



CARBON FOOTPRINT

Green and Sustainable Manufacturing

A Brief Overview. By Emerson Suphal

Abstract

This trend is a direct result of the impact of climate change and the corresponding response from consumers for practices to sustain our environment.

Read most business magazines or listen to many business discussions and you no doubt have heard about green business, carbon footprints and the trend to environmentally friendly practices. But what does it all mean to a manufacturing company?

There are increasing demands from stakeholders (consumers and producers), for products with low negative impact on our environment. Economic drivers are now in tune with environmental considerations as manufacturing companies attempt to reduce negative environmental impacts across product life cycles and create economic benefit from more efficient supply chains and processes. This trend is a direct result of the impact of climate change and the corresponding response from consumers for practices to sustain our environment.

Lets look at some basic concepts:

A Carbon Footprint is the total amount of Greenhouse gas (GHG) emissions associated with your business and its products. “ Carbon” has become the basic unit of measurement for environmental impact. It is a measurement of all greenhouse gases your company produced and has units of tonnes (or kg) of carbon dioxide equivalent per year.

Product Life Cycle (PLC) is the supply chain from initial raw materials to final disposal and include the following elements:

- Extraction
- Materials
- Components
- Assembly
- Retail
- Use
- Disposal

Or Raw materials to Manufacturing to Assembly to Distribution to Customer Use to Disposal / Recycling

Sustainable Manufacturing

This concept refers to the use of technologies to transform materials with minimum greenhouse gas emissions and the use of non-renewable materials or toxic materials or generation of waste.

Generally five options have been identified for supporting sustainable manufacturing:

- Use less materials and energy
- Substitution of input materials: non-toxic for toxic and renewable for non renewable
- Reduction of unwanted output: cleaner production
- Conversion of outputs to inputs: recycling and all its variations
- Re-structuring of production: efficient supply chain

Global companies like IKEA, Walmart, Sharp Electronics, NYK Logistics (Japan), Pepisco, 3M and others have already started to restructure their supply chains to reflect low carbon footprints from participants.

As demand for environmentally sustainable products increase, governments and other legislative bodies will establish guidelines and indeed laws with corresponding penalties for violations. Indeed some European and Asian countries are already considering guidelines for carbon footprints with penalties for violations. This will lead manufacturing companies to evaluate their carbon footprint and supply chains with the view to minimize negative impact on the environment.

Sustainable manufacturing and carbon footprint is not a fad or 'topic du jour' it's a trend which is evolving from social responsibility and is indeed another 'bottom line' for your company as global companies and brands seek to position themselves on the lower end of the carbon footprint scale.
(Remember ISO. QS & Lean)

Our Tool & Die Industry is a significant component of the manufacturing element in the supply chain for many products and have carbon footprints which is a component of the carbon footprint for final products. Sooner rather than later, there will be a standard (International, National or Industry) for carbon footprints in manufacturing complete with penalties for violations.

At the extreme, companies with excessively high carbon footprints may be locked out of supply chains, ie may not get business because of their negative impact on the overall carbon footprint for the Product Life Cycle.

A new generation of consumers are much more environmentally conscious than any previous group and have grown up with the realities of climate change. They will demand products which are manufactured using environmentally responsible processes.

This article is intended to give a 'heads up' to our CTMA members of the trend to carbon footprint reduction and sustainable manufacturing and to provide an opportunity to take leadership positions within your sector and capitalize on them.

The future is here.

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