

DATE: May 9, 2017

FILE: 5280-02

TO: Chair and Directors
Committee of the Whole

FROM: Debra Oakman, CPA, CMA
Chief Administrative Officer

RE: Comox Valley Carbon Neutral Update

Purpose

To present the results of the 2016 Comox Valley Regional District (CVRD) corporate emissions inventory, and to present some proposed emissions reductions activities for the board's consideration.

Policy analysis

In 2007, the CVRD became a signatory to the British Columbia climate action charter which includes commitments for signatories to be carbon neutral by 2012. On March 1, 2011 the board approved the CVRD corporate energy plan and adopted a target of reducing greenhouse gas emissions (GHG) by 10 per cent below 2009 levels by 2015.

At the April 26, 2016 meeting of the CVRD board, the following motions were carried:

THAT the Comox Valley Regional District achieve carbon neutrality for 2015 with the purchase of 1792 metric tonnes of verified offsets from the Granger South Jordan Utah landfill gas capture project at a cost of \$1.50 USD/MT, totalling approximately \$4,000 CAD;

THAT remaining 2015 carbon offset funds be allocated to biodiesel facility investigation (\$10,000), a future reserve for biodiesel facility construction (\$25,720), implementation of a local Scrap-it program (\$6,500), and a wood stove to heat pump conversion pilot project (\$6,500).

THAT the CVRD establish a new corporate greenhouse gas emissions reduction target of 20 per cent below 2015 levels by 2020.

Executive summary

The CVRD has been monitoring its corporate energy use and resulting GHG emissions since 2009, and has been carbon-neutral in respect of its operations since 2012. Guided by the corporate energy plan, emissions have been on a general downward trend since 2011 and 2016's GHG emissions of 1919 tonnes are among the lowest levels seen.

Since 2012, low-cost carbon offsets have been purchased, with remaining carbon offset funds used for local GHG reduction projects, including implementation of energy conservation measures at the Comox Valley sports centre, development of a Comox Valley community carbon marketplace, and implementation of a wood stove to heat pump pilot program. This practice is proposed to continue for 2016, with remaining carbon offset funds used for a region-wide home energy efficiency program and to update the 2011 CVRD corporate energy plan.

Recommendations from the chief administrative officer:

1. THAT the Comox Valley Regional District (CVRD) achieve carbon neutrality for 2016 with the purchase of 1919 metric tonnes of verified offsets from the Dempsey Ridge wind farm project at a cost of \$1.50 USD/MT, totalling approximately \$4,000 CAD;

AND FURTHER THAT remaining 2016 carbon offset funds be allocated to a region-wide home energy efficiency program (\$22,000) and an update to the 2011 CVRD corporate energy plan (\$20,000).

2. THAT \$25,720 in 2015 remaining carbon offset funding be re-allocated to renewable energy infrastructure projects.

AND FURTHER THAT staff be directed to proceed with a suitability assessment of select CVRD facilities for installation of solar photovoltaic panels, and subsequent installation on the best ranked facility.

Respectfully:

D. Oakman

Debra Oakman, CPA, CMA
Chief Administrative Officer

Background/current situation

Through a combination of energy improvements to operations and purchasing offsets, the CVRD has been carbon-neutral in its operations since 2012. In 2015, the CVRD's corporate GHG emissions were 1,792 tonnes, well below the corporate energy plan target of a 10 per cent reduction below the 2009 baseline of 2442 tonnes by 2015. The 2016 corporate GHG emissions inventory has recently been completed, indicating the CVRD's 2016 emissions were 1919 tonnes. Table 1 below is a summary of CVRD corporate GHG emissions since 2008 and GHG reduction expenditures since 2012.

Table 1 – CVRD corporate GHG emissions and GHG reduction expenditures

Year	GHGs (tonnes)	Comments/GHG reduction expenditures
2009	2,442	Emissions baseline as established by 2011 corporate energy plan
2010	2,058	Emissions inventory procedure piloted
2011	2,196	Emissions inventory completed to establish procedure for carbon neutral reporting in 2012
2012	2,154	\$4,246 – carbon offsets purchased (Someshwara Hydropower, India) \$12,000 – Comox Valley community carbon marketplace (CCM) launch \$10,000 – Project Watershed blue carbon initiative \$25,214 – sports/aquatic centres energy retrofits
2013	2,109	\$4,218 – carbon offsets purchased (Someshwara Hydropower, India) \$20,000 – CCM GHG reduction assessments and biodiesel study \$27,242 – sports centre energy retrofit
2014	1,889	\$3,542 – carbon offsets purchased (Granger South Jordan Utah LFG) \$18,683 – allocated to CCM GHG reduction projects \$25,000 – sports centre energy retrofit
2015	1,781	\$4,000 – carbon offsets purchased (Granger South Jordan Utah LFG) \$10,000 – Biodiesel facility investigation

		\$25,720 – Biodiesel facility future reserve fund \$6,500 – Local ScrapIt program implementation \$6,500 – wood stove to heat pump conversion pilot program
2016	1,919	Calculated emissions for 2016

More than 50 per cent of the CVRD’s corporate emissions can be attributed to natural gas use, predominantly in the recreation complexes. The next largest contributors are fleet fuel (diesel and gasoline), and electricity. The functions with the largest contributions to corporate emissions are recreation, sewer and regional solid waste. In comparing 2016 emissions with 2015, increases were noted in two areas – natural gas and gasoline fleet fuel.

