



Pacific Carbon Trust

# CARBON NEUTRAL GOVERNMENT OFFSET PORTFOLIO

2012



Carbon  
Neutral  
Company



Pacific Carbon Trust



# Pacific Carbon Trust



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## Contents

<b>Message from Pacific Carbon Trust</b>	<b>3</b>
<b>2012 Carbon Neutral Government</b>	<b>4</b>
Offset projects in your region	4
<b>Working with our public service partners</b>	<b>5</b>
<b>Why offsets</b>	<b>6</b>
<b>Offset project types</b>	<b>7</b>
<b>Quality</b>	<b>8</b>
<b>Pricing</b>	<b>10</b>
<b>Economic impact</b>	<b>11</b>
<b>Continuous improvement</b>	<b>12</b>
<b>Award winners</b>	<b>13</b>
<b>International leadership</b>	<b>14</b>
<b>Carbon neutral organizations</b>	<b>15</b>
<b>2012 Offset Project Map</b>	<b>16</b>
<b>2012 Offset portfolio summary</b>	<b>17</b>
<b>2012 Portfolio of offset projects</b>	<b>18</b>
Agricultural	18
Buildings	20
Forestry	21
Industrial	29
Landfill	31
Oil and Gas	33
Transportation	37



## Pacific Carbon Trust

### Pacific Carbon Trust's standards

All offsets purchased by Pacific Carbon Trust meet the BC emission offsets regulation to ensure our offsets are additional, credible, made in BC, and of the highest quality.



## Message from Pacific Carbon Trust

Dear public sector colleagues,

For many BC citizens receiving government services, your workplaces – 7,500 buildings in total – are their touch-points. Every day, nearly two million British Columbians work in, learn in, or visit public sector buildings that are carbon neutral, thanks to your climate leadership.

Your leadership has another tangible result: the 2012 Carbon Neutral Government offset portfolio, which Pacific Carbon Trust has purchased on your behalf and profiled in these pages. In 2012 we invested in 26 BC-based offset projects that reduce emissions by creating energy from a low-carbon fuel supply, increasing energy efficiency, or sequestering carbon from the atmosphere.

These innovative projects are located across major sectors and in almost every region of the province. Climate action mechanisms like carbon offsets provide an incentive for companies, municipalities and cooperatives to take meaningful action to reduce their emissions, and their actions reverberate throughout BC, supporting jobs and generating revenue.

As public sector organizations, you are an integral part of this world-leading system that is helping drive action on climate change province-wide and creating job opportunities in local communities. Environmental responsibility and economic growth can, and do, coexist in BC.

You are our valued partners in this ongoing commitment to taking action and employing clean energy solutions to the challenges of climate change. We look forward to continuing to work with your representatives on the Carbon Offset Advisory Panel to help shape our portfolio.

On behalf of Pacific Carbon Trust: congratulations to all of you on the third year of carbon neutral government in British Columbia.

Sincerely,

D. Scott MacDonald  
CEO, Pacific Carbon Trust



### Offset projects in your region

- **Vancouver Island / Coast** – improved forest management project that supports First Nations economic development and conservation to increase carbon sequestration
- **Thompson Okanagan** – waste-to-energy technologies in lumber kilns that eliminate transport of fossil fuels, a municipal landfill project that turns waste into energy to heat local homes, and energy-efficiency buildings
- **Cariboo** – innovative local pulp mill projects that involve switching from fossil fuels to biomass and improving energy efficiency, as well as a regional district landfill project
- **Lower Mainland / Southwest** – numerous projects across transit, agriculture and industry sectors, as well as energy-efficient buildings that feature first-of-a-kind uses of technology in BC
- **North Coast** – large forestry project with First Nations, which support biodiversity and community development
- **Northeast** – five projects that feature innovative technology in local oil and gas industries and a lumber mill project that uses wood waste

## 2012 Carbon Neutral Government

This is the third year that the BC public sector has achieved carbon neutrality.

Each year, provincial public sector organizations (PSOs) have become more efficient at achieving energy cost savings and associated greenhouse gas (GHG) emission reductions. The resulting success stories from PSOs are inspiring and worth sharing and celebrating.

To become carbon neutral, each organization must first measure, then reduce, report, and offset their emissions. Pacific Carbon Trust facilitates this final step through investments in high quality BC-based offsets that reduce GHG emissions or sequester carbon.

To qualify as offsets, projects must meet the BC emission offsets regulation, based on international standards that ensure the emissions reductions are real, additional to business-as-usual practices, permanent, verifiable and counted only once.

Carbon offset projects that are accepted into our portfolio do more than simply reduce emissions. Among other benefits, this year's projects have also supported First Nations environmental stewardship and new economic opportunities, created new uses for wood waste in the lumber industry, and created opportunities for municipalities to convert waste to energy that is used to heat local homes.

Carbon offset projects also create economic benefits in the communities where they are located. Since its inception, Pacific Carbon Trust has invested in more than 2.2 million tonnes of emissions offsets to support the Province's carbon neutral commitment. These investments have generated a significant economic impact in communities across BC, stimulating approximately \$317 million in capital spending between 2008 and 2012.

The 2012 Carbon Neutral Government Offset Portfolio is a testament to our collective commitment to the environment and the economy, and shows that a more competitive and cleaner future for BC is well within our grasp.







### Working with our public service partners

Following extensive consultation with BC's public sector organizations, Pacific Carbon Trust and the Climate Action Secretariat last year established the Carbon Offset Advisory Panel (COAP). This panel includes representatives from the public sector, including K-12, post-secondary institutions, public health authorities, Crown corporations, and core ministries.

Over the course of the year, the COAP gained an understanding of the offset market in BC and began to map out a broad vision for Pacific Carbon Trust's future portfolio. The panel will work closely with Pacific Carbon Trust and ministry staff to ensure that offsets acquired not only meet the stringent requirements of the BC emission offsets regulation, but also consider economic, environmental, social and other co-benefits.

This includes supporting new innovations in clean technologies, more energy efficient, competitive industries, and jobs in communities across the province.

"Broad representation on the Carbon Offset Advisory Panel will help ensure that offsets purchased for carbon neutral government not only meet the Province's world-class carbon regulations, but also support jobs, new innovation in clean technologies, and other important co-benefits in every region of the province."

**Shawn Wilson,**

Chairperson, Board of Education,  
(Surrey) School District 36 and  
member, Carbon Offset Advisory Panel





Wayne Gillette

## Why offsets

Released in 2008, BC's Climate Action Plan outlined a number of policies and programs to encourage citizens, organizations and businesses to reduce their greenhouse gas emissions. One mechanism was the carbon tax, which puts a price on carbon. Offsets are another price-driven mechanism to encourage behaviour change that leads to reductions in emissions. Government also saw that offsets could be a vehicle to help the public sector become carbon neutral.

Carbon neutrality starts with measuring your carbon footprint and then taking every possible action to reduce greenhouse gas emissions. Of course, it is impossible to completely negate greenhouse gas emissions – and this is where offsets come in. Beyond a way to achieve carbon neutrality, offsets also offer a cost-effective, efficient means of achieving large scale reductions, creating an incentive for greater investment across the economy. As with the carbon tax, putting a price on carbon has proven to change behaviour for the benefit of the environment.

Offsets allow public sector organizations to amplify their positive impact on the environment by harnessing the capital that proponents invest in offset projects. Offsets are extremely cost-effective. Between 2008 and 2012, offset investments leveraged an estimated \$317 million dollars of private capital spending in communities across BC, with approximately \$8 in private funds spent for every \$1 contributed from offset purchases. This means more reductions for every dollar spent.

