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Brian Joseph McFarland

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CARBON REDUCTION PROJECTS AND THE CONCEPT OF ADDITIONALITY

by Brian Joseph McFarland*

INTRODUCTION

Carbon reduction projects follow a cycle that includes conceptualization, due diligence, implementation, documentation, audit or validation, and finally certification, with the eventual issuance of verified, serialized carbon reduction credits, also known as carbon offsets. To fulfill this process, there are several technical elements that must be addressed: monitoring or measurement, reporting, and verification (“MRV”), permanence (i.e. ensuring the project’s duration), leakage (i.e. addressing negative and identifying positive offsite impacts), and additionality.

Additionality is a test that a carbon reduction project must meet to ensure the project would not have been implemented without the revenue of the carbon markets.¹ This test of additionality must be satisfied if the project is being submitted to the voluntary carbon markets—for which, voluntary buyers want to be ensured their donations actually matter for a project—or to the compliance markets since buyers need to be confident that regulators will accept their carbon reduction purchase.

It is important to further note that all of the most prominent carbon reduction certification standards—again, whether a compliance market under the Kyoto Protocol or an internationally recognized voluntary standard—require some type of additionality test. This includes, but is not limited to, the following certification standards: the American Carbon Registry (“ACR”),² Center for Resource Solutions (“CRS”),³ Green-e Climate Protocol for Renewable Energy,⁴ Chicago Climate Exchange (“CCX”),⁵ Clean Development Mechanism (“CDM”),⁶ Climate Action Reserve (“CAR”),⁷ Climate, Community and Biodiversity Standard (“CCBS”),⁸ Gold Standard,⁹ Regional Greenhouse Gas Initiative (“RGGI”),¹⁰ and the Verified Carbon Standard (“VCS”).¹¹

Additionality is an important requirement because if non-additional (i.e. “business-as-usual”) projects are eligible for carbon finance, then the net amount of greenhouse gas emissions will continue to increase and the environmental integrity of carbon reduction projects will be called into question. For example, if a project was already far exceeding its industry average return on investment and was implemented over fifty years ago when no carbon markets existed, why should this particular project also be eligible for additional revenue from the carbon markets? Similarly, if an activity was legally required, then why should this activity of a regulated entity also be eligible for additional revenue from the carbon markets? The challenge with additionality, however, is that one must prove a counterfactual argument (i.e. what would have otherwise happened in the absence of a

project) to ensure the project provides carbon reductions that would not have otherwise occurred. This article explores the different concepts of additionality, while acknowledging its controversial elements and proposing inclusion of some important considerations to ensure net emissions reductions.

LEGAL OR REGULATORY ADDITIONALITY

Legal additionality, or what is sometimes referred to as regulatory additionality or surplus, is perhaps the most objective type of additionality. If a law exists and a given activity is regulated, then the project is most likely not eligible for carbon finance. Therefore, for a project to meet the legal additionality standard, it must provide carbon reductions beyond those required by law.¹²

To put this in context, the U.S. Environmental Protection Agency (“EPA”) regulates large municipal solid waste (“MSW”) landfills, and according to the Climate Action Reserve’s Landfill Project Protocol Version 3.0, “[t]here are several EPA regulations for MSW landfills that have a bearing on the eligibility of methane collection and destruction projects as voluntary GHG reduction projects.”¹³

Two challenges with legal additionality are that on one hand, the concept might create perverse incentives, and on the other hand, sometimes following the law is not common practice. With the first idea in mind, the Montreal Protocol is an international treaty designed to phase out the production of ozone depleting substances (“ODS”).¹⁴ While the United States, Canada, and European nations have phased out the production of hydrofluorocarbons (“HFC”), which are ODSs and greenhouse gases, the largest contributor of certified emission reductions (“CER”) under the Kyoto Protocol’s Clean Development Mechanism are from HFC projects in China and India.¹⁵ Since legal additionality would rule out the eligibility of HFC projects hosted in China and India if these countries were to pass

