



## OFFSETS

Once internal mitigation opportunities have been maximized, carbon markets provide another option for businesses to reduce their carbon footprints and support emission reduction projects. This fact sheet answers common questions about what types of projects can generate offsets, how reputable offsets are created, and how business can use them.

### WHAT ARE GREENHOUSE GAS OFFSETS?

A greenhouse gas (GHG) or “carbon” offset is a unit of carbon dioxide-equivalent (CO<sub>2</sub>e)<sup>1</sup> that is reduced, avoided, or sequestered to compensate for emissions occurring elsewhere. These offset credits, measured in tons, are an alternative to direct reductions for meeting GHG targets in a cap-and-trade system. In some systems, regulated facilities can buy offset credits from projects located in sectors or countries not legally required to reduce their emissions. The cost of meeting the GHG reduction targets of a cap-and-trade program can be reduced by buying offsets in cases where reducing GHG emissions at uncapped facilities or sectors is less costly than at capped sources. Many businesses and organizations currently buy GHG offsets to help meet voluntary commitments to reduce their GHG emissions.

### WHAT QUALIFIES AN ACTIVITY AS AN OFFSET PROJECT?

There are five commonly agreed-upon criteria that an offset credit must meet to ensure environmental integrity.

**1. Real:** GHG offsets must represent one ton of CO<sub>2</sub>e greenhouse gas emissions reduced or sequestered as a result of an activity undertaken for the purpose of reducing emissions. In practice, this ensures that total GHG emissions to the atmosphere are lower due to the implementation of the offset project, relative to a business-as-usual baseline scenario. Determining theoretical baseline emissions in the absence of the offset project (i.e., under the business-as-usual baseline) is not an exact science, so all baselines must be accurately and conservatively defined. The quantity of emission reductions should not be inflated by incomplete accounting, which could occur if emissions were reduced at one location but increased elsewhere as a result (known as emissions “leakage”).

**2. Permanent:** Emission reductions or removals are permanent if they are not reversible; that is, the emissions can’t be re-released into the atmosphere. The issue of permanence applies to projects where emissions are sequestered in ways that could be reversed over time, such as in forests (which can release car-

bon through fires or decay) and through geological sequestration (where gases could potentially leak unexpectedly). There are mechanisms to account for or reduce the risk of reversal, though they can bring additional costs. These include buying insurance in case of emissions reversals, establishing a reserve “buffer” pool of credits or issuing temporary credits from the project that are valid for a period of time but must be re-certified or replaced in the future.

**3. Additional:** In order to generate offsets, a project must be a response to the incentives provided by a carbon offset market. Activities that would have happened without such incentives are business-as-usual and do not represent new emission reductions. Since offsets are used to compensate for continued or increased emissions elsewhere, if they are not additional then their use allows a net increase in GHG emissions. Additionality is ultimately a subjective judgment. Regulatory approaches attempt to ensure that additional projects are able to get credits while weeding out those that would occur in the absence of the incentive provided by the carbon market.<sup>2</sup> For example, if regulation requires a landfill to capture the methane it produces, it cannot earn offsets for this activity. Since the landfill would have captured the emissions anyway, it is business-as-usual and not additional.

There are two primary ways additionality can be determined in existing offset programs: on a project-specific basis or through standardized criteria. **Project-specific additionality** is determined through an evaluation of the proposed project against a range of alternative scenarios. The scenario deemed most financially viable and/or probable in the absence of the incentive provided by the carbon market is considered the business-as-usual scenario from which offset credits are calculated.

**Standardized additionality criteria** evaluate projects against a set of consistent criteria for a particular project type and are intended to exclude non-additional projects, without developing a business-as-usual scenario for each individual project. This can include requirements that the project is not mandated by law, is not common practice (based on technology use or activity data),

1. Quantities of non-CO<sub>2</sub> greenhouse gases are often converted to the “CO<sub>2</sub>-equivalent” tons denotation, calculated based on the strength of their atmospheric forcing effects per ton (as compared to CO<sub>2</sub>).

2. Broekhoff and Zyla, 2008.

involves a specific pre-approved technology, and/or has an emissions rate lower than most others in its class.

The Clean Development Mechanism currently uses a project-specific additionality test to certify offsets for use to meet reduction obligations under the Kyoto Protocol. Other systems such as the Climate Action Reserve, EPA Climate Leaders, and the Regional Greenhouse Gas Initiative use standardized additionality approaches.

**4. Verifiable:** Credible offset programs require that emission reductions be monitored and regularly verified by an independent, qualified third party.

**5. Enforceable:** One credit can only credibly offset one ton of CO<sub>2</sub>e emissions; as a result, it must be tracked and it must be possible to enforce its ownership and use in order to avoid double counting. This is usually done via a registry.