Emissions reductions like these, in the broader economy, can help industries in every sector become more competitive, creating and preserving jobs in communities across BC. And direct investments in public sector energy efficiency projects save energy and over time reduce ongoing operating costs. Both types lead to benefits for climate, community and the environment, and help BC meet its emissions reduction targets.



761,368  
tonnes of CO<sub>2</sub>e  
retired on behalf of  
Carbon Neutral  
Government 2012



That's the equivalent of taking  
149,288 cars off the road  
for one year.



That's the equivalent of taking  
1,553,191 plane trips from  
Vancouver to Toronto.

## Offset project types

To achieve carbon neutrality for the 2012 calendar year, 761,368 tonnes of emissions offsets will be retired by Pacific Carbon Trust on behalf of BC's public sector organizations.

Pacific Carbon Trust balances its portfolio with three types of projects:

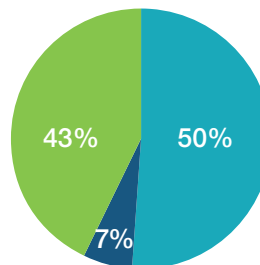
**Energy Efficiency** – These projects involve eliminating waste and improving productivity. Examples include flaring and venting reductions (oil and gas sector), methane capture and thermal insulation.

**Fuel Switching** – These projects involve switching from high carbon fuels to lower-carbon fuels such as biomass and electricity. Examples include burning wood waste, switching from coal to natural gas and replacing fossil fuels with electricity.

**Sequestration** – These projects involve the sequestration of carbon in the atmosphere, either through capture and storage or through establishing natural carbon sinks (forests / soils). Examples include improved forest management (IFM), afforestation and conservation initiatives.

### Project Types

- Energy Efficiency (EE)
- Fuel Switching (FS)
- Sequestration (SQ)





## Pacific Carbon Trust

markit™

### Learn more about our portfolio projects

Details about individual carbon offset projects are publicly available on the Markit Environmental Registry. This service ensures offsets are not double-counted and allows the public to learn more about specific projects.

To view original project planning documents, validation and verification statements of assurance, and the number and date of tonnes retired, visit [www.pacificcarbontrust.com](http://www.pacificcarbontrust.com) and select the Offset Registry link in Our Projects.

Welcome to Markit

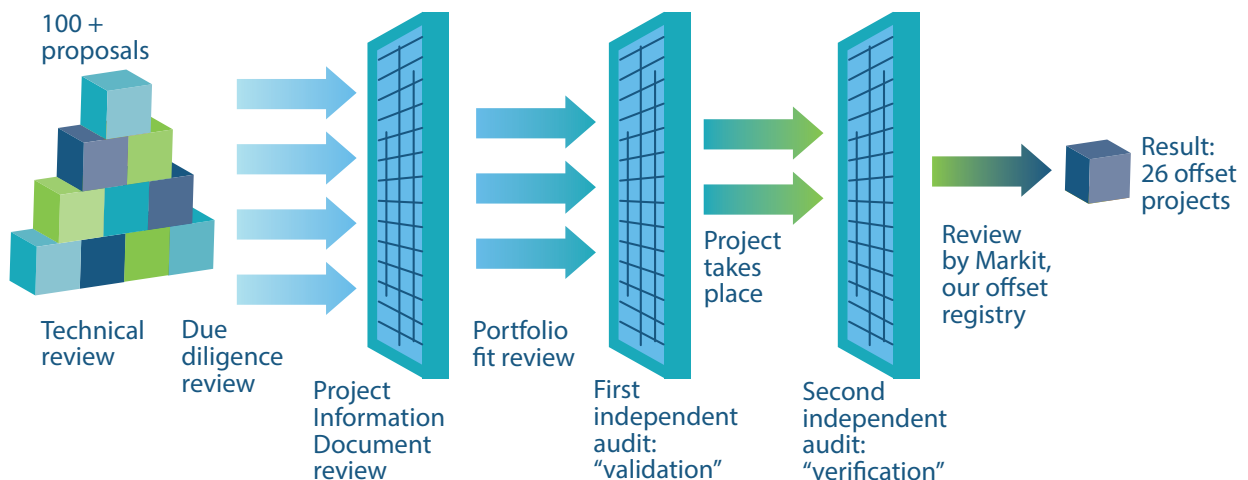
## Quality

Pacific Carbon Trust is required by law to rely upon the expert opinion of accredited auditors to determine if GHG reduction projects qualify as carbon offsets. Pacific Carbon Trust never makes an offset purchase until it receives assurance that the project meets the BC EOR's quality specifications for offsets.

The approach is a little like buying a new house. Just as we have a provincial building code and require building inspectors to inspect new homes, the Province has established quality standards for carbon offsets and set up safeguards to ensure an independent evaluation process. Pacific Carbon Trust relies on top international companies to audit the projects for the same reason that a prudent homebuyer relies on the building inspector to ensure the house is built to code.

Before we can purchase carbon offsets, Government mandates that Pacific Carbon Trust rely upon experts to test the projects against strict criteria. First, an accredited validation body reviews the project plan for every offset project, to ensure the plan is feasible. Then, after the project begins, an independent verification team ensures that the GHG reductions have taken place, and that they have been quantified and documented in conformance with the BC emission offsets regulation.

### Ensuring quality projects through rigorous reviews







## Pacific Carbon Trust

### International Standards Organization

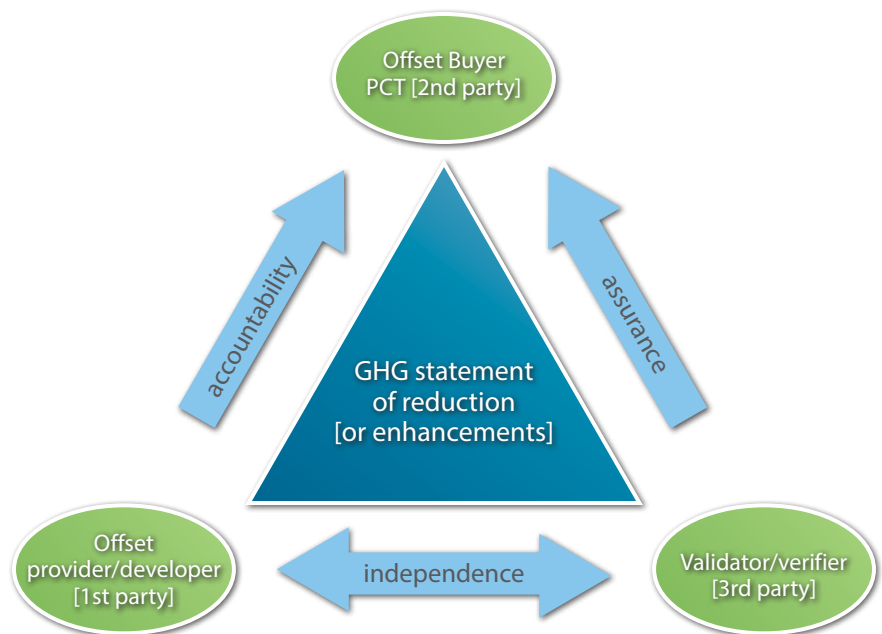
Requirements for BC offset projects are based on the International Organization for Standardization (ISO) framework for quantifying, reporting, validating and verifying carbon offset projects. The ISO standards were developed by a technical committee of experts in the field and approved by subject matter experts from 78 countries, including Canada. These standards form the basis for credible offset systems worldwide.

Both validation and verification teams are required to have full ISO 14065 accreditation (or be in the process of acquiring it). Their investigation and statement of assurance for each project are equivalent to the level of rigour applied to a financial audit.

Once the audits have taken place and the independent online registry Markit has done its due diligence, Pacific Carbon Trust can purchase offsets as additions to our portfolio.