* Brian McFarland, who recently finished a dual graduate degree in Business Administration and Global Environmental Policy from American University, is now Carbonfund.org’s Carbon Projects Manager. While finishing his Psychology and International Development undergraduate degree from Clark University, Brian conducted environmental fieldwork in Mexico, Costa Rica, Kenya, and Brazil. During graduate school, Brian also volunteered for the Smithsonian Institution, the United Nations Global Compact, and the U.S. Department of State. In addition, Brian is currently a member of the Leonardo Academy’s Emissions Inventories, Offsets and Reduction Credits Standard Committee, a member of the Metropolitan Washington Council of Governments’ Air and Climate Public Advisory Committee, and a Canadian Standards Association (“CSA”) Standards Certified Greenhouse Gas (“GHG”) Inventory Quantifier. The opinions expressed in this paper are those of the author and do not necessarily represent the views of Carbonfund.org.

domestic laws eliminating the production of HFCs, they have little incentive to begin regulating HFCs. If they did pass regulations, China and India would experience a reduction of foreign investment towards the purchase of these carbon reduction credits and would need to use their own public funds to phase out HFCs. Due to the perception that manufacturers are actually producing excess HFCs, the European Union Emission Trading Scheme will no longer accept these HFC reduction credits beginning in 2013.¹⁶ Another example of this legal additionality challenge is the tough predicament a government might face when contemplating the passage of a strict feed-in tariff or an aggressive renewable portfolio standard. Such a passage would effectively legally require an increase in renewable energy production, however, there would be fewer carbon reduction credits from these renewable energy sources eligible for purchase from international buyers.

On the second challenge of additionality, there are legal reserve requirements on private property in Brazil. Depending on the region (e.g. Amazon Region versus Cerrado Region), a landowner is restricted from using twenty to eighty percent of his or her land.¹⁷ However, it is a somewhat common practice—particularly in the remote Amazon—to illegally clear forests from the legal reserve.¹⁸ Now, if such practices are deemed to be common, should legal additionality still apply and thus prevent the reforestation of this fallow land using carbon finance?

Corruption also presents challenges for ensuring the legal additionality of a project. There are currently carbon reduction projects either certified or under development in Ethiopia, Nicaragua, the Philippines, Kenya, and Venezuela.¹⁹ Yet, Transparency International's Global Corruption Report 2009 rates Ethiopia as the 126th most corrupt country out of 180 countries, Nicaragua as the 134th, the Philippines as the 141st, Kenya as the 147th, and Venezuela as the 158th.²⁰ Where projects provide much needed financing in developing countries with already corrupt infrastructures, there may be a disincentive to upgrade or improve legal frameworks that could reduce the number of carbon reduction projects.

The evolving regional compliance carbon markets of the U.S.—which are the Western Climate Initiative (“WCI”), the Regional Greenhouse Gas Initiative (“RGGI”), and the Midwestern Greenhouse Gas Reduction Accord (“Accord”)—have Canadian Provinces and Mexican States as either participants or observers.²¹ As these regional programs transform, it will be interesting to see how state or national laws, and thus legal additionality, will be applied.

COMMON PRACTICE OR TECHNOLOGICAL ADDITIONALITY

Common practice additionality, which could incorporate either the technological or market penetration of a given project type based on its geography, is another objective additionality test. The aspect of geography is important because what is prevalent in one location—for example, wind turbines in Texas or solar photovoltaic systems in California—might not be so prevalent in other locations (i.e. such as New Hampshire or Alaska).

According to the American Carbon Registry's standard, common practice is determined by whether there is “widespread deployment of the project . . . within the relevant geographic area.”²² Similarly, the Verified Carbon Standard defines it as one which is “not common practice in the sector/region, compared with projects that have received no carbon finance.”²³

Yet, how does one define common practice and what specifically would be the particular geographic focus (i.e. a country, state, local electric grid)? Perhaps one of most controversial examples surrounding common practice was the Chicago Climate Exchange's acceptance of soil conservation carbon reduction projects (i.e. also known as no-till), which were previously enrolled in the U.S. Department of Agriculture's Conservation Reserve Program.²⁴ Under this program, farmers were rewarded by the purchase of their carbon reduction credits for activities that they were already undertaking without revenue from the carbon markets.²⁵ If a regulated industry is allowed to emit greenhouse gas emissions because they are supporting non-additional carbon offset projects, then the environmental integrity of the system should be called into question because the net greenhouse gas emissions will continue to increase. Climate Action Reserve (“Reserve”) aptly points out that there are many difficulties in actually defining the common practice of a region.²⁶