Biodiesel update

Following the launch of the community carbon marketplace in 2014, a common thread amongst multiple projects assessed at that time was the potential to achieve emissions reductions through fuel-switching to renewable options such as biodiesel. Cowichan Energy Alternatives (CEA), a partner in a biodiesel blending pump at the Cowichan Valley Regional District’s Bings Creek waste management centre, has worked with CVRD staff to investigate the potential for a similar facility here in the Comox Valley. Further to this, CVRD staff worked with CEA to submit a grant application to the BC Community Energy Leadership Program (CELP) in late 2016. This grant funding application was unsuccessful, hindering further development of this concept.

Public outreach conducted during CEA’s investigation for a similar facility here suggests that local demand for biodiesel is uncertain at this time. With that in mind, there is a risk that it may be difficult to generate adequate revenue to recover costs associated with developing a biodiesel fueling facility here in the Comox Valley. Suspending development of this concept until such time as demand is more certain and promotion of renewable fuels becomes a policy priority for senior levels of government is seen as a viable option at this time.

In 2016, \$25,720 was allocated into a future reserve fund for biodiesel facility construction. One option identified by staff would be to re-allocate this funding to a renewable energy infrastructure project. A CVRD renewable energy installation project would include an assessment of select CVRD facilities (eg. Sports Centre, Aquatic Centre, pump stations, etc) against solar suitability criteria, including site orientation, shading, security, opportunity for public engagement, and ability to reach net-zero energy usage. A solar panel array of approximately 6kW capacity would then be installed on the highest ranked facility.

ScrapIt update

ScrapIt program development for the Comox Valley is in progress. ScrapIt program staff are working with its preferred vehicle recycler to identify a local scrap vehicle drop-off location. An agreement between the ScrapIt program and the CVRD is also in development; this agreement will outline the terms by which the CVRD would be re-imbursed by ScrapIt for the transit passes that would be provided to eligible participants. Program launch is targeted for this fall.

Wood stove to heat pump update

The pilot wood stove to heat pump incentive program was implemented earlier this year as part of the launch of the 2017 wood stove exchange program. All five \$1,000 incentives being provided to qualified applicants have been allocated, and there are a few applicants on a waitlist. The success of this program suggests there is interest from the community in a continuation of these incentives. Further details on options for wood stove to heat pump exchange incentives are discussed in a separate report on air quality.

2016 Carbon offset purchase options

Staff research into available carbon offsets has identified a variety of options available on the open market that are verified to standards recommended by the “Becoming Carbon Neutral: Guidebook for BC Local Governments”. The verified projects in BC, typically forest conservation projects or landfill gas utilization projects, are available for purchase at \$15 to \$25 (CAD) per tonne while international projects are available for much less.

CVRD has budgeted \$47,223 (based on \$25 per tonne) and staff are recommending purchase of the lowest-cost option at \$1.50 (USD) per tonne from the Dempsey Ridge wind farm project in Oklahoma. This facility, also known as the Big Smile Wind Farm, has been in operation since 2012, generates enough clean energy to power more than 46,000 homes, and is displacing approximately 339,000 tonnes of CO₂ per year. This option will result in total offset purchase costs of approximately \$4,000 dependent on CAD-USD exchange rate, and staff recommend allocating the remaining 2016 carbon offset funds to the following projects which are discussed further below:

- \$22,000 – Region-wide home energy efficiency incentive program
- \$20,000 – Update to 2011 Corporate Energy Plan, with a focus on new and upcoming CVRD facilities.

Region-wide home energy efficiency program

The cooler conditions experienced this past winter generated a fair bit of discussion in the community about residential energy costs. Programs that promote increased home energy efficiency can help to reduce the burden utility costs can present to residents, while also reducing community GHG emissions, and stimulating the local economy through the utility cost savings that residents can now spend locally. The proposed home energy efficiency program would have two components. The first would include thirty \$500 rebates to Comox Valley homeowners that complete pre and post-retrofit EnerGuide home evaluations ([link](#)), allowing them to leverage existing BC Hydro ([link](#)) and/or FortisBC ([link](#)) rebate programs for home energy efficiency improvements. The second would include the addition of ten \$400 Oil to Heat Pump ([link](#)) top-up rebates to municipal areas of the Comox Valley, allowing residents in all areas of the Comox Valley to access up to \$2,100 in rebates for switching from oil heating to heat pumps. Funds remaining would be used for community engagement activities to encourage participation, including profiles of local residential energy conservation success stories.

