



Yard and Garden Organics Diversion:
Carbon Credits for Carbon Neutral Reporting 2015

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1.0 Compliance with Green Communities Carbon Neutral Framework Option 1 Profile

1.1 Yard and Garden Waste Composting – Profile Summary

Since 2007, the Cowichan Valley Regional District (CVRD) has provided free yard and garden waste drop-off at CVRD waste transfer facilities. This program has been successful in diverting organic waste from landfills to local composting facilities. These activities provide significant environmental benefit in the avoidance of landfill gas emissions.

When organic waste is placed in a landfill it decomposes gradually over decades emitting significant amounts of methane to the atmosphere. In contrast, composting decomposes material within one year and predominantly releases carbon dioxide. Since methane is 21 times more potent than carbon dioxide on a 100-year global warming potential basis, composting can reduce Greenhouse Gas (GHG) emissions by over 90% in contrast to sending the same waste to a landfill.

As such, the Green Communities Committee (GCC) recognizes municipal diversion of household organic waste as an important means of reducing BC GHG emissions. The Green Communities Household Organic Waste Composting Profile guidelines and emissions calculator provide an accounting framework and methodology to measure these reductions each year they occur for carbon reduction credits.

1.2 Baseline Year and Project Dates

Any organics diversion that occurred post-signing of the Climate Action Charter (September 2007) is eligible to be included in calculations. The BC Ministry of Environment has set a baseline year of 2006 to measure compost diversion against and under GCC Household Organic Waste Composting project profile, only *additional* organics above and beyond the 2006 baseline amount are eligible for credits.

1.3 Project Eligibility

The Cowichan Valley Regional District asserts that it meets all project eligibility criteria for the 2015 reporting year as required by the GCC Carbon Neutral Framework Compliance.

Requirements

Emission reductions are outside of the local government corporate emission boundary.

Emissions associated with solid waste disposal sites (landfills and composting facilities) are considered outside the traditional services boundary, according to the GCC Carbon Neutral Workbook.

Emission reductions have occurred before they are counted.

The emission reductions being claimed for 2015 are associated with additional organics diversion from 2007-2015 and have occurred before the 2015 calendar year.

Emission reductions are credibly measured.

GCC supported Option 1 projects are considered to meet this requirement and emission reductions have been calculated using the GCC provided calculator.

Emission reduction projects are beyond business as usual (BAU).

Option 1 projects (GCC supported) are considered to meet this requirement.

Accounting of emission reductions is transparent.

This public report provides details of the emission reduction accounting.

Emission reductions are only counted once.

The CVRD has calculated the emission reductions from the Yard and Garden waste stream based on regional waste flow data collected as part of its reporting responsibilities as a regional district. The emission reductions claimed in this report have not been previously committed or sold as emission reductions.

Project proponents have clear ownership of all emission reductions

The CVRD asserts that it has the exclusive right to the emissions reductions under this profile as it provides the service funding and, if not for the CVRD organics diversion service, such waste has traditionally been directed to landfills.

1.4 Contact Information

Contact information for the Project Designate and Developer are provided in the following table.

| | |
|-------------------|---|
| Project Designate | Name: Mark Kueber Title: General Manager, Corporate Services Phone: 250 746-2500 Email: mkueber@cvr.bc.ca |
| Project Contact | Name: Austin Tokarek Title: Senior Environmental Analyst ,Environmental Initiatives Division Phone: 250 746-2504 Email: atokarek@cvr.bc.ca |

2.0 Project Description

2.1 GHG Assertion

This report summarized the regional yard and garden waste diversion activities, as reported by the CVRD Solid Waste Division, between 2006 and 2015 inclusive.

During the crediting period from October 1, 2007 to December 31, 2015 the activity from this project resulted in 5,708 tonnes of CO₂ equivalent reduction from business as usual activities.

For the 2015 calendar year, the CVRD claims a 1,483 tonnes credit from these activities in order to become carbon neutral in its operations, carrying the remaining 965.1 tonnes of reduction credit for future year reductions.

2.2 Data and Calculations

2.2.1 Organic Waste Diversion Data

For the purpose of calculating diversion rates for organics, the GCC Project Profile specifies that only diversion above and beyond the amount diverted in the 2006 baseline year are eligible. Appendix A provides the calculations for the yard and garden waste diverted by the CVRD from 2007 to 2015, and the portions eligible for emissions carbon credits.

This data was sourced from the CVRD Solid Waste Management Division, who maintains auditable records of all of the solid waste streams passing through its transfer stations.

2.2.2 Using the Green Communities Organics Diversion Calculator

The GCC supplied diversion calculator specifies the following key inputs required to calculate carbon credits:

1. The landfill gas collection efficiencies of the landfill site that the diverted organics would have gone to:
 - The CVRD ships its landfill waste to Roosevelt Landfill in Washington State
2. The portion of Kitchen Scraps to Yard Waste Tonnage
 - The CVRD currently only has ownership of Yard and Garden Waste facilities at its transfer stations so only yard and garden waste was claimed for this period

The results of the GCC Organics Diversion Calculator are presented in the Emission Profile of Appendix A.