According to Derek Six, the Portfolio Manager for Environmental Credit Corporation, the best assessment of additionality would be the use of a market penetration approach.²⁷ Such an approach, which is similar to common practice, would incorporate knowledge and technology barriers to implementation, along with financial aspects of additionality.²⁸ For example, agricultural methane destruction or agricultural methane gas-to-energy projects are only installed on about 0.5% of U.S. farms.²⁹ Thus under a market penetration approach, all agricultural methane destruction and agricultural methane gas-to-energy projects would be eligible for carbon finance whether or not there were projects clustered in a specific region (e.g. California) or whether a particular project had a slightly higher financial return (i.e. financial additionality).

FINANCIAL ADDITIONALITY

Many carbon market participants are averse to the concept of financial additionality, which is much more subjective than legal additionality or common practice. Likewise, financial additionality is difficult to determine due to matters of confidentiality, proprietary internal business decisions, and the potential use of arbitrary metrics. The Clean Development Mechanism, which refers to financial additionality as the investment analysis, considers whether the project would have been financially attractive without the revenue from carbon reduction credits.³⁰

The Verified Carbon Standard considers financial additionality, which it defines as an investment barrier and a subset of implementation barriers.³¹ The American Carbon Registry also considers financial additionality a subset of implementation barriers and asks whether funding from carbon reduction credits will incentivize the project's implementation.³²

Confidential and proprietary internal business matters that make financial additionality a subjective and difficult assessment include, but are not limited to:

- Capital budgeting decisions (i.e. which projects will get funded and why?)
- Financing sources (e.g. banks, internal funds, venture capitalists)
- Portfolio of available projects (i.e. what alternative investments/projects are possible?)
- Required internal rate of return (“IRR”), return on assets (“ROA”), return on equity (“ROE”), and/or payback period (i.e. which metric does a firm use and what is the requirement?)

While the Clean Development Mechanism has an extensive discussion on appropriate metrics for financial additionality (i.e. discount rates and benchmarks), arbitrary metrics such as the following could be used as justification for allowing or not allowing a project to count as eligible for carbon finance:

- Companies of the same size (e.g. in terms of money and/or employees)
- Geographical location (e.g. country, sub-national, local electric grid)
- Length of time company is in business
- Public vs. private ownership

This said, how do you compare a small, specialized renewable energy company to a large, diversified provider? Similarly, do start-ups differ from “well-established” companies enough to present a challenge when comparing financial additionality thresholds? Also, how does the ownership structure (i.e. non-profit, limited liability corporation, type C corporation, public-owned entity, joint-ownership) impact financial decisions and thus, financial additionality?

Applying financial additionality across a broad spectrum of project types is another significant challenge, posing many serious questions. Likewise, why should carbon markets reward projects that demonstrate the poorest financials? If two different projects existed and with one thousand dollars, one could reduce one thousand metric tons of carbon dioxide and the other could reduce one hundred metric tons, why should the one hundred metric tons project be considered more financially additional? On the other hand, why reward projects that already have “superior” returns and that existed before the formation of carbon markets (i.e. a question which relates to voluntary buyers wanting their donations to matter)?

Financial additionality should be phased out of future certification standards and new revisions of current certification standards, a position supported by Green-e Climate.³³

PROJECT-BY-PROJECT ADDITIONALITY

Under the project-by-project test for additionality, each project individually undergoes a series of additionality tests according to the given standard. Two main standards, which apply a project-by-project additionality test, are the Clean Development Mechanism and the Verified Carbon Standard. The Clean Development Mechanism is the carbon reduction standard for

Certified Emission Reductions (“CER”) for the Kyoto Protocol’s international compliance market.³⁴ In contrast, the Verified Carbon Standard is the leading voluntary carbon markets standard, in terms of market share, and has adopted methodologies from the CDM.³⁵

Essentially, project proponents—whether referring to investors, project developers, landowners or buyers—need to assess whether each and every individual project meets the additionality tests. Such a process can be expensive, time-consuming (i.e. reduces scalability and time-to-market), and difficult for both the general public and local communities to grasp. Furthermore, it is difficult for auditors to determine an individual project’s subjective assertions, especially with regard to financial additionality.

