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ENTERPRISE CARBON ACCOUNTING (ECA)

The Quest for Radical Collaboration & Unprecedented Transparency

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INTRODUCTION

Enterprise carbon accounting (ECA) is an essential requirement for companies and will likely become necessary due to government legislation. No longer is it permissible for a company to look within its borders, but it must look at its overall environmental responsibilities and accurately gauge and measure carbon production and emission caused by its very existence. Financial data must be directly linked through lifecycle assessments enabling action to be taken to help reduce greenhouse gas emissions.

Calculating a complete greenhouse gas (GHG) inventory is a daunting task unless the carbon information is readily available and easily managed in a central database that tracks emission sources to the asset level. In most cases, the emissions related data may come from many different parts of your organization. This leads to communication challenges and hidden carbon emission sources. The use of an enterprise carbon accounting (ECA) is paramount to assembling the carbon inventory with efficiency.

◼ ENTERPRISE CARBON ACCOUNTING (ECA)

During the past several hundred years, our unquenchable thirst for power has resulted in a constant forward push, a "devil may care" approach to industrial pollution and an inability to come to terms with the consequences of our actions.

Little did we know, during those early years, that our efforts to provide betterment, to increase our standard of living, and to chase elusive inefficiencies would have such significant adverse effects on the environment as a whole.

As science and technology helped us to understand, we are gradually coming to the realization that the burning of fossil fuels was at the core of the problem through the emission of harmful greenhouse gases (GHGs) and carbon dioxide (CO_2).

As scientists and environmentalists continued to warn politicians and industrialists, the growing realization that something needs to be done has prompted the adoption of policies and procedures aimed to curtail the amount of greenhouse gas emissions. It became clear that greenhouse gases are being released from all manner of processes in addition to those attributable to core manufacturing efforts.

As we all come to terms with the situation, it is becoming clear that every individual will have to take an element of responsibility for our current challenges. As a consumer, we are responsible for an element of these greenhouse gas emissions. In order to reduce emissions, one must reduce consumption. Individual and corporate bodies alike are becoming aware of the impact each has carbon emissions.

UNDERSTANDING ENTERPRISE CARBON ACCOUNTING (ECA)

In recent times, considerable pressure is being brought to bear by not only environmentalists and scientists but through rapidly awakening public opinion. In corporate terms, stakeholders from all sides are pressurizing the organization to adopt cleaner procedures and to become aware of their footprint in terms of greenhouse gas emissions.

Enterprise carbon accounting is a way for businesses to collect emissions data, summarize findings, and report their greenhouse gas (GHG) inventories and to monitor initiatives specifically aimed at production and optimization.

In brief, the process matches traditional financial accounting with a hybrid mix of life cycle analysis. Every organization must approach its operation from the viewpoint of sustainability and must adopt internal carbon accounting as a core operation.

When it comes to addressing the problem of carbon emissions, geopolitical obstacles have yet to be overcome. Dating back to the landmark Kyoto Protocol we can see individual issues and objections raised by countries around the world and can see the difficulties posed by selective interpretations and even selfish agendas.

Few now dispute the scale of the problem but there is more than a little "finger-pointing," which is of course highly counterproductive to the problem at hand. Less-developed countries point to below average emissions-per-capita and maintain that the adoption of punitive measures across the board would have a direct negative effect on its people.

A truly global initiative to address greenhouse gas emissions is some way off, but the major industrialized nations and developed countries are taking the lead to initiate formal regulations to mandate change. Many believe that the United States should be at the forefront of this change as it is the producer of 18% of total global greenhouse gas emissions while being home to only 5% of the world's population.

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Ironically, however, the country only has the third-highest per capita emissions rate and is the world's largest economy and producer of wealth.

While the environmentally conscious world waits for the adoption of forceful regulation, the United States and the European Union are pressing ahead with initiatives to curtail carbon emissions. Both the EU and the USA have introduced and/or are discussing legislation to force affected enterprises to expose their carbon emission requirements and to encourage them to actively reduce their footprint.

Companies that are included within the scope of this legislation will need to be very aware of their entire operational processes and the size of their emissions "problem." Over time, an auction-based allotments system and "cap and trade" programs will offer financial encouragement to these organizations with the goal of achieving a significant reduction in emissions within a relatively short time frame.

A recent survey by AMR Research showed how manufacturers in the United States were getting ready to measure, track and report greenhouse gas emissions by utilizing an enterprise carbon accounting approach. The research showed that 38% of those surveyed already submitted data to the Carbon Disclosure Project and this figure is set to markedly increase as threatened or pending legislation comes to bear.

As we have discovered, the threat of legislation is joined by a considerable body of public opinion and shareholder pressure. Organizations must now be "seen to be doing the right thing" and will come under increasing pressure from all of their stakeholders to go beyond what is expected as a minimum and to indeed champion the cause.

