

There are a number of words and phrases that have traditionally not enjoyed much airtime in company bulletins, government publications, news reports, and general conversation, but have just recently been elevated to superstar status.

- ❖ Sustainability
- ❖ Greenhouse gas emissions
- ❖ Carbon footprint
- ❖ Carbon neutral
- ❖ Cap and Trade

These words and phrases are used extensively in the merging worlds of the environment and business. This article will give a top level overview of some of the concepts, trends and efforts behind them.



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Sustainability in a social context is described by the US EPA as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. A business uses sustainable practices if they have assessed the environmental impact of their business activities and then taken steps to reduce those impacts to whatever degree is necessary. With such broad societal and business implications, defining the scope of the analysis is an important step in the process.

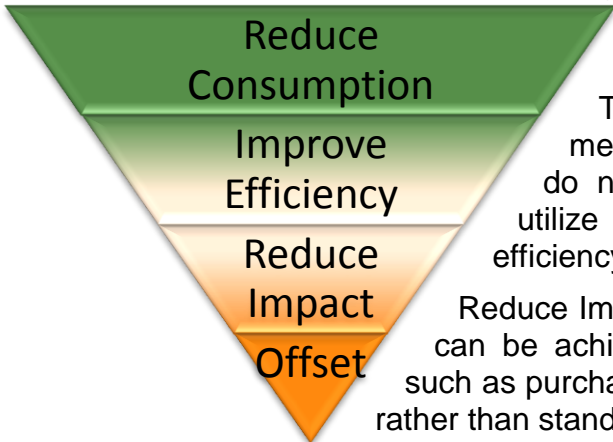
A fully developed sustainability program accounts for the environmental impact of all resources and activities of an organization, spanning its operations, activities and products throughout their entire life cycles. This is a major undertaking that takes significant time and resources to develop and maintain.

A less comprehensive analysis may still offer significant benefits. For example, a branch plant may decide to assess the impact of operations under their direct control, such as energy and natural gas consumption for heating, cooling and production, and fuel for product distribution. Once these are known, the plant can take steps to reduce the sources of those impacts by various means, such as introducing higher efficiency technology, or using renewable fuel sources.

The accounting of an organization’s impact involves summing the amount of greenhouse gases produced by their activities. Specific greenhouse gases that are defined in the Kyoto protocol include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). For simplicity, these are summed and then converted to a single unit using emission factors. The unit is normally expressed in tonnes and referred to as a carbon dioxide equivalent, or CO<sub>2</sub>e. The total CO<sub>2</sub>e for the business, product, or facility is commonly referred to as its “carbon footprint”.

Initiatives to reduce carbon footprints follow a priority sequence similar to the 3R's of waste reduction – reduce, reuse, and recycle. Reduction is best because the very act of consuming less generates less waste. Re-using is next best, but it still eventually generates waste. Recycling is better than disposal but requires resources before it is reusable, and then still generates waste.

The priority sequence for GHG emissions can be illustrated with an inverted triangle. Reduce Consumption is at the top of the triangle and is the most effective method for GHG reduction. Examples include installing solar panels for space heating or replacing



paper-based systems with electronic systems to reduce consumption.

The next most effective GHG reduction method is Improve Efficiency. These normally do not involve major changes to process but utilize higher efficiency equipment, such as high efficiency lights, motors, and vehicles.

Reduce Impact is the next priority in the triangle. This can be achieved by using lower impact fuel sources, such as purchasing hydroelectric or wind-source electricity rather than standard grid power.

Finally, at the bottom of the triangle, is Offset. Offsetting involves the purchase of GHG credits – the opposite of a GHG emission. GHG credits are produced and sold on a trading market by companies who create and implement official GHG projects. These projects are designed to measurably reduce the GHG emissions of a particular activity. For example, when a wind farm becomes operational, it produces electricity without producing GHG gases. Once the GHG emissions from equipment fabrication, transport, and installation of the wind farm are accounted for, there is a net measurable reduction in GHG emissions. These official GHG projects result in financial transactions, and so must follow strict methods for documentation, validation, and verification. The methods are outlined in newly-created standards written by International Standards (ISO) and adopted in Canada by Canadian Standards Association (CSA).

An organization may choose to demonstrate its environmental stewardship by declaring the company, its products, facilities, or even an event such as a conference as carbon neutral. This means that the amount of CO<sub>2</sub>e associated with it has been offset with an equal amount of CO<sub>2</sub>e credits. At the present time in Ontario, purchasing GHG offsets to achieve carbon neutral status is a voluntary activity. However, it is widely believed that a national cap and trade system will be introduced in the near future. This system will establish GHG emission limits that companies will have to operate within (cap) or purchase offsets from other companies who generate GHG credits (trade).

Prevention and Regulatory Solutions Ltd. provides services for developing GHG inventories following CSA standards, and implementing sustainability programs. These programs not only demonstrate environmental leadership, but often identify significant opportunities for continuous improvement and cost savings.