PERFORMANCE OR SECTORAL ADDITIONALITY

Many current and evolving certification standards—including the Regional Greenhouse Gas Initiative, the Western Climate Initiative, and the Climate Action Reserve—are adopting performance or sectoral approaches to additionality. Essentially, such performance or sectoral approaches use a uniform additionality test or benchmark, which could be based on an industry or geographic region. It is important to note, the same additionality criteria—such as legal, common practice/technology, and financial—can be applied to a performance or sectoral approach, the main difference is that such criteria are not uniquely applied to each single project. Under the Regional Greenhouse Gas Initiative (“RGGI”) offset projects may not be government ordered projects, may not receive incentives from RGGI auction proceeds, and must meet certain requirements to qualify.³⁶

Recent discussions of the WCI indicate that it will attempt to set a standardized baseline for offset protocols that reflect the strictest regulatory and legal requirements.³⁷ The Climate Action Reserve uses standardized performance based tests for additionality because they are administratively easier to implement and less subjective.³⁸

For the level of scalability required to address global climate change, there needs to be a near-full transition to sectoral or performance benchmarks for additionality. To this end, one of the decisions made at the sixteenth session of the Conference of the Parties of the United Nations Framework Convention on Climate Change in Cancun, Mexico, was for the Clean Development Mechanism to work towards standardized baselines and additionality tests.³⁹ Similarly, the Verified Carbon Standard has convened a steering committee, which is developing “VCS requirements and guidance on performance benchmark and technology test approaches to baselines/additionality.”⁴⁰

CONCLUSION

Carbon reduction credits, also known as carbon offsets, are an effective cost-containment mechanism and have the potential to produce greenhouse gas reductions alongside a host of co-benefits (e.g. local jobs, technology transfer, reforestation critical wildlife habitat). However, the general public, regulators, and environmentalists do not want to hear, “well we were already doing the project and we are doing nothing different, but now

we are getting revenue from the carbon markets.” To ensure overall reductions in greenhouse gas emissions, additionality is a useful technical tool to ensure the integrity of carbon reduction

projects, but certification standards should be less concerned about financial additionality and more focused on transitioning to sectoral or performance approaches.



Endnotes: Carbon Reduction Projects and the Concept of Additionality

¹ See WORLD BUS. COUNCIL FOR SUSTAINABLE DEV., CDM PROJECT DEVELOPERS WORKSHOP 6 (2005), <http://www.wbcsd.org/DocRoot/oMH7wF8hI2xp8Upd-jTQY/additionality.pdf>.

² See *Standards and Methodologies*, AM. CARBON REGISTRY (last visited Jan. 25, 2011) <http://www.americancarbonregistry.org/carbon-accounting>.

³ See CTR. FOR RES. SOLUTIONS, <http://www.resource-solutions.org> (last visited Feb. 27, 2011).

⁴ See *Climate Standards and Governing Documents*, GREEN-E, http://www.green-e.org/getcert_ghg_standard.shtml (last visited Jan. 25, 2011). CRS also operates the Green-e Energy program to certify Renewable Energy Certificates (“RECs”), which are in a different environmental asset class than carbon reduction credits. There are different mechanisms—such as technology type and project start date—to determine eligibility of REC projects.

⁵ *CCX Offsets Program*, THE CHICAGO CLIMATE EXCHANGE, <http://theccx.com/content.jsf?id=23> (last visited Jan. 25, 2011).

⁶ *CDM Methodologies*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, <http://cdm.unfccc.int/methodologies/index.html> (last visited Jan. 25, 2011).

⁷ *Protocols*, CLIMATE ACTION RESERVE, <http://www.climateactionreserve.org/how/protocols/> (last visited Jan. 25, 2011).

⁸ *The CCB Standards*, CLIMATE, COMMUNITY & BIODIVERSITY ALLIANCE, <http://climate-standards.org/standards/index.html> (last visited Jan. 25, 2011).