3.0 Ownership of Credits

The Cowichan Valley Regional District is solely responsible for funding and providing the yard and garden waste diversion bins at their transfer facilities. Further, since 2007 it has provided this as a free service to valley residents to encourage landfill diversion. As such, it claims full rights to the credits associated with the yard and garden organic waste diverted through its facilities and programs.

4.0 Project Co-Benefits

The largest co-benefit of this program is the reduction in cost and emissions from transporting the organics to a distant landfill. Furthermore, by keeping the yard and garden organics within the Cowichan Valley and composting it locally, more jobs are kept in the valley, organic matter is kept local and the natural organic cycle is maintained.

5.0 References and Supporting Documents

Metro Vancouver; “Household Organic Waste Composting in Metro Vancouver – Greenhouse Gas Emission Reductions and Green Community Carbon Credits for Carbon Neutral Reporting”, May 31, 2013

BC Climate Action Toolkit; “Carbon Neutral Local Government”

UBCM Green Communities Committee, 2015; “Becoming Carbon Neutral: A Guidebook for Local Governments in British Columbia.” Version 3, July 2015.

UBCM Green Communities Committee, 2012; “The Workbook - Helping Local Governments Understand How to Be Carbon Neutral in their Corporate Operations.”

UBCM Green Communities Committee, 2012; “Green Communities Carbon Neutral Framework Option 1 Profile: Household Organics Waste Composting.”

Province of British Columbia, 2007; “Climate Action Charter”

Appendix A: Tonnes of Organic Diverted

The Emissions Profile was calculated using the GCC provided Carbon Neutral Framework Option 1 Profile: Household Organics Waste Composting calculation spreadsheet.

Table 1 - 2006 Baseline Yard and Garden Tonnage

| Baseline | |
|----------|--------|
| Year | Tonnes |
| 2006 | 2350 |

Table 2 - 2007-2015 Yard and Garden Organics Diversion

| Organics Diversion Profile | | | Emissions Profile from Profile Calculator | | |
|----------------------------|-----------------|---------------------------------------|---|---------------------------------------|-----------------------------------|
| Year | Diverted Tonnes | Eligible Claim (Tonnes>2006 baseline) | Total Landfill Emission Avoided (Tonnes Co2e) | Composting Emissions (Tonnes of Co2e) | Carbon Credit Claim (Tonnes CO2e) |
| 2007 | 2,987 | 159 | 116 | 29 | 88 |
| 2008 | 3,775 | 1,425 | 998 | 257 | 741 |
| 2009 | 4,545 | 2,195 | 1,467 | 395 | 1,072 |
| 2010 | 4,038 | 1,688 | 1,073 | 304 | 770 |
| 2011 | 4,313 | 1,963 | 1,182 | 353 | 829 |
| 2012 | 3,923 | 1,573 | 893 | 283 | 610 |
| 2013 | 3,366 | 1,016 | 541 | 183 | 358 |
| 2014 | 4,386 | 2,036 | 1,008 | 366 | 642 |
| 2015 | 4,508 | 2,158 | 987 | 388 | 599 |
| Total | 35,841 | 14,213 | 8,266 | 2,558 | 5,708 |

* 2007 claim is 1/4 of the annual diversion since the Climate Action Charter was signed in September 2007

For the 2015 Calendar year total emissions from operations was 1,510 tonnes of CO₂e. A total of 1,483 tonnes of carbon credits from organics diversion is required to make the CVRD carbon neutral in its operations for the 2015 year, resulting in 965.1 carbon credit tonnes to be carried forward to future year claims.

Table 3 - Carbon Credits for Future Years

| | Tonnes of CO ₂ e Credit |
|---|------------------------------------|
| Total Solid Waste – Organics Diversion | 5,708 |
| Credit used in 2013 to reach carbon neutral in operations | (1,645.2) |
| Credit used in 2014 to reach carbon neutral in operations | (1,614.7) |
| Credit used in 2015 to reach carbon neutral in operations | (1,483) |
| Credit remaining for future years | 965.1 |