All these processes and controls are essential to ensure the integrity of the final offset product. We started with more than 100 potential offset projects and winnowed these down, this year, to 26 high-quality made-in-BC offset projects. Ultimately, you can be sure that we deliver only the best of the best GHG reduction projects to your portfolio.

You can read more about the third-party auditors and the process of validation and verification on Pacific Carbon Trust's website.





## Pacific Carbon Trust



"People around the world are changing the way they live in order to reduce their carbon footprint – and consumers are demanding that businesses and industries change too."

Scott MacDonald,  
CEO, Pacific Carbon Trust

"Approximately \$243 million in GDP from direct, indirect and induced impacts is anticipated to be generated from the \$317 million in capital spending on carbon emissions projects."

PricewaterhouseCoopers,  
*Economic Analysis of British Columbia  
Carbon Offset Projects*

## Pricing

Pacific Carbon Trust purchases offsets on behalf of its clients, primarily BC public sector organizations. The provincial government set the sale price for carbon offsets at \$25 per tonne of carbon dioxide equivalent.

This benchmark provides a clear price signal to BC public sector organizations, so you can budget for your offset costs, and creates an incentive for reduction efforts. This sale price is comparable to that set by other carbon retailers in Canada.

Pacific Carbon Trust purchases offsets from clients who have achieved verified GHG emission reductions in forest sequestration, energy efficiency and fuel-switching projects. Between 2008 and 2012, we invested \$30 million in projects and leveraged a total of \$317 million in private sector investment in BC forestry, clean technology, mining, oil & gas, agriculture, waste management and manufacturing.

We purchase offsets from these projects at anywhere from \$9-\$19/tonne, as each type has its own associated project costs, risks and value. We also cover the cost of Smarttool, which public service organizations use to measure their emissions. Any surpluses flow back to government.

For more information about pricing, please visit the Carbon Offset Pricing Structure page on the PCT website.



## Economic impact

The results from both studies were informative and encouraging.

PwC estimated that the projects would contribute \$243 million of GDP to the economy and generate \$49 million in federal, provincial and municipal tax revenues between 2008 and 2012. According to PwC, an estimated 2,836 jobs were supported by these projects.

The Deloitte report, *British Columbia: Balancing Opportunities and Risks in the Global Carbon Economy*, affirmed that BC is uniquely positioned to capitalize on these opportunities. It noted that BC is at a very important juncture. In less than a decade, regulated carbon markets have grown to more than USD\$120 billion, representing more than eight billion tonnes of carbon transactions.

As an early mover in climate leadership, BC is in a unique position to benefit globally. Among other opportunities, Deloitte noted that BC can export its clean technology solutions to other jurisdictions as they implement regulations and carbon reduction strategies.

To read the reports, please visit the Carbon Industry Intelligence page on the PCT website.





"We must utilize every means at our disposal to wean ourselves away from carbon-intensive fuels, and we need to do it now. Encouraging industry to move towards cleaner sources of energy, as Pacific Carbon Trust is doing, will create good jobs and help put us on the right track to a more sustainable and robust economy."

Thomas Pedersen,  
Executive Director, Pacific Institute  
for Climate Solutions (PICS)

## Continuous improvement

Pacific Carbon Trust is dedicated to making improvements to our business whenever and wherever it makes sense. Embodied in our work culture is the belief that it's important to continuously challenge ourselves to do better.

Since Pacific Carbon Trust was established, we have worked with government to complete extensive engagements to improve the Carbon Neutral Government program. In 2012, we also commissioned the auditing firm Deloitte to review our policies, procedures, structure and documents. Their review findings have informed our approach to continuous improvement.

This work has resulted in significant improvements this past year, including:

- Publicly releasing our pricing framework (see page 10 of this document), illuminating the range of prices we typically pay for projects;
- Soliciting guidance from the Carbon Offset Advisory Panel (see page 5) on the structure and diversity of our offset portfolio;
- Clarifying roles and responsibilities with Government and industry partners;
- Updating our key guidance documents.

For more information and a full list of the changes we've made, please visit the Continuous Improvement page on the PCT website.



Alison Candy





"By taking early action and by its natural energy advantages, BC has established a strong opportunity to export clean technology, infrastructure and energy to a world seeking low-carbon options in those areas."

Deloitte,

*British Columbia: Balancing Opportunities and Risks in the Global Carbon Economy*

## Award winners

Many of our project suppliers, clients and partners receive accolades for the important work they do in sustainability and greenhouse gas reduction efforts. These organizations are helping propel the growth of the low-carbon economy in BC and internationally, and deserve recognition.

In 2012, Markit Environmental Registry, which retires offsets on our behalf and hosts project documents on its public website, was voted "best registry provider" for the third consecutive year by the readers of Environmental Finance in the publication's Voluntary Carbon Markets Survey.

Two of our validation and verification teams won awards in 2012. SCS Global Services was a double winner in the first Carbon Trading magazine market survey. NSF International Strategic Registrations won a Green Ribbon Environmental Leadership Award from the American Water Works Association.

Two offset suppliers also won awards for their initiatives. The Columbia-Shuswap Regional District won a Federation of Canadian Municipalities (FCM) Sustainable Community Award and a provincial award from the Union of British Columbia Municipalities (UBCM) for its Salmon Arm landfill project. As well, CNRL won the 2012 Canadian Association of Petroleum Producers President's Award for two projects, one of which was the Septimus Electrification project.

Three of our voluntary clients also recently won awards:

MET Fine Printers won its 31st "Benny" (the "Oscar" of the print world) for Environmental and Print excellence. Agenda Office Interiors won a Capital Regional District EcoStar Award in the "waste reduction" category. And the Village of Harrison Hot Springs won the Sustainable Development Award at the National Communities in Bloom competition.

For more information about awards won by our partners, clients and suppliers, please visit the Award Winners page on the PCT website.



## Pacific Carbon Trust



Wayne Gillette

"Sharing and disseminating expertise [in the areas of standards, protocols, verification and validation] with jurisdictions in both the developed and the developing world represents a key opportunity for BC to support the expansion of the global carbon market."

Deloitte,

*British Columbia: Balancing Opportunities and Risks in the Global Carbon Economy*

## International leadership

Since its inception, Pacific Carbon Trust has established itself as a leader in the North American carbon market and willingly shares the knowledge it has gained in growing BC's low carbon economy.

In the past few years, Pacific Carbon Trust has helped inform the development and launch of other emission reduction programs around the globe, meeting with delegations from Quebec, Australia, China, France, Singapore and Japan.

Pacific Carbon Trust has also established relationships with private companies and other stakeholders in these markets and others around the world, contributing to the influence and impact of BC's low carbon economy.



Wayne Gillette



## Pacific Carbon Trust

### Carbon neutral companies

These organizations and private companies have committed to going carbon neutral:

The World Bank  
Google  
Barclays UK  
BMO  
Fox News  
HSBC  
Vancouver 2010 Winter Olympics  
Vancity  
Marks and Spencer  
Yahoo  
TD Bank  
Harbour Air

## Carbon neutral organizations

Three years ago, BC's public sector made a bold move. This year many local governments followed suit. And several BC companies, after reducing their carbon footprints, have also taken the next step to fight climate change – by going carbon neutral voluntarily.

Purchasing quality offsets is a cost-effective way to get to zero emissions, supports local carbon reduction projects, and is a powerful statement for employees, clients, and partners alike to help drive change. BC's public sector organizations know the importance of this leadership role. Increasingly, it's something businesses and other organizations also value.

