necessary to evaluate these projects, government’s intention was that guidance would be created to supplement the regulation and provide clarity where appropriate. For example, the EOR does not provide any requirements regarding quantification protocols that are developed by proponents. As there were no “government approved” protocols when the regulation was created, proponents created their own protocol or adapted a protocol developed under a different standard.

We expected to find clear guidance for proponents in key risk areas such as additionality and protocol development. Instead, we found that while the PCT had developed “draft” guidance documents, proponents are not required to adhere to this guidance, and it does not sufficiently address key risk areas such as those identified in this audit. We also found that there is currently limited guidance for protocol development and approval. Over the course of the audit, the PCT acknowledged that gaps exist between EOR and a fully functioning greenhouse gas program regarding protocol development and approval. The PCT has acknowledged that defining these protocol requirements will increase the credibility of the program, streamline the process of approving projects, expand the scope of the GHG program, provide greater certainty for project developers, and outline criteria for validation bodies to validate against.

WE RECOMMEND THAT:

The Climate Action Secretariat ensure supplementary guidance to the Emission Offsets Regulation be finalized and adhered to.

Due diligence concerns were not satisfactorily addressed

The carbon offset market has been referred to in literature as lacking the critical competitive check found in well-functioning markets, in which the interests of buyer and seller are naturally balanced against each other. In offset markets, both the buyer and seller benefit from maximizing the number of offsets a project generates:

- Sellers have a financial incentive to overestimate the baseline scenario—artificially inflating emission credits to increase profitability.
- Buyers seeking offsets as part of a carbon reduction requirement are inclined to focus more on the volume of available offsets rather than their quality.

This was particularly relevant for the Darkwoods project as one of the project developers had a contract with the NCC to purchase offsets from the project it was helping to develop. The project developer also helped develop the protocol for the Darkwoods project. Similarly, the validator was involved in the initial feasibility study, protocol approval and project validation. In such circumstances, potential purchasers should exercise enhanced due diligence and risk management.

Because commercial exploitation was the counterfactual used to justify the Nature Conservancy of Canada (NCC) carbon offsets, offsets were subsequently sold to non-arms-length buyers, and numbers of carbon offsets are highly sensitive to assumptions, one can only conclude that the carbon offsets generated by this (and probably many other) forest conservation projects are simply spurious.

Source: G. Cornelis van Kooten, Tim Bogle, Frans P. de Vries, “Rent Seeking and the Smoke and Mirrors Game in the Creation of Forest Sector Carbon Credits: An example from British Columbia,” 2012, p 1.

The two projects, Darkwoods and Encana, were among the first with which the Pacific Carbon Trust was involved. For assistance with these projects, the trust hired consultants to review certain key aspects of the projects and identify issues related to their credibility. This due diligence appeared to be a valuable component of the review, bringing several significant issues to the trust's attention.

We found the concerns raised by these consultants to be valid, but noted that many were not satisfactorily addressed by the PCT before purchasing the offsets. The PCT's due diligence lacked the necessary rigour. Overall, the Pacific Carbon Trust was not a prudent purchaser.

For example, due diligence comments on the Darkwoods project included an assessment that the baseline represented "rape and pillage" of the forest, rating a "3 out of 10 for conservativeness." It also stated that "even the most aggressive forest practices would not be able to log every hectare identified as operable on the landbase" – yet no changes were made to address these concerns. As described in an earlier section, we had similar concerns with the realism of the baseline.

The Pacific Carbon Trust's guidance material recognizes that skepticism and common sense should be used when evaluating a baseline. The guidance also acknowledges that "rules-based approaches can encourage 'gamesmanship' with the interpretation of the rules."

We concluded that the problems in these projects were primarily rooted in a lack of skepticism and common sense being applied by the PCT. The Pacific Carbon Trust's main concern seemed to be with justifying that rules were adhered to, and less in assessing whether the results made sense.

WE RECOMMEND THAT:

The Pacific Carbon Trust, to better manage offset purchase risks, ensure that the results of its due diligence efforts are satisfactorily analyzed, concluded and documented.

The Climate Action Secretariat did not provide sufficient oversight

The Pacific Carbon Trust's mandate to build the carbon industry in B.C. creates a tension with its mandate to purchase credible offsets. The governance arrangements applied to purchase offsets currently run counter to good practice. The Climate Action Secretariat (CAS) is the agency designated by legislation to regulate offsets. We found that, because it has not considered the efficacy of the credits purchased by the PCT, the CAS has effectively delegated this work to the PCT. Consequently, the PCT acts as a regulator and buyer in the market place. We found that the PCT has not been diligent in its purchase of credible offsets. The Climate Action Secretariat should be more active in developing guidance and assessing the PCT's offset purchases to ensure they meet government's intention of achieving carbon neutrality.

