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**Prabhu Dayal**

## **Standardization of Verified Emission Reductions**

*By Prabhu Dayal, Ph.D.  
President, C TRADE  
UtiliPoint Affiliated Consultant*

An emerging global market is developing for "verified emission reductions" (VERs), emission reductions that are created outside of the standardized procedures and methodologies for certified emission reductions (CERs) under the Clean Development Mechanism (CDM) of the Kyoto Protocol.

Although a national law or set of regulations in the United States to control greenhouse gas (GHG) emissions does not yet exist, several states have adopted programs or policies to reduce, verify and register reductions in GHG emissions. These policies, along with ongoing voluntary programs developed internationally, have stimulated growth in the market for VERs.

International companies are trading these non-Kyoto compliant emission reductions. Non-compliance might include "additionality" or "leakage" criteria, organizations that lack host country approval and projects that are just too small to meet the criteria that traditionally apply for certified emission reductions (CERs). In the absence of approved protocols and procedures for these types of emission reductions, VERs are now being standardized by several companies and organizations for use in the voluntary market; generally the value of these VERs are lower than CERs.

This article identifies some of the emerging players in the VER standardization market both internationally and domestically.

### **What Are Verified Emission Reductions (VERs)**

An emission reduction (ER) is a financial instrument that can be used to transfer GHG emissions reduction rights in the national and international marketplace to businesses and other entities that need them to "offset" (or create a "net" reduction of) their own emissions. Sales of ERs occur because some companies or even individuals can reduce emissions more cheaply than others. Verification or certification of VERs is conducted

by independent auditors who provide written assurance of the integrity of the ERC (similar to the role of a financial auditor). A VER typically represents one ton of GHG emission reductions (avoided emissions) expressed in carbon dioxide equivalent units reduced—hence CO<sub>2</sub> emission reductions, or VERs. VERs are usually traded in increments of tons.

## 1. **The Voluntary Carbon Standard**

The Voluntary Carbon Standard (VCS), a standard for measurement and recognition of VERs was established by The Climate Group (TCG), the International Emissions Trading Association (IETA) and the World Economic Forum Global Greenhouse Register (WEF) in 2006. The group is striving to set a global benchmark standard that creates a credible VER credit.

The purpose is to provide a detailed description of the minimum quality level that any voluntary emission reduction project needs to satisfy in order for its reductions to meet the Voluntary Carbon Standard, be recognized as a source of Voluntary Carbon Units (VCU) and to become eligible for registration into a VCU Registry. Once registered in a VCU Registry, the VCUs become fundable and tradable instruments between market participants. In addition, they provide a guide for certification entities on how to verify compliance of voluntary emission reduction projects with the Voluntary Carbon Standard. The VCS will initially reference current CDM accounting and verification standards.

## 2. **The Gold Standard**

Founded by the World Wildlife Foundation (WWF), SSN and Helio International, the Gold Standard is a non-profit foundation under Swiss Law and funded by public and private donors. A methodology for voluntary offset projects was launched in May 2006. The Gold Standard Foundation offers labeling for voluntary offset projects.

VERs might be used for offsetting emissions of companies, events and individuals, and for emission reductions beyond legal obligations. To ascertain high quality offsets contributing to local and global sustainable development are real, additional emission reductions. The Gold Standard VER builds on the criteria applied for Gold Standard CDM projects. The main differences include simplified guidelines for "micro"—projects that deliver less than 5,000 tonnes of emission reductions annually (normally a project that wouldn't qualify for CDM CER program), greater flexibility for countries without host approval and host country eligibility.

Validation and registration to the Gold Standard and verification follow the general principles of CDM. However, credits issued upon verification of emission reductions are directly issued by the Gold Standard. Currently, a registry mechanism is being developed that will allow unambiguous identification of credits used to back offsets.

### 3. **GHG Registry by Environmental Resources Trust (ERT)**

ERT is developing the [GHG Registry<sup>SM</sup>](#) and associated services to support the key infrastructure requirements needed for a robust GHG emissions reductions trading market—defining the commodity that will be exchanged (emissions units), establishing the accounting language and protocols by which market participants will measure and verify their emissions performance, and providing early actors with third-party validation of their emissions performance, including individually serialized records to provide evidence of their accomplishments.

The GHG Registry provides the following: transparent recordation and tracking of qualified emissions reductions; credible third-party review, and quality assurance, of reductions recorded in the GHG Registry; establishment of reductions claimed for early action and other public programs; and a mechanism for the retirement of GHG emissions reductions.

### 4. **VER+ Standard by TÜV SÜD**

Verified emission reductions are commonly understood as tradable emission reductions that have been generated according to defined standards and requirements other than the Kyoto Protocol. TÜV SÜD is one of the leading companies providing validation and verification services for CDM and JI projects according to the Kyoto Protocol. Audits have been carried out for hundreds of emission reduction projects worldwide within all relevant project categories (scopes). TÜV SÜD offers validation and verification services also for projects that do not intend to get registered under the Kyoto scheme (CDM/JI) or any other governmental system.