The AMR Research documents projected that a majority of US manufacturers plan to purchase specialized software to assist them in their carbon accounting and greenhouse gas data management. Companies from almost every sector indicated the need to adopt such practices and AMR estimated that there would be a significant call to companies who specialize in this field.

Verisae's Carbon Emissions Manager provides a company with real time carbon footprint reporting. We provide the company the ability to take inventory of Greenhouse Gas (GHG) emissions and a company's impact on the environment. Our software model incorporates indirect and direct emissions and focuses on the large, distributed enterprise with many locations. Our Carbon Footprint software helps to manage a company's position in critical areas such as energy consumption and fugitive gas emissions, areas in which direct reduction in Carbon Footprint can be achieved.

CONSEQUENCES OF MANDATORY CARBON REPORTING

The U.S. government provides us with stark figures to show us what is likely to happen. The government estimates that greenhouse gas emissions will increase by 35% by the year 2030. This figure takes into account gains in energy efficiency, improvements in energy intensity within the industrial sector, gains in fuel efficiency within the transportation sector, higher standards within building construction and improvement in electric power generation.

Without these gains, emissions would likely increase by 50% and not 35%. The US government provides us with these figures to show the implications of continued population growth and its associated requirements and a net increase in the use of carbon-based power generation.

Greenhouse gas abatement potential is nevertheless realistic and the use of alternative generation including wind, solar and improvements in overall building use energy efficiency, transportation fuel use and biofuels could alleviate these projections.

Companies face an uphill battle to run their operations efficiently and to make money for the stakeholders. While many organizations in the United States, as reported by AMR, are proactively adopting measures to reduce their carbon footprint and curtail greenhouse gas emissions, there is still a degree of uncertainty.

At the end of 2008, Gartner, a research firm, revealed that an astonishing number of surveyed companies within the US and ten other countries have either not implemented any reporting procedures or management systems or were not even sure if they needed to. In their findings, almost 65% had not adopted the concept and almost 14% were in the dark.

> The earth is warming at an alarming rate, we are running out of fossil fuels, and it is long past time for us to take action to correct these problems.
>
> —Bill Clinton

This serves to highlight the fact that most companies face a significant learning curve and may not even know where to start. For many, the establishment of a corporate sustainability officer is the first step and while government legislation may be some way off, many boardroom meetings are already absorbing the potential impact to their bottom line and credibility caused by stakeholder and consumer backlash.

SCOPES OF CARBON EMISSIONS

Fundamentally, there are three scopes of emissions that need to be addressed and there are six distinct greenhouse gases, as outlined by the landmark Kyoto Protocol. The gases involved are methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and carbon dioxide.

Emission quantities and densities should be first converted to what is known as "carbon dioxide emission equivalents," which allows for standard comparisons to be made across the board.

The three different scopes of emissions are essentially direct, indirect, and tertiary (one, two and three). Utility producers are responsible for the production of direct emissions, or scope one, within this definition and this area has tended to focus on the use of fossil fuels in production. While utility companies have long been regulated and have systems in place to track carbon emissions from coal production, these companies must also understand that they are responsible for emissions under the other scopes as well.

Any organization that purchases power products (primarily electricity) to maintain its operations are responsible for producing emissions under the scope two. This generally includes the use, in addition to electricity, of diesel, propane, fuel, natural gas and refrigerant.

For an organization to accurately state its carbon footprint, it must look beyond its immediate boundary and accept emissions that it has, at least in part, a responsibility for. For example, where employees commute to work at its location, they are burning fuel and emitting gases. Suppliers who provide elements for use during the production process are also responsible for greenhouse gas emissions and this should be taken into account by the end-user. These scope three emissions represent the most complex in terms of calculation and accounting and are in general still viewed as voluntary.

As there is such a degree of complexity involved, an organization may not realize the scope of its problem until it has conducted intensive research as part of its enterprise carbon accounting requirements.

For example, the software manufacturer Coca-Cola has being able to track and measure its carbon footprint quite accurately by identifying less tangible gas emitters such as vending machines.

In fact, the company was surprised to find that these machines account for a larger emissions volume than its entire transportation fleet or manufacturing environment footprint. The company's findings have encouraged it to investigate additional and more comprehensive carbon accounting aids.

CARBON EMISSIONS REPORTING PROTOCOLS

According to The Greenhouse Gas Protocol published by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), enterprise carbon accounting should be relevant, complete, consistent, transparent and accurate.

Stock of greenhouse gas inventory should truly reflect the company's emissions and provide targeted information for the company's decision-makers and external governments alike. Information must be complete and relevant to identifiable, dedicated boundaries and must be adequately justified.