Large, international corporations have made headlines by taking up carbon neutrality. A growing community of climate leaders here in BC is also making an impression. This year, several local governments achieved carbon neutrality under BC's Climate Action Charter as part of their carbon reduction strategy – many by sourcing offsets through Pacific Carbon Trust, including:

Village of Harrison Hot Springs  
District of Port Hardy  
Town of Sidney  
District of Logan Lake  
Township of Spallumcheen  
City of Dawson Creek  
District of Fort St. James  
District of Clearwater  
District of Ucluelet

"I cannot quantify which work we won specifically due to our Green Strategy ... but I can guarantee that without it we would not have been VANOC's Official Print Partner for the 2010 Games, or be working with the likes of Fortis BC, the Vancouver Aquarium, Nike Worldwide, Microsoft or Starbucks to name but a few."

Scott Gray,  
VP Branding, MET Fine Printers

Through Pacific Carbon Trust, Graphic Office Interiors, MET Fine Printers, the corporate operations of Port Metro Vancouver, and scheduled services on Helijet have been carbon neutral for several years; it is an important core value, helping them connect with clients and stakeholders. It's also becoming increasingly important to financial professionals, who understand the need to reduce emissions and address climate change to help mitigate corporate risk.

Agenda Office Interiors, Yasodhara Ashram, Green Step Solutions, Digital Direct, and the Vancouver Aquarium's AquaVan program have also invested in our portfolio. With more than 20 voluntary clients, this is a diverse group, but they have one thing in common: each has a robust approach to sustainability.

With this growing community, there are many stories to tell. If you'd like to learn more, please visit the Our Clients page on the PCT website.



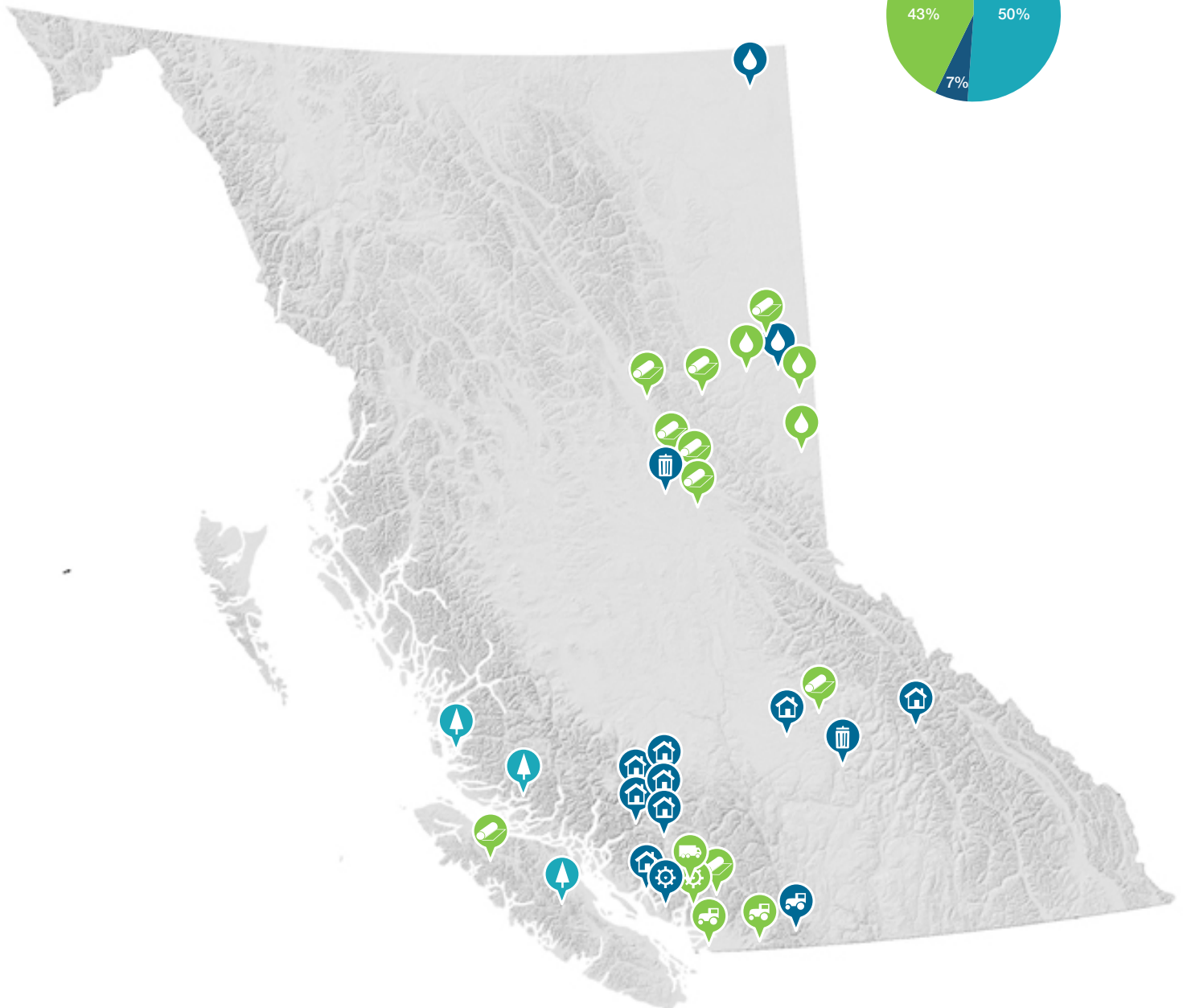
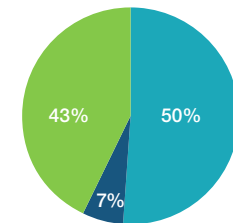
## 2012 Offset Project Map

### Sectors

- |                     |                |
|---------------------|----------------|
| Agriculture         | Industrial     |
| Buildings           | Landfill       |
| Forestry-Land       | Oil and Gas    |
| Forestry-Industrial | Transportation |

### Project Types

- Energy Efficiency (EE)
- Fuel Switching (FS)
- Sequestration (SQ)







## Pacific Carbon Trust

### 2012 Offset portfolio summary

Project Types Key  
EE – Energy Efficiency • FS – Fuel Switching • SQ – Sequestration