#### **WHO CAN IMPLEMENT OFFSET PROJECTS AND EARN EMISSIONS REDUCTION CREDITS?**

Offset owners must be able to claim the legal right to the emission reductions of the project, usually through legal or contractual means. In addition, most offsets bought and sold today are certified by a third party certifier, who provides a “seal of approval” that the offset is providing the promised emission reduction benefit. Currently, U.S. facilities that are not operating under a regional GHG reduction program could attempt to claim offset credits. Once a federal climate program is in place, U.S. facilities will no longer be able to claim offset credits if they are located in a regulated sector.

#### **HOW ARE OFFSETS MEASURED AND TRACKED? WHAT ARE STANDARDS, VERIFIERS, AND REGISTRIES?**

There are two primary markets for offsets: the regulatory market and the voluntary market. In regulatory markets, such as the Regional Greenhouse Gas Initiative, government agencies are responsible for establishing the standards for offset crediting and programmatic structure. In the voluntary market, the predominant market to date in the United States, there is no common standard for offset measurement and verification. Various voluntary standards have been developed to provide independent quality assurance. A standard provides a detailed list of eligibility requirements for projects and methodologies for calculating a project’s emission reductions. Most rely on third party auditors, called verifiers, to perform the due diligence and attest to the veracity of the information provided by the project in its application. It must be verified that the project as a whole meets the standard, and that each individual offset credit issued is based on data that meets the requirements of the registry or policy program.

#### **FOR A COMPANY WITH A VOLUNTARY COMMITMENT TO REDUCING ITS CARBON FOOTPRINT, WHAT VALUE DO OFFSETS PROVIDE IN GHG REDUCTION STRATEGIES?**

Purchasing and retiring (that is, not re-selling) high-quality offsets can be a useful component of an overall voluntary corporate emissions reduction strategy once internal abatement opportunities have been realized. The cost comparison of internal abatement versus offsets as a strategy is accurate only if evaluated over an appropriate time scale, such as the lifetime of the internal abatement (with appropriate discount rates) and if it includes all of the additional non-CO<sub>2</sub> benefits of the internal abatement (such as greater efficiency or lower fuel costs). Also, it should be noted that it is more likely that future climate programs will recognize internal GHG abatement rather than offsets.

#### **WHICH STANDARD SHOULD I BUY FROM OR USE TO CERTIFY MY PROJECT? WHICH IS LIKELY TO BE ACCEPTED IN A FEDERAL PROGRAM?**

There is currently no bottom line on this question. The leading U.S. standards (ranked by the size of the 2009 market) include the: Climate Action Reserve (CAR), Voluntary Carbon Standard (VCS), Chicago Climate Exchange (CCX), American Carbon Registry (ACR), and The Gold Standard (GS). In general it is more likely that offsets certified under existing mandatory cap-and-trade systems (such as the Northeast’s Regional Greenhouse Gas Initiative (RGGI) or California’s AB 32) would be recognized automatically under a federal climate program, but this is not certain. Project types within sectors regulated by cap-and-trade policy will not be eligible to generate offsets because their emissions are covered by the cap. For instance, grid-connected renewable energy and energy efficiency projects are highly likely to be covered by a federal program and thus would be ineligible to produce offsets.

#### **ADDITIONAL RESOURCES:**

Broekhoff, Derik and Kathryn Zyla, 2008. *Outside the Cap: Opportunities and Limitations of Greenhouse Gas Offsets*. World Resources Institute Climate and Energy Policy Series. December 2008 [http://pdf.wri.org/outside\\_the\\_cap.pdf](http://pdf.wri.org/outside_the_cap.pdf)

Kelly, Alexia and Bianco, Nicholas “Options for Addressing Early Action Greenhouse Gas Reductions and Offsets in U.S. Federal Cap-and-Trade Policy”: WRI Working Paper. August, 2009 [http://pdf.wri.org/working\\_papers/options\\_for\\_early\\_action\\_greenhouse\\_gas\\_reductions.pdf](http://pdf.wri.org/working_papers/options_for_early_action_greenhouse_gas_reductions.pdf)

Offset Quality Initiative (OQI), 2008. *Ensuring Offset Quality: Integrating High Quality Greenhouse Gas Offsets into North American Cap-and-Trade Policy*. July 2008. [http://www.offsetqualityinitiative.org/pdfs/OQI\\_Ensuring\\_Offset\\_Quality\\_7\\_08.pdf](http://www.offsetqualityinitiative.org/pdfs/OQI_Ensuring_Offset_Quality_7_08.pdf)

Authors: Jenna Goodward and Alexia Kelly