In principle the criteria for VER+ are in line with those for the Kyoto Protocol project based mechanisms (JI and CDM), including the requirement on project additionality proving that the project is not a business as usual scenario. The main difference to regular JI and CDM activities comprises that VER+ projects are not brought to registration with UNFCCC and therefore will not be accounted on any Annex-I-country's Kyoto balance. For projects in developing countries larger flexibility is provided on the choice of the applied methodologies, which may be composed according to the guidelines applied for JI projects.

### 5. **Green-e Standard by the Center for Resource Solutions (CRS)**

The Center for Resource Solutions initiated a greenhouse gas product certification program in 2006, followed by comprehensive stakeholder input. The program is designed to certify carbon offsets that are created for projects that already have accounting and verification systems in place. The Green-e program provides consumer protection by providing an enforcement mechanism, requiring disclosure of offset marketer information to buyers.

Participating GHG marketers that certify products under the Green-e GHG Program commit to source GHG emission reductions from eligible sources. This standard details the process and principles by which stakeholders and the Green-e

Governance Board will determine which GHG Project Certification Programs and GHG Emission Allowance Programs that will be included in this program as eligible sources of GHG reductions.

## **6. Other Voluntary Programs in the United States**

Although there is no national mandated carbon offset program in the United States, recently several organizations have become involved in efforts to develop voluntary standards. The U.S. EPA Climate Leaders Program has developed a program that assists participating organizations inventory and report emission reductions. This program is based upon the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) Project Protocol and ISO 14064 standard. The protocol and standard provide guidance for offset project accounting and an accounting checklist designed to assist policymakers in creating standards.

The Chicago Climate Exchange is a member-based exchange for voluntary GHG reductions, trading and registry of U.S. carbon credits called Carbon Financial Instruments or CFIs. These CFIs are registered under the Chicago Climate Exchange (CCX) and traded amongst its registered member companies in the U.S. companies who fail to reduce their own emissions, can purchase credits from those who make extra emission cuts, or from verified offset projects. As of July 2006, more than 11.6 million metric tons were traded at prices between \$2.00-5.00 per metric ton on this exchange. The CCX program includes accounting rules, verification and a registry but transparency of the details of these programs is not available to the public.

The California Climate Action Registry (CCAR) is a voluntary program to help companies and organizations in California register and inventory their greenhouse gas (GHG) emissions. The purpose of the Registry is to establish GHG emission baselines against which any future GHG emission reduction requirements may be applied. The CCAR is developing accounting standards for specific types of projects and has approved protocols for forestry sequestration and agricultural methane digesters. These protocols are compatible with the WRI/WBCSD project protocol and can be registered with CCAR. They provide a list of verification companies that are accredited.

In the future tracking trades and retiring, offsets may be done with the Climate Registry program. The Climate Registry is a collaboration between states, provinces and tribes, including those in the United States, Canada and Mexico, aimed at developing and managing a common greenhouse gas emissions reporting system. Through a policy of transparency, they will provide “a verified set of greenhouse gas emissions data from reporting entities” coupled with an infrastructure that supports accounting and verification.

### **A Buyer's Market**

In 2007, the World Bank Institute reported that the total global market in 2006 for voluntary offsets was over \$100 million with prices ranging from \$1 to \$80 for over 10

million tons of CO<sub>2</sub> equivalent emission reductions. Companies like 3C based in Frankfurt, Germany have developed a carbon fund available for the purchase of voluntary emission reduction credits around the world; they are specifically looking for projects that fall outside of CDM criteria. They work with companies like The Climate Trust in Oregon that supplies the offsets that 3C seek, including projects that power truck stops at night, supplying an electric energy source that emits fewer emission than idling trucks. Other offset providers in the United States, like Blue Source of Salt Lake City, Utah, who has one of the largest portfolios of voluntary offsets in the United States representing more than 300 million tons of emission reductions in 45 states, are beginning to represent a large part of the total global voluntary offset market.

## Conclusion

The voluntary emission reduction initiatives being developed worldwide address many of the components needed for a comprehensive program for the standardization of VERs, one that includes complete standards and oversight but it appears that none of them currently offer a complete package. It is estimated that the voluntary market may be almost equal to the market value of today's CDM market by 2011. With this growth prospect and a buyers market that currently seeks emission offsets, a global standard for VERs is most certainly on the way, one that provides input to any mandatory schemes that are developed, and oversight for credible VERs in the future.



### About Dr. Prabhu Dayal and C TRADE

Dr. Prabhu Dayal, is founder and president of C TRADE, an international renewable energy development and carbon management company, headquartered in Tucson, Arizona, USA since 1998. C TRADE is currently developing several biogas to energy projects to be qualified and certified as CERs in Philippines, Thailand, India and China. ([www.ctrade.org](http://www.ctrade.org)) Email: [pdayal@ctrade.org](mailto:pdayal@ctrade.org)

Dr. Dayal also serves as chair for the 11th Annual Energy and Environment Conference ([www.euec.com](http://www.euec.com)) where 1500 international delegates attend and 300 technical presentations are made on Air Quality, Mercury, Global Warming and Renewable Energy, January 27-30, 2008 in Tucson, Arizona, USA.



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