⁹ *Gold Standard Version 2.1*, GOLD STANDARD, <http://www.cdmgoldstandard.org/Current-GS-Rules.102.0.html> (last visited Jan. 30, 2011).

¹⁰ *Offset Requirements*, REGIONAL GREENHOUSE GAS INITIATIVE, http://rggi.org/market/offsets/offset_requirements (last visited Jan. 25, 2011).

¹¹ *Methodologies*, VERIFIED CARBON STANDARD, <http://www.v-c-s.org/methodologies.html> (last visited Jan. 25, 2011).

¹² For example, the American Carbon Registry’s standard asks the following question: “Regulatory Surplus: Is there an existing law, regulation, statute, legal ruling, or other regulatory framework in effect now or as of the project start date that mandates the project or effectively requires the GHG emissions reductions? Yes = Fail; No = Pass.” AM. CARBON REGISTRY, AM. CARBON REGISTRY 2.1, at 23 (2010), <http://www.americancarbonregistry.org/carbon-accounting/ACR%20Standard%20v2.1%20Oct%202010.pdf>. Similarly, the Verified Carbon Standard states: “Test 1—The Project Test: Step 1: Regulatory Surplus: The project shall not be mandated by any enforced law, statute or other regulatory framework.” VCS ASSOCIATION, VOLUNTARY CARBON STANDARD 2007.1, at 16 (2008), http://www.v-c-s.org/docs/Voluntary%20Carbon%20Standard%202007_1.pdf. The full name of the VCS changed from Voluntary Carbon Standard to Verified Carbon Standard in 2011; therefore reports cited include the former designation while websites include the latter.

¹³ CLIMATE ACTION RESERVE, LANDFILL PROJECT PROTOCOL VERSION 3.0, at 9 (2009), http://www.climateactionreserve.org/wp-content/uploads/2011/01/Landfill_Project_Protocol_V3.0_010411_Package1.pdf. “These regulations include:

- New Source Performance Standards (NSPS) for MSW Landfills, codified in 40 CFR 60 subpart WWW – Targets landfills that commenced construction or made modifications after May 1991
- Emission Guidelines (EG) for MSW Landfills, codified in 40 CFR 60 subpart Cc. – Targets existing landfills that commenced construction before May 30, 1991, but accepted waste after November 8, 1987
- The National Emission Standards for Hazardous Air Pollutants (NESHAP), codified in 40 CFR 63 subpart AAAA – Regulates new and existing landfills.”

¹⁴ Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 1522 U.N.T.S. 3, 1 as amended at London 1990, Copenhagen 1992, Vienna 1995, Montreal 1997, Beijing 1999 (2000), <http://www.unep.org/ozone/pdfs/montreal-protocol2000.pdf>.

¹⁵ See *India’s Growing Carbon Offset Market*, REUTERS, June 22, 2010, [http://cdm.unfccc.int/Issuance/cers_iss.html](http://in.reuters.com/article/2010/06/22/idINIndia-49524120100622?feedType=RSS&feedName=topNews&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3AReuters2FINtopNews28News2FIN2FTopNews29; see also Issuance Certified Emission Reductions (CERs), UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, <a href=) (last visited Feb. 27, 2011) (listing all credits issued under CDM).

¹⁶ Press Release, Europa, Emissions Trading: Commission Welcomes Vote to Ban Certain Industrial Gas Credits (Jan. 21, 2011), <http://europa.eu/rapid/press-ReleasesAction.do?reference=IP/11/56>.

¹⁷ Lee Alston & Bernardo Mueller, *Legal Reserve Requirements in Brazilian Forests: Path Dependent Evolution of De Facto Legis.*, 8 REVISTA ECONOMIA 25, 26 (Dec. 2007), http://www.anpec.org.br/revista/vol8/vol8n4p25_53.pdf.

¹⁸ See generally Rhett Butler, *Deforestation in the Amazon*, MONGABAY, <http://www.mongabay.com/brazil.html> (last visited Jan. 25, 2011).