WE RECOMMEND THAT:

The Climate Action Secretariat provide stronger oversight to ensure that the offsets purchased on behalf of government are credible.

Government and the Pacific Carbon Trust report on their achievements, but improvements could be made

Public sector organizations are required to report to the Climate Action Secretariat on their GHG emissions as well as the actions they have taken to minimize those emissions. The organizations fulfill this requirement by submitting a Carbon Neutral Action Report. From these, the Climate Action Secretariat summarizes government's overall performance in a report titled *Carbon Neutral B.C.* The first of these reports was issued in July 2011. It was the first year the provincial government was required to measure and report its GHG emissions, and it established 2010 as a baseline year. In July 2012, government reported its 2011 GHG emissions.

We expected government to be evaluating and reporting on the achievement of its objective of carbon neutrality. We also expected this reporting to include the costs and benefits of reducing emissions and of offsetting the remainder, providing government with an opportunity to evaluate its success towards achieving the outcome of carbon neutrality.

Requiring the province's public sector organizations to identify, quantify and report their emissions was a significant challenge for organizations. Before this, GHG consumption was not something the public sector calculated. Nevertheless, we found that government reported on actions taken to reduce emissions, as well as reporting on the total emissions generated, the emissions required to be offset and the offsets purchased. The emissions for 2010 and 2011 are presented in Exhibit 6. The total increase was reported as a relative reduction of approximately 3 percent when normalized for climate variability (i.e. a colder average temperature in 2011).

EXHIBIT 6: Greenhouse gas emissions in British Columbia's public sector, 2010 and 2011

ORGANIZATION	2010 EMISSIONS (TONNES)	2011 EMISSIONS (TONNES)	INCREASE
Core government	92,951	96,678	4%
Crown corporations	92,245	96,817	5%
Health authorities	217,135	231,472	7%
Post-secondary	150,779	159,207	6%
School districts	176,672	191,335	8%
Public sector total	729,782	775,509	6%

Source: *Carbon Neutral B.C.* reports

Although the reports highlight specific work taking place across the public service, they did not sufficiently address the risks facing public sector organizations in their continued work towards reducing GHG emissions, nor did the reports discuss key barriers to continued improvement.

We also found that while the Pacific Carbon Trust did report its offset portfolio (including the name of the project, validator and verifier), the reporting lacked details needed to demonstrate the cost-effectiveness of the offsets purchased.

Reporting on value-for-money

An important aspect of transparent reporting for the Pacific Carbon Trust is to demonstrate how funds spent on behalf of the public sector reflect good value-for-money. The Pacific Carbon Trust recognizes that this is an important part of managing public sector costs and identifies “providing cost-effective offsets” as a way to achieve its mandate. In this regard, we noted that the Pacific Carbon Trust’s annual reporting only states that it pays, on average, less than \$25 per tonne (a target tied to the current price that public sector clients pay to offset their emissions). This measurement is too broad to be of any value – the average cost could be anywhere from \$1 to \$24, which represent very different views of the PCT’s purchasing practices. Greater transparency should be provided, as well as an analysis or comparison to the wider marketplace.

The PCT is restricted to purchasing offsets generated in B.C. It had challenges demonstrating value-for-money in its purchases. For the projects examined in this audit, we found that the Pacific Carbon Trust had to pay more than market rates for both.

Darkwoods offsets costs

The Pacific Carbon Trust paid \$4.5 million for 450,000 Darkwoods offsets (\$10 per offset), while one of the project’s developers paid \$1.5 million for 250,000 offsets (\$6 per offset). The Pacific Carbon Trust suggested it paid more because the project developer would have negotiated a lower price. This type of arrangement highlights the conflicts of interest inherent in carbon markets as a result of financial incentives for those involved with developing carbon projects. Compared to the wider marketplace, the Pacific Carbon Trust paid about 80 percent more than the average global price (\$5.49) for all forestry projects and more than double the average price (\$4.61) for projects in regulated markets.

The Pacific Carbon Trust’s contract with the Nature Conservancy of Canada was based on escalating prices, meaning the Pacific Carbon Trust paid more for a higher volume of offsets. Had it bought 250,000 or fewer offsets, it would have only paid \$8 for each one. The PCT explained that they were uncertain whether they could acquire the significant volume of offsets necessary to meet government’s carbon neutral goal and were therefore dependent on Darkwoods as the offset supply in B.C. was not extensive.

The Pacific Carbon Trust cited the need to provide incentives for projects to deliver higher volumes. As a result, the PCT was willing to pay more to encourage larger volumes be delivered by the Darkwoods project developers.

