Mahindra Satyam

# "Curb it.. Balance it": Improve Your Carbon Footprint

By Prakash Wagh, Head SAP Manufacturing PLM & EHS

**Author Profile**

Prakash Wagh
Head SAP Manufacturing PLM & EHS
Mahindra Satyam

*The Author is head of SAP manufacturing; PLM & EH&S practice at Mahindra Satyam. He has more than 20 years of experience in Auto; Chemicals; Textiles; Specialty Chemicals and IT consulting. His SAP expertise is in SAP manufacturing; PLM & Environment health & safety including REACH and Emission management*

*He can be contacted at*
***Prakash_wagh@mahindrasatyam.com***

## Abstract

The increased industrial and developmental activities in the last five decades all over the world has increased the atmospheric levels of carbon dioxide by 30% and that of Methane and Nitrous Oxides by about 15%.Fossil fuels, Industrial activities and human activities detrimental to nature are the prime contributor to the phenomenon of "Greenhouse Gas effect"

In the business context, on one hand it is the issue of compliance to different air emission regulations and rules framed by the respective Governments/Agencies (Air emission regulations, Kyoto Protocol) and on the other hand is overall corporate social responsibility of reducing the overall Greenhouse gas emissions.

The Business community can address these issues by adopting a strategy of " Curb it ,,,Balance it "Under this strategy , one is expected to put in place the policies ,procedures and technology to curb the overall emissions from the industrial activity and also invest in Clean Development Mechanism" or "Green Technologies " and the carbon credits earned through CDM mode can be used to balance or offset the overall Carbon limit the businesses are trying to achieve.(Currently only European companies can avail Carbon credit as USA is yet to ratify Kyoto protocol) This Dual strategy of " Curb it..Balance it'can be a good framework for organizations to improve their Carbon footprint. The operationalization of strategy with proper processes and supporting IT systems is one of the key success factors in this whole process.

Besides regulatory compliance, the emission curb and Balance strategy helps organizations in improving their brand and public image. The emission initiatives can also be shown under CSR initiatives

## Business Environment

Last decade saw plethora of legislation all over the world particularly USA and Europe in the area of environment, health and safety. In the area of environment, pollution control and waste management regulations have put lot of onus on businesses to take corrective and preventive measures for compliance to these regulations.

Major USA air emission regulations include

- Clean Air Act
- OAR Rules and Implementation .
- Air Toxics Rules and Implementation

Major Europe air and water emission regulations include.

- Integrated Pollution Prevention and control (Council Directive 2008/1/EC/2008)
- Large Combustion Plants (Directive 2001/80/EC)
- Waste Incineration Plants (Directive 2000/76/EC)

# Point of View

Besides the air emission regulations, Europe under the Kyoto protocol has guidelines and caps the amount of carbon dioxide that can be emitted from large installations, such as power plants and carbon intensive factories and covers almost half of the EU's Carbon Dioxide emissions.USA is yet to ratify the Kyoto protocol.

The Business challenge in air, water and Green House Gas emission management are manifold and includes

- Systems and Processes to address the emission compliance
- Availability of In-house experts on emission
- Integrated IT systems supporting emission management
- Technical limitations of existing technology for reducing emission
- Investments in new technology for further reduction in emissions
- Measurements, analysis and tracking of emissions

## Mahindra Satyam's Perspective

The compliance to air emissions and caps put up by Various protocols like Kyoto & Copenhagen protocol needs to be part of the overall compliance strategy of the business. Treating regulations in isolated buckets creates problem such as duplication of efforts, communication, multiple investments in equipments. The holistic view also helps to plan proper compliance strategies. Optimize and minimize the technological investments, seek and address the opportunities and finally keep the business protected from litigations, actions, Fines and negative public image.

*The first important step is to understand the business obligations under the respective regulations .It is necessary the compliance team thoroughly understands the provisions , compliance requirements ,submissions. The best way in such cases is to avail the services of the expert or expert firms.*

We recommend following a six step approach in addressing the emission and GHG compliance for a business

1. Understanding the business obligations
2. Drawing an Emission and GHG strategy
3. Put in place long term and short term plan
4. Operationalization of the Plan
5. Reports ,KPI and Dashboard
6. Continuous Review and improvements

**1. Understanding the business obligations**

The first important step is to understand the business obligations under the respective regulations .It is necessary that the compliance team thoroughly understands the provisions , compliance requirements, submissions. The best way in such cases is to avail the services of the expert or expert firms.

Besides the regulations, compliance team also has to look at corporate social responsibility policies of the business and integrate the objectives in the overall requirements.

**2. Drawing an Emission and GHG strategy**

It should be part of the overall compliance strategy. The best strategy for Emissions and GHG is the combined strategy of "Curb it..Balance it". The strategy calls for planning for emission reduction as well as aims at offsetting through carbon credits earned through various clean development programs. The aim is to avoid the failure to emission and GHG Compliance even if the curb and curtail efforts are not enough? Currently carbon credit market is available for EU countries and USA is yet to join the Kyoto (Eventually it has to join)

This is an integrated strategy which looks after various aspects such as current technology, operational constraints, new equipment required, processes and systems required and opportunities for acquiring credits through internal programs. The strategy build up is essentially a cross functional effort and cannot be left to technical stream alone.