Update to 2011 Corporate Energy Plan

The Corporate Energy Plan, completed and approved in 2011 ([link](#)), has guided the CVRD’s decision making around operational efficiencies that reduce corporate GHG emissions and work towards carbon neutrality. Implementation of many of the key actions outlined in the plan is complete, as was detailed in a 2015 report to the board ([link](#)). The corporate energy plan included a recommendation to review and update every two to three years. While a staff level review was completed and summarized in the 2015 report to the board, an update of the plan has not been completed. As the CVRD is in a period of growth with respect to its operations due to expansions of existing facilities and construction of new facilities, now is an opportune time to initiate an update of the plan. An updated corporate energy plan could also take into account changes to the federal and provincial government context regarding climate action, such as BC’s Climate Leadership Plan and the Pan-Canadian Framework on Clean Growth and Climate Change.

Options

In regards to 2016 budgeted carbon offset funds, the following options are presented for the board's consideration:

1. Achieve carbon neutrality for 2016 with the purchase of 1919 metric tonnes of verified carbon offsets from the Dempsey Ridge Wind Farm in Oklahoma at a cost of \$1.50 USD/MT, totalling approximately \$4,000 CAD. Remaining 2016 carbon offset funds will be allocated to a region-wide home energy efficiency program (\$22,000) and an update to the 2011 corporate energy plan (\$20,000).
2. Direct staff to allocate 2016 carbon offset funds in an alternate fashion.

Staff are recommending option 1.

In regards to the funding previously allocated to biodiesel facility construction, the following options are presented for the board's consideration:

1. Re-allocate \$25,720 in 2015 remaining carbon offset funds to a renewable energy infrastructure reserve fund, and direct staff to proceed with a suitability assessment of select CVRD facilities for installation of solar photovoltaic panels, and subsequent installation on the best ranked facility.
2. Leave the funding allocation unchanged, and direct staff to seek additional grant funding sources for a local biodiesel blending pump facility.

Staff are recommending option 1.

Financial factors

Beginning in 2012, the CVRD included in its financial planning process budget line items to meet its carbon neutral objectives, such that carbon emissions not reduced through the corporate energy plan are offset through the purchase of verified carbon offsets. A cost of \$25/tonne CO₂e of estimated emissions is included in budgets for CVRD functions, based on the current BC carbon tax rate of \$30 tonne CO₂e as well as the estimated cost of purchasing BC offsets.

For 2015 corporate emissions, CVRD staff were able to purchase verified offsets to reach carbon neutrality at a cost of \$1.50 USD/tonne on the international market. The remaining budgeted carbon offset funds have been used in local projects, such as corporate energy retrofits, the community carbon marketplace and a wood stove to heat pump conversion pilot program.

For 2016 emissions, confirmed at 1919 tonnes, \$47,223 is available to purchase offsets and/or fund local emissions reduction projects.

Measuring corporate energy use with the aim of reducing GHG emissions has additional benefits, including improved efficiency of corporate operations, which results in reduced utility costs.

Legal factors

The British Columbia climate action charter is not legally binding, but in being a signatory, the CVRD has the ability to access the CARIP. CARIP is a conditional grant that provides funding to signatories equivalent to one hundred per cent of the carbon taxes they pay directly. For 2016 operations, the CVRD's CARIP grant is approximately \$46,000.

Regional growth strategy implications

The Comox Valley regional growth strategy (RGS) reflects a long-term target of 80 per cent reduction of GHG emissions from 2007 levels by 2050, with a mid-term target of 50 per cent reduction by 2030.

The activities proposed in this report would work towards the following objectives of the RGS:

Objective 8A-5: Local governments should develop GHG reduction strategies for the operation, maintenance and construction of their buildings in the Comox Valley.

Objective 8-A: Reduce GHG emissions created by the building sector

Intergovernmental factors

All three member municipalities in the Comox Valley have signed the British Columbia climate action charter to become a carbon neutral local government.

Interdepartmental involvement

All CVRD functions are responsible for working toward reduced GHG emissions and carbon neutrality. Staff from the community services branch led the energy inventory with assistance from financial services.

Citizen/public relations

The public is consistently concerned about climate change and it is important that the CVRD show leadership and seek opportunities to reduce energy usage and related costs. As part of the CARIP requirements, a public report on the CVRD's climate action is prepared annually.

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