The value-for-money aspect of the Pacific Carbon Trust’s approach was further eroded as a result of the agency having bought more offsets than needed from the Darkwoods project. This was a result of the project’s “leakage” not being conservatively estimated. The leakage factor reduces the amount of offsets available from a project (see sidebar). The PCT told us that it was not satisfied with the leakage factor calculated for the Darkwoods project, because the amount was much lower than pending provincial standards at the time on this issue. It was also lower than the amount estimated as being appropriate in a study of Pacific Northwest forests.

LEAKAGE

“Leakage” is a complex issue. However, in simple terms it refers to what happens when an offset project causes an increase in GHG emissions at another location. For example, if a project reduces harvesting in the project area, it is possible that demand for forest products could push logging operations to another location thus negating GHG reductions in the original location.

Because the Pacific Carbon Trust was unable to negotiate a higher leakage factor, it purchased 450,000 offsets instead of the required 403,112 Darkwoods offsets at an additional cost of \$468,880.

Encana offsets costs

The contract with Encana provided for varying prices depending on the amount purchased. The Pacific Carbon Trust paid \$20 per offset for the first 47,000 and \$18 per offset for the balance. In all, the trust purchased 84,671 offsets (most of which were applied to the 2010 carbon neutral year) for over \$1.6 million. The average price in the voluntary carbon market at this time was about \$10 per offset for similar types of projects.

As the project developed, Encana became concerned about whether the Pacific Carbon Trust would follow through on the purchase agreement. To provide some level of security, the Pacific Carbon Trust agreed to a \$30,000 penalty provision, calling for the PCT to pay Encana's project development costs if it did not complete the transaction. In our view, this provision raises questions about the Pacific Carbon Trust's ability to be objective when it assessed the quality of the Encana project.

WE RECOMMEND THAT:

The Pacific Carbon Trust provide greater transparency about the cost-effectiveness of its purchases.

The Climate Action Secretariat and the Pacific Carbon Trust ensure that reporting on carbon neutrality assesses the trade-offs between reducing government emissions and offsetting those emissions through the purchase of offsets.

WE WILL FOLLOW UP on the implementation status of the recommendations in our April 2014 follow-up report. Given the nature of the findings in this report, we will consider examining other offset projects such as the Great Bear Rainforest project. The credibility of offsets is imperative if the expected environmental benefits are to be realized.

Many organizations are already voluntarily reducing their emissions and some are following government in becoming carbon neutral. However, purchases of carbon offsets alone will not lead to government meeting its climate change objectives for the province. Government has a goal of a 33 percent carbon emissions reduction by 2020. A comprehensive suite of policies and programs will need to be implemented to meet this goal. We will consider examining the effectiveness of plans and programs focused on that goal.

Even if the provincial emissions reduction goal is being attained, climate change will still have impacts on our economy and society. All levels of government will need to understand these impacts and implement appropriate adaptation measures to reduce the risks. This also is an area that we will look into for future audit work.



Source: Office of the Auditor General

While there are a number of definitions of additionality, they all focus on the need for showing that offset benefits were a serious consideration in the decision to implement the project. Offsets are meant to be the tipping point to make projects happen.

The Pacific Carbon Trust - news release, May 5, 2011

Real GHG reductions or removal that would not have occurred without the revenues associated with the purchase of offsets.

Clean Development Mechanism

The CDM Executive Board deems a project additional if its proponents can document that realistic alternative scenarios to the proposed project would be more economically attractive or that the project faces barriers that CDM helps it overcome.

Climate Action Reserve program manual

GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. “Business as usual” reductions – i.e., those that would occur in the absence of a GHG reduction market – should not be eligible for registration.

Climate Action Reserve

Means that the emission reduction is not required by law and would not have occurred but for the incentive provided by the carbon market. President CAR, June 29, 2011.

Electric Power Research Institute

A GHG emission reduction project designed to create offsets is considered to be “additional” if the reductions created by the project activity would not have occurred but for the implementation of the project and the incentives created by the offset program.

Offset Quality Initiative

The revenue from the project’s emission reductions should be reasonably expected to have incentivized the project’s implementation for an offset project to be considered additional.

Pembina Institute and the David Suzuki Foundation

To be additional, an offset project must not have happened without the incentives arising from the offset market.

Stockholm Environment Institute

Would the project have happened anyway? If the answer to that question is yes, the project is not additional.

UK Department of Energy and Climate Change

Projects must demonstrate that they produced a saving in carbon that would not have happened otherwise i.e. the project could not take place without the carbon finance from selling credits.

U.S. Government Accountability Office (GAO)

An offset is additional if it would not have occurred without the incentives provided by the offset program.