Project	Validator	Verifier	Sector	Project Type	Project Tonnes*
Biomass Fuel Switch (Interfor)	KPMG	Conestoga-Rovers & Assoc.	Forestry	FS	17,088
Boiler Upgrades to Increase Thermal Efficiency (Canfor Pulp RB #1)	Ernst & Young	KPMG	Forestry	FS	42,723
Bus Fuel Switch (BC Transit / TransLink)	KPMG	First Environment	Transportation	FS	26,606
Cement Plant Fuel-Switching (Lafarge)	Conestoga-Rovers & Associates	KPMG	Industrial	FS	587
Clean Tech Biomass Gasification (Kruger Products)	Ernst & Young	Ruby Canyon Engineering	Forestry	FS	19,730
Electrification of Gas Processing Plant (CNRL)	Stantec	Ruby Canyon Engineering	Oil and Gas	FS	31,964
Fuel Switching (Neucel)	Ruby Canyon Engineering	Ernst & Young	Forestry	FS	7,111
Engine Fuel Gas Management Program of Activities (Blue Source)	Stantec	Ruby Canyon Engineering	Oil and Gas	EE	19,643
Greenhouse Energy Efficiency (Randhawa Farms)	Williams Engineering Canada Inc.	Ernst & Young	Agricultural	EE	78
Greenhouse Fuel Switch (Katatheon)	Stantec	Ernst & Young	Agricultural	FS	1,893
Greenhouse Fuel Switch (Sun Select Farms)	Stantec	Ernst & Young	Agricultural	FS	14,653
Hybrid Heating System (ENBALA)	Envirochem	KPMG	Buildings	EE	99
Improved Forest Management (Great Bear Initiative)	Stantec	KPMG	Forestry	SQ	220,699
Improved Forest Management (Nanwakolas)	Stantec	KPMG	Forestry	SQ	105,000
Improved Forest Management (Timberwest)	KPMG	SCS Global Services	Forestry	SQ	52,279
Landfill Methane Conversion (Salmon Arm Regional Landfill)	KPMG	Ruby Canyon Engineering	Landfill	EE	12,393
Low Emissions Facility (ARC Resources)	Ruby Canyon Engineering	KPMG	Oil and Gas	FS	82,429
Low-Carbon Cement Production (Lafarge)	Conestoga-Rovers & Associates	KPMG	Industrial	EE	5,052
Methane Capture (Foothills Boulevard Regional Landfill)	Ruby Canyon Engineering	NSF International Strategic Registrations	Landfill	EE	18,154
Natural Gas Pipeline Venting Reduction (Spectra)	Stantec	Ernst & Young	Oil and Gas	EE	1,859
Renewable Power Installation (Apache)	Stantec	Ruby Canyon Engineering	Oil and Gas	FS	31,915
Side Stream Scrubber + Hog System Upgrade (Canfor Pulp PB #4)	Ernst & Young	KPMG	Forestry	FS	14,282
Wood Residuals Fuel Switch (Canfor, Chetwynd)	KPMG	PricewaterhouseCoopers	Forestry	FS	9,647
Wood Residuals Fuel Switch (Canfor, Fort St. John)	KPMG	Ernst & Young	Forestry	FS	6,616
Wood Residuals Fuel Switch (Canfor, Mackenzie)	KPMG	PricewaterhouseCoopers	Forestry	FS	11,212
Wood Residuals Fuel Switch (Canfor, Prince George)	KPMG	PricewaterhouseCoopers	Forestry	FS	7,656
Total offsets:				761,368 tonnes	

\* In 2012, BC's public sector emitted 752,298 tonnes of CO<sub>2</sub>e. The final step to become carbon neutral is the retirement of an equivalent quantity of offsets. As a result of minor adjustments to the 2010 and 2011 public sector emissions as well as to previous years' travel emissions, Pacific Carbon Trust has retired an additional 9,070 tonnes.



## 2012 Portfolio of offset projects

In 2012, you are purchasing a diversified portfolio of high quality BC-based carbon offset projects, representing emissions reductions in every sector and in almost every region of the province.

Every project in Pacific Carbon Trust's portfolio has met or exceeded the BC emission offsets regulation's requirements, passing the scrutiny of two sets of accredited, third party audits. All the offset projects have gone beyond "business as usual" and proven to auditors how technical, financial and/or other barriers have been overcome, in part or in whole, through carbon financing.

Some projects in the portfolio feature world-leading technology or have been developed by following first-of-kind protocols. Some projects provide new revenue streams that will help develop conservation economies for local First Nations. Every project has been made possible by your commitment to carbon neutrality.

### Agricultural

Pacific Carbon Trust has invested in a number of projects that reduce GHG emissions through fuel-switching and energy efficiency upgrades, particularly at greenhouses in the Fraser Valley. Greenhouses are critical to the region's economy, and with Pacific Carbon Trust's help, owners are able to produce local food using less fossil fuels.

Number of offsets to be retired for 2012:	16,624 tonnes
Equivalent # of cars off the road for one year:	3,260
Project validator:	Stantec; Williams Engineering Canada Inc. (formerly A.D. Williams)
Project verifier:	Ernst & Young
Benefits in brief: <ul style="list-style-type: none"><li>• Reduction in greenhouse gases</li><li>• Use of mountain pine beetle-damaged wood</li><li>• Reduced reliance on heating systems through passive heat (insulating curtains)</li><li>• A more competitive local food system</li></ul>	



"In addition to the direct emissions reduction, this project [Sun Select Farms] makes local food production more feasible, boosts the regional economy, and reduces the need to import food."

Phil Cull,  
Director, Sourcing, Offsetters

### **Greenhouse fuel switch (Katatheon Farms, Langley)**

Katatheon Farms has reduced its natural gas consumption and associated GHG emissions by installing a biomass boiler. This upgrade is another component of the company's sustainability initiatives, which include using integrated pest management instead of pesticides and herbicides, and incorporating innovative water and heat conservation technology into its everyday operations.

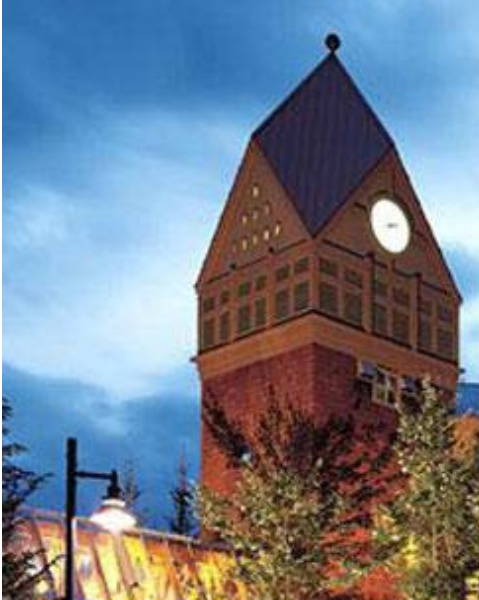
### **Greenhouse energy efficiency and fuel switch (Sun Select Farms, Delta)**

The owners of Sun Select Delta installed a biomass boiler and insulating curtains to help heat the greenhouse and reduce their dependency on natural gas. These offset activities have significantly reduced their annual greenhouse gas emissions relative to the natural gas baseline, their business-as-usual practice.

### **Greenhouse energy efficiency (Randhawa Farms, Abbotsford)**

Randhawa Farms installed insulating curtains at its three greenhouse locations in Abbotsford to reduce the amount of natural gas used as a heat source. The energy curtains are deployed at night and during overcast conditions to help insulate the building. These offset activities have reduced the farms' annual operating greenhouse gas emissions relative to the natural gas baseline.





72% of British Columbians believe the government should continue to take an active role in reducing greenhouse gas emissions and fighting climate change.

*Source: Ipsos Reid*

"ENBALA created the Hybrid Heating system with the primary goals of reducing carbon emissions, reducing energy costs and reducing energy use. The system was successfully implemented, with some sites reducing annual emissions by almost 1,000 tonnes."

Malcolm Metcalfe,  
Founder and CTO, ENBALA

## Buildings

Industrial and residential stationary combustion is responsible for 31 per cent, or almost a third, of British Columbia's total greenhouse gas emissions. This significant carbon liability can become an opportunity as the price attached to carbon is used to incent innovative energy efficiency and fuel switching projects in buildings across the province.

### Hybrid heating systems (ENBALA, nine locations in Vancouver, Whistler, Sun Peaks and Revelstoke)

The intelligent software used in this offset project monitors the consumption of electricity and automatically adjusts its heating output according to the thermal and electrical needs of a building. The result? More efficient energy consumption and a reduction in greenhouse gas emissions. In fact, fossil fuel use has been reduced in nine commercial buildings, resulting in facility-level emissions reductions of as much as 54 per cent.

Number of offsets to be retired for 2012:	99 tonnes
Equivalent # of cars off the road for one year:	19
Project validator:	Envirochem Services Inc.
Project verifier:	KPMG

#### Benefits in brief:

- Reduced reliance on fossil fuels
- Use of made-in-BC technology







## Pacific Carbon Trust



Wayne Gillette

"As a sustainability leader in the cultural sector, we are delighted to be working with PCT to further reduce our organizational footprint by purchasing offsets. The Aquarium's mobile classroom-in-a-truck, Aquavan, is now carbon neutral – a terrific message to schools across BC and into Alberta. "Walking the walk" is, after all, the best way of teaching."