¹⁹ See, e.g., *The Kasigau Corridor REDD Project – Phase I Rukinga Sanctuary*, VERIFIED CARBON STANDARD, <https://vcsprojectdatabase1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=562> (last visited Feb. 25, 2011) (providing details of a project in Kenya); *Gold Standard CDM/JI Projects*, THE GOLD STANDARD, <https://gs1.apx.com/myModule/rpt/myrpt.asp?r=113> (last visited Feb. 25, 2011) (listing projects in Venezuela, Philippines, Nicaragua, Kenya, and Ethiopia); *CCB Projects*, THE CLIMATE, COMMUNITY & BIODIVERSITY ALLIANCE, <http://www.climate-standards.org/projects/index.html> (last visited Feb. 25, 2011) (listing projects in Kenya, Nicaragua, Philippines, and Ethiopia).

²⁰ TRANSPARENCY INT’L, GLOBAL CORRUPTION REPORT 176, 184, 227, 243, 290 (2009), <http://www.transparency.org/content/download/46187/739801>.

²¹ See *Map of WCI Partners and Observers*, W. CLIMATE INITIATIVE (2010), <http://www.westernclimateinitiative.org/wci-partners-and-observers-map>.

²² AM. CARBON REGISTRY, *supra* note 12, at 23.

²³ VCS ASSOCIATION, *supra* note 12, at 16.

²⁴ See *Chicago Climate Exchange*, THE CLIMATE INST., http://climate.org/climatelab/Chicago_Climate_Exchange (last visited Jan. 25, 2011).

²⁵ Jeff Goodell, *Capital Pollution Solution?*, N.Y. TIMES, July 30, 2006, http://www.nytimes.com/2006/07/30/magazine/30carbon.html?pagewanted=3&_r=1.

²⁶ See CLIMATE ACTION RESERVE, CLIMATE ACTION RESERVE PROGRAM MANUAL 9 (Mar. 16, 2010), http://www.climateactionreserve.org/wp-content/uploads/2009/04/Climate_Action_Reserve_Program_Manual_031610.pdf.

²⁷ Interview with Derek Six, Portfolio Manager, Environmental Credit Corp (Dec. 8, 2010).

²⁸ *Id.*

²⁹ *Id.*

³⁰ See CDM-EXECUTIVE BOARD, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, TOOL FOR THE DEMONSTRATION AND ASSESSMENT OF ADDITIONALITY 5 (2008), <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-v5.2.pdf>.

³¹ VCS ASSOCIATION, *supra* note 12, at 16.

³² AM. CARBON REGISTRY, *supra*, note 12, at 23.

³³ See CTR. FOR RESOURCE SOLUTIONS, GREEN-E CLIMATE PROTOCOL FOR RENEWABLE ENERGY 6 (2010), <http://www.green-e.org/docs/climate/Green-eClimate-ProtocolforRenewableEnergy.pdf>.

³⁴ *Clean Development Mechanism*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php (last visited Jan. 25, 2011).

³⁵ To access the individual Project Design Documents (“PDDs”) and see specifically how project-by-project additionality is applied, see *Project Cycle Search*, CLEAN DEVELOPMENT MECHANISM, <http://cdm.unfccc.int/Projects/projsearch.html> (last visited Feb. 25, 2011); *Public Reports Access*, VERIFIED CARBON STANDARD, <http://www.vcsprojectdatabase.org/resources/AccessReports.asp> (last visited Feb. 25, 2011).

³⁶ *Offset Requirements*, REGIONAL GREENHOUSE GAS INITIATIVE, http://rggi.org/market/offsets/offset_requirements (last visited Jan. 15, 2011).

³⁷ See W. CLIMATE INITIATIVE, OFFSETS SYSTEM ESSENTIAL ELEMENTS FINAL RECOMMENDATIONS PAPER 4 (2010), <http://www.westernclimateinitiative.org/component/remository/func-startdown/277/>.

³⁸ CLIMATE ACTION RESERVE, *supra* note 26, at 7.

³⁹ See generally *Report of the 58th Meeting of the CDM Executive Board Released*, IISD LINKAGES (Nov. 26, 2010), <http://www.iisd.ca/recent/recentmeetings.aspx?id=5>.

⁴⁰ *New Requirements and Rules Being Developed by the VCSA*, VERIFIED CARBON STANDARD, <http://v-c-s.org/methodologies.html> (last visited Jan. 15, 2011).