One of the most important factors is consistency and methods must be adopted so that reported emissions may be compared over time. Fundamental to the adoption of these accounting practices is the need to be transparent and coherent and to leave a clear audit trail in all respects.

Once a company has been able to establish its organizational boundaries, according to its ownership or operational makeup, it must then delineate its emission scopes. It must account for these emissions separately and should subdivide the data according to business unit, source type, activity and country.

It should be noted that the process of investigation and disclosure can lead to valuable efficiencies that were not previously identified or identifiable before. Efficiency gains could become apparent throughout the value chain.

Adequate procedure for documenting and tracking carbon emissions should ensure that double counting of emissions is avoided. In this way, two different companies should not count indirect emissions from the purchase of electricity, for example.

CARBON EMISSIONS REPORTING

A comprehensive carbon accounting report should include an exercise to define organizational boundaries and to communicate these across the organizations. Each affected business area should make known emissions sources, including any activities covered under the reporting protocol being followed.

Companies may soon be charged for carbon emissions.

Verisae, Inc., offers a solution to organizations seeking to achieve superior standards of energy efficiency and to transparently engage in enterprise carbon accounting. The company has patent and software solutions centered on a web-based system for tracking and reporting greenhouse gas emissions.

Further, the company provides more than corporate sustainability management and consulting, focusing the corporate mindset on sustainability as the primary driving factor. The information gathered and processed through the company's web-based software applications provide for informed decision-making by corporate heads. Verisae is a leading supplier of clean technology software.

Comprehensive information on emissions and procedures should be indicated as follows:

- Total scope one and two emissions net of any greenhouse gas trades such as sales, purchases, transfers, or retained allowances.
- Reported data for each scope.
- Data broken down according to each of the six greenhouse gases identified by the Kyoto Protocol. This should be presented in metric tonnes and in carbon dioxide equivalent.
- The base year for comparison purposes in a consistent profile, including a definition of the policy used to calculate.
- If significant changes have been made to methodologies or reporting boundaries, they should be included.
- The method used to calculate and measure emissions together with the software or tools utilized should be reported.
- If there any specific exclusions referring to the use of operations or different facilities they should be declared.

Companies should always strive to produce a final report that is as transparent as possible. While there may not be a central requirement for enterprise carbon accounting as yet, it is equally as important to produce a comprehensive and inclusive set of reports for internal use as well as external consumption and this is nonetheless important even though different standards exist for reporting, methodology used.

CONCLUSION

Enterprise carbon accounting (ECA) is an essential requirement for companies and will likely become necessary due to government legislation. No longer is it permissible for a company to look within its borders, but it must look at its overall environmental responsibilities and accurately gauge and measure carbon production and emission caused by its very existence. Financial data must be directly linked through lifecycle assessments enabling action to be taken to help reduce greenhouse gas emissions.

ABOUT VERISAE

Verisae (www.Verisae.com) develops, markets, and licenses **Sustainability Resource Planning (SRP) ™,** an enterprise solution that empowers organizations to make "sustainability actionable". Verisae helps measure, manage and monetize energy costs and carbon emissions. SRP covers the core functions of sustainability needs by combining multiple business processes and systems into one database to use across the enterprise. Our platform improve operational efficiency, make sustainability initiatives actionable, and reduce energy costs carbon emissions for distributed enterprises and energy companies.

ENVIRONMENTAL MANAGEMENT

Carbon Emissions Manager
- Scope 1 & 2 Emissions
- Scope 3 Emissions

Sustainability Project Manager

Water Manager

Waste Manager

ENERGY MANAGEMENT

Energy Supply Manager
- Utility Bill Processing
- Active Energy Response
- Utility Contracts Management
- Energy Spend Manager

Energy Demand Manager
- Real-Time Energy Management
- Active EE Dispatch
- Energy Efficiency Projects

ASSET MANAGEMENT

Service Manager
- Service Provider Management
- Financial Management

Asset Manager
- Facilities Management
- Equipment Management
- Asset Monitoring & Alarming
- Parts & Inventory Management

Procurement Manager
- Rebates & Incentives Management
- Total Capital Planning
- Equipment Procurement

Given the heightened priority of corporate sustainability, Verisae is positioned right now to enable organizations to establish a carbon footprint baseline, outline energy management options, and provide a comprehensive corporate sustainability action plans in a manner of months. All of which can be implemented with metrics in place to highlight bottom-line cost savings and return on investment timelines.

Today, Verisae delivers a broad range of sustainability solutions to over **40 global clients** with a service network of **7,500 third party service providers** consisting of **60,000 application users.** Our integrated sustainability platform actively tracks over **2,100,000 million assets** across **20,000 sites.** We help measure, manage and monetize energy costs and carbon emissions. We are uniquely position to help organizations prove return on investment (ROI) for sustainability initiatives.

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