Additionality:

The principle that only those projects that would not have happened anyway should be eligible for carbon credits. Additional emission reductions are those emission reductions that would not have occurred under business-as-usual or in the absence of actions associated with an offset project. Pacific Carbon Trust requires proponents to demonstrate that the incentive of having project emission reductions recognized as offsets helps the project overcome, or partially overcome, obstacles to carrying out the project. See Appendix 1.

Baseline scenario:

A scenario that reasonably represents the emissions by sources of greenhouse gases (GHGs) that would occur in the absence of the proposed project activity.

Carbon Dioxide (CO₂):

This greenhouse gas is the largest contributor to human-induced climate change. For example, CO₂ is emitted by deforestation and the burning of fossil fuels.

Carbon Dioxide Equivalent (CO₂e):

A measure of the global warming potential of a particular greenhouse gas compared to that of carbon dioxide. One unit of a gas with a CO₂e rating of 21, for example, would have the warming effect of 21 units of carbon dioxide emissions (over a time frame of 100 years).

Carbon offset:

A carbon offset represents a reduction or sequestration of greenhouse gas emissions generated by activities – such as improved energy efficiency – that can be used to compensate for, or offset, the emissions from another source, such as a plane trip. One carbon offset represents the reduction of one tonne of carbon dioxide (or its equivalent in other GHGs).

Carbon neutral:

The concept of achieving carbon neutrality involves purchasing carbon offsets for any emissions generated to achieve net-zero greenhouse gas (GHG) emissions.

Conservative:

A principle or set of practices designed to avoid overestimating emissions reductions. In the Emission Offsets Regulation the term “conservative” is used to mean a GHG reduction that is unlikely to have been overestimated.

Greenhouse Gases (GHGs):

Gases that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the earth's surface, the atmosphere and clouds. For purposes of *Greenhouse Gas Reduction Targets Act* (GGRTA), greenhouse gases are limited to the six main GHGs whose emissions are human-caused: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF₆).

Greenhouse Gas Reduction:

For the purposes of the Emission Offsets Regulation, the definition is a reduction of GHG emissions or an enhancement of GHG removals.

Kyoto Protocol:

An international treaty that requires participating countries to reduce their emissions by 5 percent below 1990 levels by 2012. The Protocol, developed in 1997, is administered by the Secretariat of the UN Framework Convention on Climate Change.

Leakage:

Leakage is defined as the net change of human-caused emissions by sources of greenhouse gases (GHGs) which occurs outside the project boundary, and which is measurable and attributable to the project activity.

Offset Project:

A discrete action undertaken to achieve a GHG reduction (Emission Offsets Regulation definition), which includes both enhancement of GHG removals and reductions in emissions.

Project Plan:

Plan prepared by or on behalf of a Proponent and in accordance with Sections 3 or 7 of the Emission Offsets Regulation.

Project Protocol:

A document that provides specific principles, concepts, and methods for quantifying, monitoring and reporting GHG reductions for a project.

Proponent:

Person who proposes either to carry out or to engage another person to carry out a project to generate emission offsets for the purposes of the Act.

Regulated Market:

The market for carbon credits used to reach emissions targets under the Kyoto Protocol or the European Union Emissions Trading Scheme (EU ETS). Also called the Compliance Market.

Validation:

An initial assessment of an offset project against a set of criteria. Under the Emission Offsets Regulation this is established through assurance by an independent, ISO 14065 accredited firm or organization that the content and assertions of the Project Plan comply with the requirements of the regulation.

Verification:

In the context of reductions associated with an offset project, verification is the assessment and confirmation that the claimed reductions have occurred. Under the Emission Offsets Regulation this is established through assurance by an independent, ISO 14065 accredited firm or organization.

Voluntary Market:

The non-regulated market for carbon credits that operates independently from Kyoto and the EU ETS. Also called the Non-Regulated Market.



OFFICE OF THE
Auditor General
of British Columbia

Location:

8 Bastion Square
Victoria, British Columbia
V8V 1X4

Office Hours:

Monday to Friday
8:30 am – 4:30 pm

Telephone: 250-419-6100

Toll free through Enquiry BC at: 1-800-663-7867
In Vancouver dial 604-660-2421

Fax: 250-387-1230**Email:** bcauditor@bcauditor.com**Website:**

This report and others are available at our website, which also contains further information about the office: www.bcauditor.com

Reproducing:

Information presented here is the intellectual property of the Auditor General of British Columbia and is copyright protected in right of the Crown. We invite readers to reproduce any material, asking only that they credit our Office with authorship when any information, results or recommendations are used.

Mountain Caribou cover photo courtesy of G. Beaudry.