Dr. John Nightingale,  
President, Vancouver Aquarium

## Forestry

Families in communities across the province rely on BC's forest sector. As the direct provider of 55,000 jobs across BC, our forest sector must continue to find new ways to be competitive without compromising sustainability and stewardship. Pacific Carbon Trust has purchased offsets from a range of forestry projects, both land-based and industrial, that reduce emissions and take advantage of the forest's ability to absorb and store carbon dioxide.

### Improved forest management (Nanwakolas)

Number of offsets to be retired for 2012:	105,000 tonnes
Equivalent # of cars off the road for one year:	20,588
Project validator:	Stantec
Project verifier:	KPMG
Benefits in brief:	
<ul style="list-style-type: none"><li>• Improved forest management</li><li>• Revenues benefit local First Nations economies</li></ul>	

The Nanwakolas forest carbon offset project is located in BC's South Central Coast, a pristine part of the Great Bear Rainforest. This region is renowned for its immense stands of trees – widely acknowledged for their ability to sequester large amounts of carbon. The project protects extensive areas of this forest that were previously slated for logging, increasing carbon stocks as the forest continues to grow.

Revenues from the project will help develop a conservation economy that will directly benefit the traditional First Nations stewards of the area, who are part of the Nanwakolas Council Society.



## Pacific Carbon Trust



Ron Thiele

"By pioneering the development of a carbon tax and regulatory offset system, British Columbia has been a climate policy leader in North America."

Deloitte,  
*British Columbia: Balancing Opportunities and Risks in the Global Carbon Economy*



### Improved forest management (Great Bear Initiative)

Number of offsets to be retired for 2012:	220,699 tonnes
Equivalent # of cars off the road for one year:	43,274
Project validator:	Stantec
Project verifier:	KPMG
Benefits in brief:	
<ul style="list-style-type: none"> <li>• Improved forest management</li> <li>• Protects the second largest intact coastal temperate rainforest left on Earth</li> <li>• Revenues benefit local First Nations economies</li> </ul>	

This project converts forests in BC's magnificent Great Bear Rainforest that were previously available for logging to protected forests. This not only protects existing carbon stocks, but also reduces emissions caused by harvesting, road building and other operations, and increases carbon sequestration as the forest grows. Protecting regional ecosystems and important cultural heritage values are additional project objectives.

Revenues from this project will contribute directly to the development of a conservation economy within the area, co-managed by the Province and local First Nations.

### Improved forest management (TimberWest, Vancouver Island)

Number of offsets to be retired for 2012:	52,279 tonnes
Equivalent # of cars off the road for one year:	10,251
Project validator:	KPMG
Project verifier:	Scientific Certification Systems
Benefits in brief:	
<ul style="list-style-type: none"> <li>• Improved forest management</li> <li>• First use of BC Forest Carbon Offset Protocol (FCOP) that will lay the groundwork for future projects and export to the international voluntary carbon markets</li> <li>• Creation of a new export commodity for British Columbia</li> </ul>	

Pacific Carbon Trust has purchased offsets from an Improved Forest Management project with TimberWest that will result in the conservation of select old growth stands on TimberWest's private land. This is the first forest project to use FCOP and is enabled by BC standards, creating a model for others to use and laying the groundwork for offset sales in international markets.



### Boiler upgrades to increase thermal efficiency (Canfor Pulp, Prince George)

Number of offsets to be retired for 2012:	42,723 tonnes
Equivalent # of cars off the road for one year:	8,377
Project validator:	Ernst & Young
Project verifier:	KPMG
Benefits in brief: <ul style="list-style-type: none"><li>• Increased competitive advantage</li><li>• Reduced greenhouse gas emissions</li></ul>	

Canfor has undertaken several energy-efficiency upgrades and innovations at its pulp mills in Prince George. In this project, Canfor Pulp upgraded the recovery boiler at the Northwood Plant in Prince George to decrease natural gas consumption and increase steam generation. The project reduces emissions by substantially reducing the amount of natural gas and biomass burned at the mill site.

### Side stream scrubber and hog system upgrade (Canfor Pulp, Prince George)

Number of offsets to be retired for 2012:	14,282 tonnes
Equivalent # of cars off the road for one year:	2,800
Project validator:	Ernst & Young
Project verifier:	KPMG
Benefits in brief: <ul style="list-style-type: none"><li>• Increased competitive advantage</li><li>• Reduced greenhouse gas emissions</li></ul>	

In this fuel-switching project, Canfor Pulp made upgrades at its Northwood Plant that led to a decrease in greenhouse gas emissions. The pulp mill uses natural gas and biomass in its power boilers to generate steam for the pulping process. This project is based on installing upgrades on the boiler and hog fuel system to allow an increase in the consumption of hog fuel and a corresponding reduction in the use of natural gas.



"PCT's involvement in the carbon market in BC is an exciting new opportunity for the forest sector to enhance their sustainability goals."

Ric Slaco,  
Chief Forester and Vice-President, Interfor

#### Biomass fuel switch (Interfor, Adams Lake)

Number of offsets to be retired for 2012:	17,088 tonnes
Equivalent # of cars off the road for one year:	3,351
Project validator:	KPMG
Project verifier:	Conestoga-Rovers & Associates

##### Benefits in brief:

- Use of residual wood waste
- Eliminates regular 750km round trip to truck in natural gas
- Greater efficiency and competitiveness
- Better air quality

International Forest Products (Interfor) relied on liquefied natural gas to fuel its Adams Lake sawmill. But using large quantities of this fossil fuel not only meant a 750km round trip to transport the fuel, but also greenhouse gas emissions at the mill. Interfor found an innovative yet practical solution, turning to wood waste from its own operations to provide fuel to the sawmill. The highly efficient energy system is used to dry lumber and provide heat for the mill during cold winter months. The project not only diverts wood waste from landfills, but also results in better air quality. This, in turn, boosts tourism and environmental values in this popular recreation destination and important salmon-spawning area.





## Pacific Carbon Trust



"Our Best 50 Corporate Citizens gala showcases leaders in Canada's clean capitalist economy. We were delighted to make the event carbon neutral through Pacific Carbon Trust, another low carbon leader."

**Toby Heaps,**  
President, Corporate Knights

### Wood residuals fuel switch (Offsetters-Canfor, Fort St. John)

Number of offsets to be retired for 2012:	6,616 tonnes
Equivalent # of cars off the road for one year:	1,297
Project validator:	KPMG
Project verifier:	Ernst & Young
Benefits in brief:	
<ul style="list-style-type: none"><li>• Reduced greenhouse gas emissions</li><li>• Economic opportunities in Fort St. John, Vanderhoof and Prince George</li><li>• Efficiencies leading to better competitive advantage</li></ul>	

A new system at Canfor's Fort St. John mill distributes heat to dry lumber through a heat energy system that is fuelled by wood residues generated by the lumber manufacturing process. Developed by Offsetters, a Vancouver-based carbon management solutions provider, this project is a model for reducing BC's industrial emissions in a way that supports clean technologies and creates new economic opportunities for surrounding communities. Not only has Fort St. John benefitted economically, but so have Vanderhoof and Prince George, where many of the heat energy system components were manufactured.

### Wood residuals fuel switch (Canfor, Mackenzie)

Number of offsets to be retired for 2012:	11,212 tonnes
Equivalent # of cars off the road for one year:	2,198
Project validator:	KPMG
Project verifier:	PricewaterhouseCoopers
Benefits in brief:	
<ul style="list-style-type: none"><li>• Reduced greenhouse gas emissions</li><li>• Efficiencies leading to better competitive advantage</li></ul>	

The same system installed at Fort St. John was brought online at Canfor's Mackenzie mill, distributing heat to dry lumber through a heat energy system that is fuelled by wood residues generated by the lumber manufacturing process.



