



White Paper

greenomics[™]
CORPORATION

Using Greenhouse Gas Management Strategies for Manufacturing and Distribution to

- ✓ Reduce Costs and Risks, and
- ✓ Improve Customer Experience

INTRODUCTION

The internationally established Greenhouse Gas (GHG) Protocol¹ establishes three types of emissions. Those that companies are directly responsible for producing: indirectly responsible for, and those created by others in providing their services. Many companies have started measuring the emissions they are directly responsible for creating, and some for which they are indirectly responsible. However, forward thinking businesses want to know the big picture and determine total emissions from the entire value chain to gain a competitive edge.

This shift is due to the realization that measuring GHGs also identifies where and how you are dependent upon fossil fuels and your vulnerability to their unpredictable price fluctuations. We also know they will continue to become more expensive as conventional supplies are depleted. By conducting a comprehensive review of your GHGs, you can identify areas most at risk and develop solutions to minimize those risks while reducing costs and improving customer experience.

How can a business reduce its GHG emissions while improving profitability and customer experience? While this is contrary to many approaches that simply cost money, such as ‘quick fix’ green energy or carbon offset companies, it can be done.

By looking at the entirety of your value chain, including suppliers and distributors, you can achieve GHG reductions by as much as 50% or more. **Significantly, you can achieve a corresponding reduction in costs and product delivery time to your customers.**

¹ The GHG Protocol, is the result of a partnership between the World Resources Institute and the World Business Council for Sustainable Development.

SUPPLY CHAIN AND DISTRIBUTION

Today’s supply and distribution patterns are global and a sophisticated understanding of GHG emissions can minimize risks associated with fluctuating but steadily increasing energy costs. Fuel surcharges and eco-taxes are now part of daily business. Assessing your GHG emissions can help you manage this volatility and give you a competitive edge.

If your suppliers are located around the world and your customers are significantly distributed, chances are your vulnerability comes primarily through the transportation costs of your supplies and products. While transportation is not something control directly, you can certainly influence it to your benefit.

Leveraging the benefits of GHG reductions require assessing the whole process of sourcing, manufacturing, and distributing. This macro view provides the strategic perspective necessary to be more competitive.

In today’s rapidly changing global dynamics, forward thinking businesses are positioning themselves geographically to reduce their emissions and the associated costs of transporting their goods.



Assessing the total value chain enables businesses to mitigate risks, realize savings, and improve customer experience.

WHY LOOK BEYOND YOUR OWN EMISSIONS?

A typical scenario for many businesses today is the sourcing of their product components from around the globe. This is possible due to the relatively cheap energy (fossil fuels) available for transportation. However, there is very little question that the cost of this energy is going to continue to rise, making the transportation of goods from all points around the globe more and more expensive.

Similarly, the distribution of the product is dependant upon cheap energy. As costs increase for transportation, consumers will become chosed to buy locally sourced products whenever possible due to price and environmental consciousness.

The critical questions are:

1. Are your suppliers and distributors taking steps to reduce their GHGs that reduce their costs through greater efficiency?
2. Are your competitors discovering ways to transport their supplies and products more efficiently?
3. What can you do to take advantage of the benefits of reducing dependence on GHGs/fossil fuels?

WEST COAST OF CANADA FACILITIES

Only looking at one's own emissions can lead to the false sense of doing 'OK'. The entire value chain needs to be assessed for a business to avoid being vulnerable to externalities that could make or break their competitiveness.

In this scenario, there are 8 different components being sourced from as far away from the manufacturing plant as Indonesia, Australia, and Mexico, while some components are sourced within a few hundred kilometres.



When assessing GHG contributions, the transportation mode used is as important as the distance covered.



For goods shipped to Vancouver, components sourced from Australia can be less GHG intensive than those sourced from Mexico.

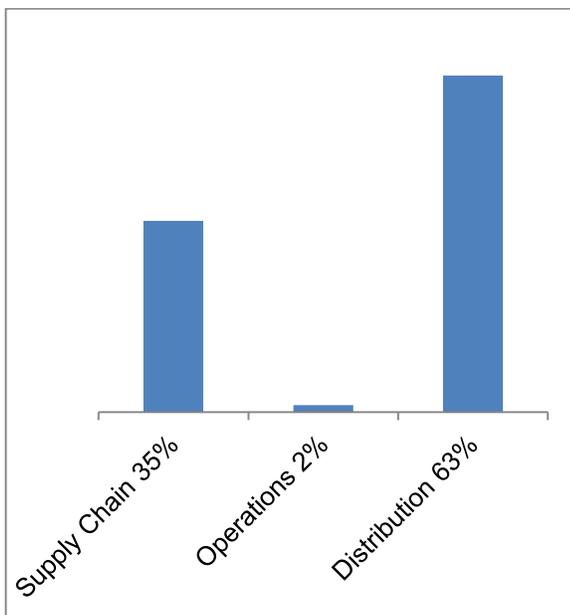
Companies that only assess the GHG emissions they produce can develop a false sense of security and be vulnerable to price volatility.