Under the "Curb it..Balance it", the offsetting is aimed to be achieved through the "CDM "(Clean Development Mechanism). This mechanism has come into existence under "Kyoto Protocol" and currently applicable to EU companies only.

The carbon credit scheme was set up to allow EU countries or companies that fail to meet designated emission reduction targets to avoid paying penalties by purchasing carbon credits. Carbon credits are issued on projects around the world that result in reductions in the emissions of greenhouse gases. They are also a traded by brokers to facilitate exchange.

*Under the "Curb it..Balance it", the offsetting is aimed to be achieved through the "CDM "(Clean Development Mechanism). This mechanism has come into existence under "Kyoto Protocol" and currently applicable to EU companies only.*

The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction commitment to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. A crucial feature of an approved CDM carbon project is that it has established that the planned reductions would not occur without additional incentive provided by emission reductions credits, a concept known as "additionality".

An industrialized country that wishes to get credits from a CDM project must obtain the consent of the developing country hosting the project, that the project will contribute to sustainable development. Then, using methodologies approved by the CDM Executive Board (EB), the applicant (the industrialized country) must make the case that the carbon project would not have happened anyway (establishing additionality), and must establish a baseline estimating the future emissions in absence of the registered project. The case is then validated by a third party agency, called a Designated Operational Entity (DOE), to ensure the project results in real, measurable, and long-term emission reductions. The EB then decides whether or not to register (approve) the project. If a project is registered and implemented, the EB issues credits, called Certified Emission Reductions (CERs, commonly known as carbon credits, where each unit is equivalent to the reduction of one metric tonne of $CO_2e$, e.g. $CO_2$ or its equivalent), to project participants based on the monitored difference between the baseline and the actual emissions, verified by the DOE.

**3. Put in place the long term and short term Plans**

Addressing the emission and GHG compliance requires a blend of both long term and short term planning. The low hanging fruits and initiatives which are possible in current technology and operational constraints to curtail the emission are addressed under short term plans. The new technology investment for better emission controls, earning of carbon credits through CDM or Joint ventures are generally part of long term plan.

These short term and long term plans needs to be based on the overall strategy and must be developed by the corporate compliance and the cross functional team.

**4. Operationalization of Plan**

Meticulous planning, clear communication, pinpoint responsibility and availability of the resources are the key success factors required for operationalzing the short term and long term plans for emission and GHG compliance.

Another key success factor is the availability of the proper processes and systems to measure monitor and review the emissions. The processes must be integrated and the system used for monitoring must be an integrated system.

The enabling of the process with IT systems is one of the key points. As the emission compliance consist of continuous cycle of Measure, Compare, Report and Improve it is necessary to have a system which is comprehensive, user friendly and capable of supporting the various emission regulations.

The second aspect , the IT system needs to be integrated with the other functions such as manufacturing ,logistics and finance emission preventive and corrective actions happen in manufacturing and logistics and the cost and benefits are recorded in financial systems. The standalone emission management software's are of little help as they work in isolation and does not offer integrated management benefits.

*Internally within the companies, we need to distribute the emission compliance status reports, dashboards so that the concerned departments are aware of the emission compliance status and for also initiating the corrective and preventive action in their respective departments.*

Similarly the carbon credit purchasing, selling and offsetting also requires strong support in form of a proper IT system. Again what is important is not a standalone specialized software but a system integrated to overall compliance and logistics, finance system.

The choice of IT systems in such a scenario falls on integrated enterprise resource planning software's which can offer emission compliance functionalities.

**5. Reports, KPI and Dashboard**

The emission regulations call for different type of reports with varying frequencies and details to be submitted to the Government bodies and institutions.

Internally within the companies, we need to distribute the emission compliance status reports, dashboards so that the concerned departments are aware of the emission compliance status and for also initiating the corrective and preventive action in their respective departments.

The integrated emission management should be able to produce the mandatory submission reports, KPI and dashboards required for decision making.

**6. Continuous Review and improvements**

Continuous review of the emissions is a must as any violation above the allowable limits is liable to punishments, fines and negative public image. Based on the review, continuous improvement in different areas of the business must happen.

This six step methodology will help businesses to put in place the emission and GHG compliance in place.

## Conclusion

# Point of View

*This whole initiative needs to be supported through an integrated emission management system .The emission management system must be closely integrated with the rest of supply chain and finance. The standalone software's on Emission management may not serve the purpose.*

Businesses must adopt an integrated strategy for "Emission and Green House gas reduction" which will be part of overall compliance strategy of the business. The recommended approach is to " Curb it …Balance it", reduce the emissions and still there is a gap in fulfilling the emission cap under GHG , then offset with carbon credit generated through "CDM "

The recommended six step methodology helps businesses to address the emission and GHG compliance in a structured way. It is necessary to have separate emission and GHG strategy which should be a part of overall compliance strategy. The strategy and development of short term and long term plans must be done by a cross functional group and not by compliance team alone as the execution of emission plans requires involvement and active participation from the entire organization (Particularly Manufacturing and Logistics)

This whole initiative needs to be supported through an integrated emission management system .The emission management system must be closely integrated with the rest of of supply chain and finance. The standalone software on emission management may not serve the purpose.


## Acknowledgement

Kyoto Protocol: United Nations framework convention on climate change



For further information please write to **rfi@mahindrasatyam.com**