79% of BC residents believe the BC government should be working to stimulate jobs and investment in the clean-tech sector.

*Source: Ipsos Reid*

## Wood residuals fuel switch (Canfor, Prince George)

Number of offsets to be retired for 2012:	7,656 tonnes
Equivalent # of cars off the road for one year:	1,501
Project validator:	KPMG
Project verifier:	PricewaterhouseCoopers
Benefits in brief: <ul style="list-style-type: none"><li>• Reduced greenhouse gas emissions</li><li>• Efficiencies leading to better competitive advantage</li></ul>	

The same system, piloted in Fort St. John, was brought online at Canfor's Prince George mill, distributing heat to dry lumber through a heat energy system that is fuelled by wood residues generated by the lumber manufacturing process.

## Wood residuals fuel switch (Canfor, Chetwynd)

Number of offsets to be retired for 2012:	9,647 tonnes
Equivalent # of cars off the road for one year:	1,892
Project validator:	KPMG
Project verifier:	PricewaterhouseCoopers
Benefits in brief: <ul style="list-style-type: none"><li>• Reduced greenhouse gas emissions</li><li>• Efficiencies leading to better competitive advantage</li></ul>	

The same fuel switching system, piloted in Fort St. John and employed at the Prince George location, was brought online at Canfor's Chetwynd mill, distributing heat to dry lumber through a heat energy system that is fuelled by wood residues generated by the lumber manufacturing process.



**Clean tech biomass gasification  
(Kruger Products, New Westminster)**

Number of offsets to be retired for 2012:	19,730 tonnes
Equivalent # of cars off the road for one year:	3,869
Project validator:	Ernst & Young
Project verifier:	Ruby Canyon Engineering

Benefits in brief:

- New clean technology
- First biomass gasification application in Canadian pulp and paper industry
- Decrease in emissions of up to 50 per cent
- Improved competitiveness
- Improved air quality

Kruger Products Ltd.'s installation of the Canadian pulp and paper industry's first biomass gasification plant has decreased the New Westminster tissue mill's carbon emissions by as much as 50 per cent annually. This new installation, developed by Vancouver's Nexterra Systems Corp., converts local wood waste into clean-burning syngas to provide steam for the mill. Use of this renewable resource provides a competitive advantage for the BC industry and underscores the province's potential to become a world leader in clean energy.



### Fuel Switching (Neucel Specialty Cellulose)

Number of offsets to be retired for 2012:	7,111 tonnes
Equivalent # of cars off the road for one year:	1,394
Project validator:	Ruby Canyon Engineering
Project verifier:	Ernst & Young

#### Benefits in brief:

- Increased competitive advantage
- Local job creation
- Use of residual wood waste
- Reduced reliance on high-carbon fuel source (oil)

Neucel produces some of the best specialty cellulose in the world – and will now do so more sustainably, thanks to this unique offset project. The mill has reduced – and intends to eliminate over time – its use of oil for fuel. Instead, it is using hog fuel, a wood waste product from lumber processing. The mill already employs the majority of Port Alice residents. These innovations will give the mill a new competitive advantage in the international market, while providing even more local job opportunities.





"(The) benefits of strong, early action on climate change far outweigh the costs of not acting."

Nicholas Stern,  
Former Chief Economist, World Bank

## Industrial

For British Columbia to meet its ambitious greenhouse gas reductions targets, it is imperative to reach out to BC's industrial base. Putting a price on carbon is an important part of changing the way businesses do business. Through investment in credible offset projects, Pacific Carbon Trust is helping to build the foundation of a low-carbon economy in BC.

### Cement plant fuel-switching (Lafarge, Richmond)

Number of offsets to be retired for 2012:	587 tonnes
Equivalent # of cars off the road for one year:	115
Project validator:	Conestoga-Rovers & Associates
Project verifier:	KPMG

#### Benefits in brief:

- Creates local jobs
- Diverts construction wood waste that would otherwise emit methane into the atmosphere
- Improves air quality in an urban environment

The Lafarge plant in Richmond reduced its dependency on coal energy, using biomass from construction wood waste to help power the facility. With approximately 2 per cent of BC emissions coming from the creation of cement, this is a significant project for BC. This fuel switch project also stimulates the low-carbon economy by creating local jobs in the sorting and transporting of the wood waste.



## Pacific Carbon Trust

### The go-to source

Curious about our new carbon offset projects or want to keep abreast of news and trends in the carbon marketplace? The Pacific Carbon Trust website is an excellent resource, with project profiles in the offset showcase, a robust library of documents and carbon news.

Other features include an explanation of the rigorous validation process which our offset projects go through, and information about additionality, a key criterion for credible offsets.



### Lower carbon cement production (Lafarge PLC, Richmond)

Number of offsets to be retired for 2012:	5,052 tonnes
Equivalent # of cars off the road for one year:	991
Project validator:	Conestoga-Rovers & Associates
Project verifier:	KPMG
Benefits in brief:	
<ul style="list-style-type: none"><li>• Reduces the amount of carbon-heavy fuel (coal) typically used in production</li><li>• First production of low-carbon cement product in BC</li></ul>	

Lafarge's Richmond plant has also begun to produce a new blended cement product called Portland Limestone Cement (PLC). Because PLC requires less fuel to produce than conventional general-use cement, and emits less carbon as a byproduct of the manufacturing process, the plant will reduce its fuel consumption and cut its greenhouse gas emissions by roughly eight per cent by making this switch. The plant, currently the province's eighth largest emitter of CO<sub>2</sub>e, is showing global leadership in environmental innovation by phasing out production of general-use cement.



"We are very pleased that the landfill gas collection system at Foothills Boulevard Regional Landfill is not only reducing the amount of greenhouse gas emissions into our air shed, but is now a revenue source for the Regional District to offset future capital costs at the landfill."

Art Kaehn,  
Regional District of Fraser-Fort George

## Landfill

Traditionally, municipal landfills have typically emitted tonnes of methane from decomposing waste. Municipalities and regional districts throughout BC are working to find efficient ways to capture and use this potent greenhouse gas. Diverting waste from landfills is the first step, but making innovative use of the waste – and effectively turning it into a resource – means local communities can reduce their GHGs and tap into a new source of revenues in the form of carbon offsets.

### Landfill methane capture (Foothills Boulevard Regional Landfill, Prince George)

Number of offsets to be retired for 2012:	18,154 tonnes
Equivalent # of cars off the road for one year:	3,560
Project validator:	Ruby Canyon Engineering
Project verifier:	NSF International Strategic Registrations

#### Benefits in brief:

- Municipality is generating a new source of revenue through the sale of offsets
- Improves local air quality

The Regional District of Fraser-Fort George has built a new, highly efficient landfill gas capture system at Foothills Boulevard Regional Landfill, which receives approximately 93 per cent of the regional solid waste stream. The landfill was capped to prevent methane – a greenhouse gas 21 times more potent than carbon dioxide – from escaping into the atmosphere. Now, the trapped gas is burned under controlled conditions, and in the process is released as CO<sub>2</sub>, resulting in reduced levels of methane emitted at the landfill site.



## Pacific Carbon Trust



Columbia Shuswap Regional District

### Landfill methane conversion (Salmon Arm Regional Landfill)

Number of offsets to be retired for 2012:	12,393 tonnes
Equivalent # of cars off the road for one year:	2,430
Project validator:	KPMG
Project verifier:	Ruby Canyon Engineering

#### Benefits in brief:

- Municipality is generating a new source of revenue through the sale of offsets
- Improves local air quality

Columbia Shuswap Regional District (CSRD) created an innovative offset project by capturing methane (natural gas) produced by decomposing organic waste in the landfill and injecting it into FortisBC gas pipelines. Methane is a powerful greenhouse gas with 21 times the warming potential of carbon dioxide, but when captured and converted it will produce enough energy to heat over 300 homes and generate 10,000 tonnes of carbon offsets annually.

