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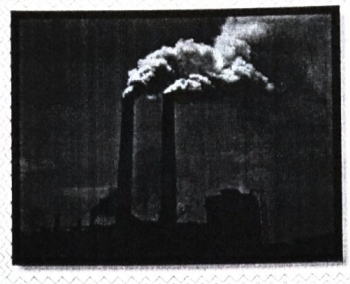
CARBON CREDIT ACCOUNTING MECHANISM



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ABSTRACT

A carbon credit is a generic term for any tradable certificate or permit representing the right to emit one tonne of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent (tCO2e) equivalent to one tonne of carbon dioxide. Carbon credits and carbon markets are a component of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs). The quality of the credits is based in part on the validation process and sophistication of the fund or development company that acted as the sponsor to the carbon project. This is reflected in their price.

Predictions are made that forest carbon offset assets will become a thriving investment asset class with significant equitable distribution of revenues based in a transparent financial accounting mechanism. This article introduces forest carbon assets as an alternative asset class under IAS and U.S. GAAP.

This paper revisits the Carbon credit accounting mechanism and tries to explain as to ow the forest carbon offset can prove to be an asset to be classified as investments and highlights its financial and cost accounting aspects.

Key Words: Carbon Credit Accounting, carbon dioxide, forest carbon offset, CER,IAS, GAAP

INTRODUCTION

A carbon credit is a generic term for any tradable certificate or permit representing the right to emit one tonne of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent (tCO2e) equivalent to one tonne of carbon dioxide. Carbon credits and carbon markets are a component of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs). The quality of the credits is based in part on the validation process and sophistication of the fund or development company that acted as the sponsor to the carbon project. **This is reflected in their price**; voluntary units typically have less value than the units sold through the rigorously validated 'Clean Development Mechanism'. There are **different accounting treatment** options under consideration which are impacted by the method with which the carbon credits are acquired, whether by internal creation, purchase or donation to the organization. The different accounting treatment options also consider the intended use of the credits – will they be used for an organization's own compliance purposes or sold to market participants ?

Predictions are made that forest carbon offset assets will become a thriving investment asset class with significant equitable distribution of revenues based in a transparent financial accounting mechanism. This article introduces forest carbon assets as an alternative asset class under IAS and U.S. GAAP.

Part 1: Financial Accounting

The Value of Accounting

In order for the forest carbon market to function adequately and develop fully, clear financial accounting standards for forest carbon offsets must be established. Entities possessing forest carbon offsets currently have no financial accounting guidance to follow, and as a result there is no transparency in the market due to the variety of accounting methods being used. Lack of uniform financial accounting makes it difficult to fairly compare financial statements between forest carbon offset projects, whether they are in the public or private sector. Until financial accounting rules are issued, difficulty regarding information transparency and comparability will persist in the forest carbon markets regardless of international policy direction.

The latest survey found on the balance sheet that :-

- 29% of the companies accounted for self-generated CERs as inventory upon generation, at an allocated cost of production.
- 13% recorded the CERs as intangible fixed assets, at fair value
- 29% did not recognize the CERs until they were used/sold
- 29% used other treatments

Whenever the asset is sold, money exchanges hands in return for forest carbon offset ownership rights. Accordingly, forest carbon offsets qualify as assets for financial accounting purposes because they are entity controlled and provide future economic benefits.

Despite the lack of clear rules, various accounting methods applicable to forest carbon offsets are present in existing standards under IAS and U.S. GAAP. In determining the appropriate accounting for forest carbon offsets, considering their character is imperative. The use of the forest carbon offsets determines their nature, which in turn dictates how they should be classified in the financial statements. This directly impacts the financial value perceived by the public and private sectors of forest carbon offsets.

Inventory Accounting Methodology

In the following example, a landowner hires a forest carbon offset project developer to generate forest carbon offsets on their property, regardless of the forest carbon asset class. The landowner uses an inventory accounting method. The forest carbon offset project developer sells the forest carbon offsets to a wholesaler. Using the generation analogy, a carbon forest offset project has three stages:

- Raw materials sourcing
- Generation
- Sales

Inventory Accounting Methodology Example

A broker purchases 1,000 mtCO2e forest carbon offsets from a developer whose forest carbon offset project is based in the rainforest. Purchase price is Rs. 50/- per forest carbon offset and the unit cost for the developer is Rs. 20/-. The total amount the broker pays in the sale is Rs.50,000. The broker records

the Rs.50,000 sale on its balance sheet as inventory. The journal entry for the broker's purchase is as follows:

Accounts Payable A/c. …Dr. 50,000
To Credit Inventory A/c. 50,000

The gross amount the developer realizes from the sale is also Rs.50,000 less any selling costs, but for this example we will assume the developer incurs no costs to sell the forest carbon offsets. The developer also realizes costs of goods sold (COGS) related to the forest carbon offsets of Rs. 20,000. The developer reduces inventory on its balance sheet and records the following journal entry for the sale:

Accounts Receivable A/c. …Dr. 50,000
To Sales A/c. 50,000

And

Inventory A/c. …Dr. 20,000
To Cost of Goods Sold A/c. 20,000

When the broker pays the developer for the forest carbon offsets, it makes the following entry:

Cash A/c. …Dr. 50,000
To Accounts Payable A/c. 50,000

The developer makes the following entry when it receives payment from the broker:

Credit Cash 5,000
Debit Accounts receivable 5,000

The broker now maintains this inventory on its balance sheet at lower of cost or market under U.S. GAAP or at lower of cost or net realizable value under IAS. If we follow the assumption there are no selling costs associated with the sale of forest carbon offsets, then the value of the inventory is the same regardless of whether U.S. GAAP or IAS is followed. When the broker subsequently sells the forest carbon offsets to a buyer, it removes the cost of inventory sold from the inventory account on its balance sheet and transfers it to cost of goods sold, an expense account on the income statement.

Cost Accounting for Forest Carbon Offsets

Cost accounting comprises various methods that can be used to calculate the per-unit cost for forest carbon offsets. In other words, this is how much it costs to produce each forest carbon offset asset. This unit cost is the basis for the monetary amount used in financial statements, regardless of the forest carbon offset classification as inventory or intangible assets, as discussed above. According to both IAS and U.S. GAAP, assets in the process of production constitute three types of inventory:

- Raw materials
- Work in process
- Finished goods

Production costs flow through the raw materials and work-in-process accounts before entering the finished goods account, where the aggregate cost of completed products is on the balance sheet. As goods are sold, their costs are removed from the finished goods account on the balance sheet and become an expense, cost of goods sold, on the income statement. Relevant production costs in forest carbon offset projects include the following:

- Land title acquisition, lease, and / or title insurance
- Forest carbon offset project design and technical data

- Implementation
- Monitoring, verification, and reporting
- Commercialization

Raw materials inventory includes the costs of materials, such as parts and equipment, from which a good is eventually manufactured. For a forest carbon offset project developer, these costs would relate to inputs such as land (owning and leasing) and timber from which the final outcome, a reduction in emissions, is produced. As raw materials are used in production, their costs transfer to the work in process account. All costs involved in the manufacturing process accumulate in this account. In addition to raw materials costs, the account also includes direct labor and overhead. Costs are transferred from work in process to the finished goods account as the manufacturing process concludes. For forest carbon offset project developers, a finished product is realized after validation and verification.

There may be a balance in all three accounts at the close of each accounting period. For raw materials and finished goods, this number represents the cost of items remaining at the periods' close. For the work in process account, this number represents the accumulated costs incurred for goods still in the production process. The relative balances of these accounts depend on the nature of the manufacturer. For example, a manufacturer of products with lengthy, complex production processes (e.g., technological or electronic goods) may have a large balance in the work in process account relative to raw materials or finished goods. Conversely, a manufacturer of goods with short run production processes may have a relatively smaller work in process balance. For all three manufacturing accounts, inventory is held at lower of cost or net realizable value under IAS and at lower of cost or market under U.S. GAAP. In the context of forest carbon offset projects, the forest carbon offset project developer is likely the only entity to use this method because it is the only one engaged in a production process.

Forestry Carbon Offsets Investment Class

The question we ask as market participants is whether forest carbon assets and offsets is becoming its own investment asset class. We have observed that the key lessons to developing a successful are effective communication, appropriate business strategy, understanding the offset generation process, focus on intergenerational equity, real property rights, and engaging finance and sustainability concurrently. If we can perform these tasks, forestry carbon offsets may become a thriving alternative investment asset class with significant equitable distribution of revenues based in a transparent financial accounting mechanism.

CONCLUSION

Financial accounting for forest carbon offsets is important for both internal and external decision making for forest carbon offset projects. Appropriate cost accounting is significant for landowners and forest carbon offset project developers who make crucial decisions based on cost calculations. Appropriate and uniform classification of forest carbon offsets in the financial statements is imperative both for internal decision making and for external stakeholders such as communities, not-for-profits, nongovernmental organizations, regulators, public sector investors, and private sector investors. Without clear financial accounting guidance for forest carbon and voluntary offsets, financial comparability across forest carbon offset projects will remain vague, thus making it impossible to gauge the financial health of a forest carbon offset project or to determine whether there exists equitable distribution of revenue to local communities.

Furthermore, how we account for our forestry carbon offsets clearly has significant impacts that need to be addressed as soon as possible as we head towards both a UN post-Kyoto Protocol forestry carbon policy and a U.S. cap-and-trade forestry carbon policy. We need to be able to financially account for our

forestry carbon offsets with permanence, regularity, consistency, prudence, and full disclosure and materiality for our forestry carbon offset market to grow as an industry into an alternative investment asset class.

To propel the forestry carbon offset market industry into an alternative investment asset class, we recommend the following actions be taken:

1. Create appropriate uniform financial accounting processes for forestry carbon offsets as an imperative for both internal decision making and external stake-holders.
2. Issue financial accounting guidance so the forestry carbon market matures into a viable and active market based in liquidity, transparency, and assurance of completion.

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