BALANCING THE EQUATIONS

Many companies first look at their own operations when assessing their GHG emissions, and often focus on the quick wins such as energy efficiencies, paper use reduction, or developing recycling programs.

However, it is probable that operations account for only a small fraction of the GHG emissions required for you to do business.

Sourcing and distribution which is often outsourced and essentially out of one's control, are the real challenges. In fact, operations often account for less than 2%, while sourcing and distribution can account for the remaining 98% of GHG.



Percentage Distribution of GHG Emissions

PROXIMITY TO YOUR MARKET

The past 30 years has seen a decrease in the importance of proximity to your market as demonstrated by China's industrial growth and its global distribution of mostly inexpensive goods. However, the dynamics that made this possible are changing as energy costs and concerns over energy security continue to rise.

Assuming a business wishes to continue to grow and gain access to new markets, proximity to your customers will become increasingly important for distribution site location.

In the figure below, the customer penetration across Canada is more or less distributed based on population density, therefore a greater number of customers can be found in Eastern Canada versus Western Canada. As such, a more central location for distribution is preferred rather than one side of the country or the other.



Albeit a relatively small consideration, moving from one location to another can increase your GHG emissions due to the electricity source. For example, British Columbia is predominantly hydro power, while Alberta predominantly uses fossil fuels thereby creating comparatively more GHGs to generate electricity.

The Key to the Balancing Act is to Weigh the Benefits of Sourcing versus Distribution, when planning for expansion.

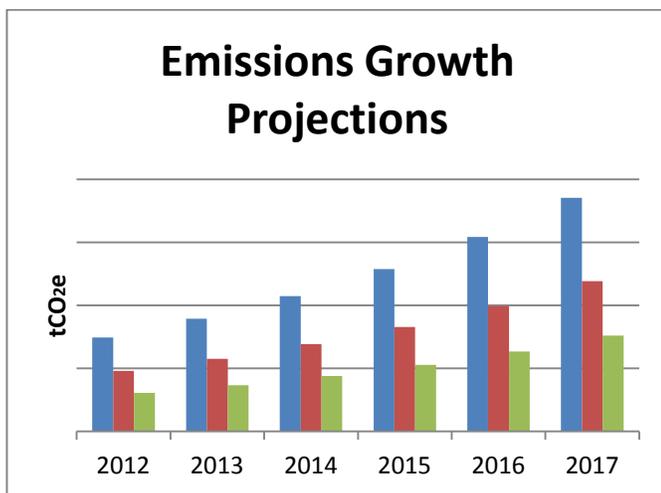
A BALANCED SOLUTION

By weighing the variables associated with GHG emissions, significant reductions can be achieved by identifying the ideal balance between the resources, customers, and transportation mode.

The following graph presents the growth in GHG emissions in blue with business as usual.

The red bar shows emissions based on optimal location selection.

The green bar indicates emissions based on ideal location combined with transport optimization.



By conducting such an analysis layered over projected growth by market, a business can realize as much as a 50% reduction or more in the GHGs associated with its business activities.

These reductions directly correlate with reduced transportation costs which can be applied to your profitability. Similarly, cost reductions related to product distribution can be applied to your bottom line or passed on to your customers.

BUILT IN FLEXIBILITY

The following diagram presents a centralized location that balances distances from sources with customer distribution and the availability of transportation options for markets in Canada and the United States.



As this business expands into other markets, another analysis would provide guidance on the need for one centralized production facility, or if additional facilities would better serve your business.

For example, if Asian markets become the next opportunity, and given that the majority of the components are derived from North America, it might be best to manufacture in the existing location and ship large quantities in batches to a central port in Asia for distribution. Alternatively, if components can also be source from Asia, then a second facility might be the better solution.

A GHG assessment can provide the critical information required for making strategic decisions that give the competitive edge.

Reduce costs, mitigate risks, and improve customer experience by getting the information you need to make the right decisions



About Greenomics

Greenomics was founded in 2002 and is based out of the west coast of Canada with a global network of partners and colleagues collaborating to provide organizations with a full suite of services.

We offer:

- Strategic Planning
- Opportunity and Risk Assessments
- Corporate Social Responsibility Planning
- Integrated Reporting Framework and Writing
- Workshops and Retreats
- Change Management Programs
- Governance Guidance
- Greenhouse Gas Management
- Resource Recovery
- Zero Waste Methodologies
- Baseline Assessments
- Presentations and Consultations
- Marketing and Communications

Our vision

“A Sustainable World of Sustainable Businesses.”

Our mission

Greenomics provides sustainability leadership to businesses through consultative services and supporting products that are based in science; are measurable; and increase revenues, improve employee retention and productivity, reduce costs, enhance corporate image, and assist in managing intangible risks.

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