"The Salmon Arm Landfill Gas offset project benefits the environment, BC's low-carbon economy and the local economy. When we were developing the project, we kept capital dollars close to home by managing the project ourselves and utilizing as many local contractors as possible, employing over 30 companies from the nearby community."

David Raven,

Chair of the Columbia Shuswap  
Regional District Board







## Pacific Carbon Trust



"Our partnership with Pacific Carbon Trust aligns with our corporate values regarding environmental excellence. The relationship helps us maintain a leadership position in environmental management and promotes the opportunities that exist in our industry for low emission operations."

Jackson Hegland,  
Coordinator, Environmental Strategies,  
ARC Resources Ltd.

### Oil and Gas

The BC oil and gas sector has pursued innovative ways to decrease its GHG emissions. Although these projects often take place in remote locations, their impact on reducing climate change is significant and affects all of us. The technological applications that lead to carbon reductions are often made-in-BC solutions. These projects not only reduce GHG emissions, but support the development and export of clean technologies.

#### Low emissions facility (ARC Resources, Dawson Creek)

Number of offsets to be retired for 2012:	82,429 tonnes
Equivalent # of cars off the road for one year:	16,163
Project validator:	Ruby Canyon Engineering
Project verifier:	KPMG
Benefits in brief: <ul style="list-style-type: none"><li>• Reduces greenhouse gas emissions</li><li>• Creation of construction jobs</li><li>• Improves local air quality</li></ul>	

ARC Resources has replaced natural gas as the power source at its Dawson Creek Gas Plant with electricity, and replaced natural gas with compressed air for the plant's pneumatic system.

These two changes mean the company has reduced the amount of natural gas used by the gas processing plant – the equivalent of 338,000 tonnes of carbon dioxide over a six-year period. The result is an overall reduction in greenhouse gas emissions; the plant's carbon footprint is approximately 60,000 fewer tonnes per year than comparable gas plants in the area.



**Electrification of gas processing plant  
(Canadian Natural Resources Limited, Taylor)**

Number of offsets to be retired for 2012:	31,964 tonnes
Equivalent # of cars off the road for one year:	6,267
Project validator:	Stantec
Project verifier:	Ruby Canyon Engineering

Benefits in brief:

- Reduces greenhouse gas emissions
- Creation of construction jobs
- Improves local air quality

This electrification project is located at the Septimus Gas Processing Plant in northeastern BC. The standard practice at gas plants is to use fossil fuels to drive the compressors that move natural gas from the plant and along the pipeline. This project enabled the production of a new compression system connected to the BC Hydro electricity grid, eliminating the need for fossil fuels and significantly reducing the plant's GHG emissions. In 2012, CNRL received a President's Award from the Canadian Association of Petroleum Producers' for two of its projects – of which the Septimus Electrification project was one.

70% of British Columbians polled are in favor of the government providing business with incentives to grow BC's clean-tech sector.

*Source: Ipsos Reid*

"Approximately 2,836 jobs [have been] supported by British Columbia carbon emission proponents receiving offset sales."

PricewaterhouseCoopers,  
*Economic Analysis of British Columbia  
Carbon Offset Projects*



### Renewable power installation (Apache, Dawson Creek)

Number of offsets to be retired for 2012:	31,915 tonnes
Equivalent # of cars off the road for one year:	6,258
Project validator:	Stantec
Project verifier:	Ruby Canyon Engineering
Benefits in brief: <ul style="list-style-type: none"><li>• Reduces greenhouse gas emissions</li><li>• Innovative use of solar power</li><li>• Improves local air quality</li></ul>	

This natural gas development in northeastern BC has become a model for low-carbon natural gas development. The well-site uses a combination of solar power with small thermal electric generators for backup to operate pumps and controllers that previously relied on natural gas. In addition, three natural gas compressor stations were fully electrified and connected to the BC Hydro grid – which is highly uncommon in northeastern BC because of the remote locations of most gas production facilities and associated high costs of building new transmission lines.

### Natural gas pipeline venting reduction (Spectra Energy, Northeastern BC)

Number of offsets to be retired for 2012:	1,859 tonnes
Equivalent # of cars off the road for one year:	365
Project validator:	Stantec
Project verifier:	Ruby Canyon Engineering
Benefits in brief: <ul style="list-style-type: none"><li>• Reduces greenhouse gas emissions</li><li>• Improves local air quality</li></ul>	

Spectra Energy has employed three methods that allow the company to significantly reduce the amount of pressurized natural gas that is released to the atmosphere when working on sections of its natural gas pipelines. Because of this project, Spectra now repressurizes the gas and returns it to a nearby pipeline system, uses a mobile incinerator to combust the natural gas in a safe and controlled manner, and uses the pressurized natural gas to fuel a nearby compressor station. These methods recover or combust the natural gas, which, if vented, is 21 times more potent a greenhouse gas than carbon dioxide.



## Pacific Carbon Trust



### Engine Fuel Gas Management Program of Activities (Blue Source)

Number of offsets to be retired for 2012:	19,643 tonnes
Equivalent # of cars off the road for one year:	3,852
Project validator:	Stantec
Project verifier:	Ruby Canyon Engineering
Benefits in brief:	
<ul style="list-style-type: none"><li>• Reduces greenhouse gas emissions</li><li>• Improves local air quality</li><li>• Potential for widespread use in oil and gas sector</li></ul>	

REM Technology Inc. has developed a new engine fuel management system that helps propel gas from well-sites to processing plants more efficiently and with fewer emissions. This fuel management system is now employed at booster stations to get better performance by reducing fuel consumption – and increasing engine efficiency by as much as 30 per cent. Both ConocoPhillips Canada and CNRL are already using the technology.

Pacific Carbon Trust is on Twitter!  
Tell us your thoughts on climate  
action, carbon neutrality, or  
just follow up for news and  
updates @pacificcarbontr







“BC is a leader in clean technology, and Pacific Carbon Trust helps support clean tech and other carbon reduction projects throughout the province.”

Jonathan Rhone,  
Chair, BC Cleantech CEO Alliance

## Transportation

Transportation accounts for the largest share of provincial GHG emissions, at 36 per cent. Government has shown leadership in driving down this figure, encouraging the use of electric, plug-in hybrid and hydrogen fuel cell vehicle use for drivers through the Clean Energy Vehicle Program. BC’s carbon tax also provides an incentive for car drivers to consider using low-carbon fuel sources. Another innovative way of tackling transportation emissions is through mechanisms like carbon offsets.

### Bus Fuel Switch Project (BC Transit / TransLink)

Number of offsets to be retired for 2012:	26,606 tonnes
Equivalent # of cars off the road for one year:	5,217
Project validator:	KPMG
Project verifier:	First Environment

#### Benefits in brief:

- Improved local air quality
- Provides a new revenue stream for the publicly-funded organizations
- Sets a valuable precedent for other transit offset projects in North America

BC Transit and TransLink have undertaken a groundbreaking fuel-switching project. By replacing conventional diesel buses with lower-emission vehicles, the transportation authorities have implemented public transit’s first North American carbon offset initiative.

TransLink is reducing its greenhouse gas emissions by operating a fleet of diesel-electric hybrid buses and articulated trolleys in the Lower Mainland. BC Transit is lessening its emissions by using a fleet of 20 state-of-the-art hydrogen buses in Whistler. The BC Transit portion of the project also encompasses development of the hydrogen infrastructure.



## Pacific Carbon Trust

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