Appendix B: GCC Project Plan

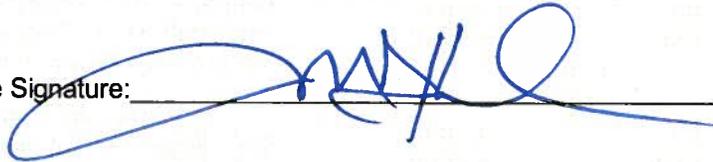
| Project Proponent Information | |
|---|---|
| Name of Local Government Project Proponent(s) | Cowichan Valley Regional District |
| Project Designate appointed to sign off on Project Plan | Name: Mark Kueber Title: General Manager, Corporate Services Phone: 250 746-2500 Email: mkueber@cvrd.bc.ca |
| Project Contact | Name: Austin Tokarek Title: Senior Environmental Analyst Phone: 250 746-2504 Email: atokarek@cvrd.bc.ca |
| Project Information | |
| Project title | CVRD Organics Diversion 2007-2015 |
| Option 1 Project Profile | Household Organic Waste Composting |
| Project description and objectives | Since 2007, the CVRD has provided free yard and garden waste drop off at its transfer stations and has diverted this material from landfill by having it composted by local companies. |
| Project co-benefits (Optional) | There is a reduction in cost and emissions from transporting the organics to a distant landfill. Furthermore, by keeping the yard and garden organics within the Cowichan Valley and composting it locally, more jobs are kept in the valley, organic matter is kept local and natural organic cycle is maintained. |
| Project start date | October 1, 2007 |

| Project Transparency: Accountability and Reporting | |
|---|--|
| Scope | <input checked="" type="checkbox"/> The Project Designate certifies that the project outlined in this Project Plan is outside of the scope of the local government's corporate emissions boundary as defined in the Carbon Neutral Workbook, as per the Project Eligibility Requirements outlined in Appendix 1 of the <i>Becoming Carbon Neutral</i> guidebook. |
| Counted Once | <input checked="" type="checkbox"/> The GHG reductions claimed from this project under the Carbon Neutral Framework have not been, and will not be, committed or sold as an emission reduction under any other alternate emission-offset scheme, as per the Project Eligibility Requirements outlined in Appendix 1 of the <i>Becoming Carbon Neutral</i> guidebook. |
| Ownership | <input checked="" type="checkbox"/> The local government proponent(s) claiming emission reductions from the Option 1 project outlined in this Project Plan have exclusive right to the GHG reductions that arise from the Option 1 project, as per the Project Eligibility Requirements outlined in Appendix 1 of the <i>Becoming Carbon Neutral</i> guidebook. |
| Verification | <input checked="" type="checkbox"/> The Project Designate understands that he / she will be required to sign off the annual Verification Template Report for this project to verify that the estimated GHG reductions from this project actually occurred during the year in which they will be claimed, as per the Project Eligibility Requirements outlined in Appendix 1 of the <i>Becoming Carbon Neutral</i> guidebook. |
| Reports | <input checked="" type="checkbox"/> The Project Designate, is aware of the public reporting requirements under the Climate Action Revenue Incentive Program (CARIP) and that after January 1, 2012, the CARIP reports will be revised to include information on total annual corporate emissions , the reductions being claimed from GHG projects undertaken under the Carbon Neutral Framework (Option 1 and 2) , and purchased offsets (Option 3) in order demonstrate carbon neutrality for any given year, as the Project Eligibility Requirements outlined in Appendix 1 of the <i>Becoming Carbon Neutral</i> guidebook. |

Project Plan: Authorization and Sign Off

The information provided in this Project Plan, is to the best of my knowledge correct and complete.

Designate Signature: _____



Date: _____

May 24, 2016

Title: **CVRD General Manager Corporate Services**

Appendix C: Self-Certification Form

| Project Proponent Information | |
|--|--|
| Name | Cowichan Valley Regional District |
| Project Designate | Name: Mark Kueber Title: General Manager, Corporate Services Phone: 250 746-2500 Email: mkueber@cvrld.bc.ca |
| Project Contact | Name: Austin Tokarek Title: Senior Environmental Analyst Phone: 250 746-2504 Email: atokarek@cvrld.bc.ca |
| Project Information | |
| Project Title | CVRD Yard and Garden Waste Composting: GHG Emission Reductions and Green Community Carbon Credits <input checked="" type="checkbox"/> Copy of Project Report Attached |
| Timing and Amount of reductions being claimed | The GHG emission reduction of 5,708 Tonnes CO ₂ equivalent are claimed from this project, from activities between September 27, 2007 and December 31, 2015. |
| Certification that the required work occurred | <input checked="" type="checkbox"/> I declare that the project work required to achieve the GHG reductions from this project as estimated by the project profile used, actually occurred during the years in which they are identified, and will be claimed in 2015 as per the Project Eligibility Requirements outlined in Appendix 1 of the Becoming Carbon Neutral Guidebook. In addition, any balance of GHG reductions earned and not required for offset in 2015 will be carried forward and used to balance CVRD corporate emissions in future years. |
| Self-Certification Template: Authorization and Sign off | |
| <p><i>The information provided in this Self Certification Template is to the best of my knowledge correct and complete.</i></p> <p>Designate Signature: </p> <p>Date: <u>May 24, 2016</u></p> <p>Title: <u>CVRD General Manager Corporate Services</u></p> | |