

Avoiding Greenhouse Gas Emissions The Essential Role of Chemicals



Alternative product distribution logistics and greenhouse gas emission reduction

An Eastman Chemical Company case study

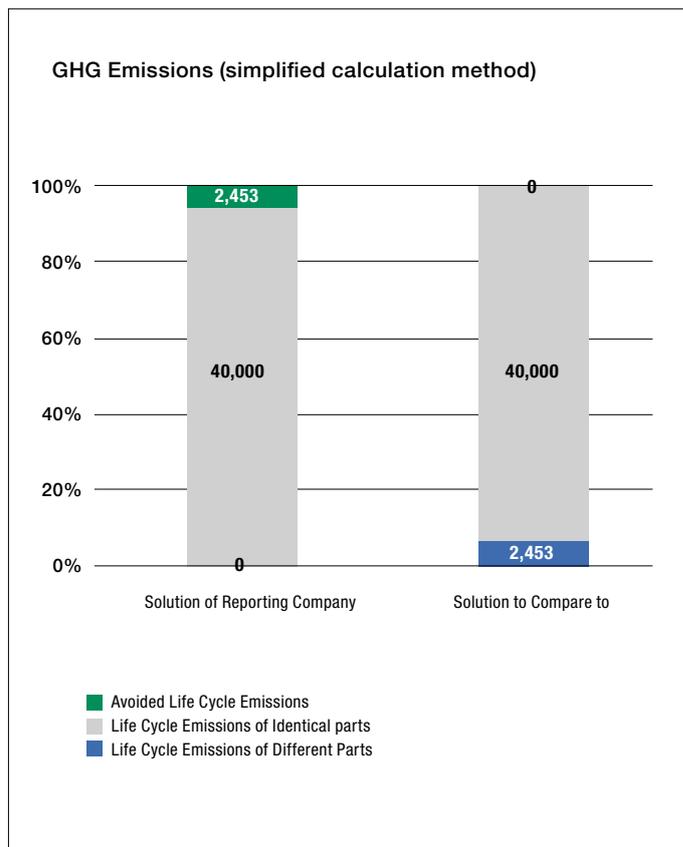


A study has been carried out to characterize the avoided emissions associated with an innovative mode of chemical product distribution logistics between Eastman and other chemical company partners, called “Alternate Methods of Supply” (AMS). This study was initiated and performed by Eastman Chemical Company to better understand the life cycle impacts of the Eastman supply chain, and of distribution swaps between 2 chemical companies.

AMS can be used when two chemical companies produce a practically identical and mutually interchangeable chemical product in two separate geographic regions. If both companies are willing to engage in AMS then a specific quantity of chemical product to be sold can be swapped in order to reduce the amount of inter-continental transportation required to distribute that product to customers. Such a swap takes place under a bilateral agreement and represents an alternative method of shipping as compared with standard shipping methods where each company distributes its own products globally.

This study shows that such bilateral agreements do contribute to significant reductions in greenhouse gas emissions. For the yearlong period studied, an estimated 2,450 tonnes of CO₂ equivalent emission were avoided as compared against conventional logistics. The simplified assessment approach recommended by the WBCSD/ICCA guidelines has been used to calculate the difference between the 2 different distribution patterns.

Full study available at: www.icca-chem.org/energy-climate



How to save shipping using bilateral agreements

The map shows the transportation routes using conventional methods (left) and bilateral exchanges (right). The names of Eastman’s AMS partners and the chemical products being distributed and swapped, are confidential.



This case study illustrates how the reduction of greenhouse gas (GHG) emissions can be enabled by chemical products, as part of a series of case studies brought to you by ICCA. Chemical industry members offered Life Cycle Assessment [LCA] case studies for the purpose of showing illustrative examples on how to calculate avoided greenhouse gas emissions. The avoided emission calculations were based on the guidelines developed by ICCA and WBCSD (World Business Council for Sustainable Development) - Chemical Sector, with the support of Arthur D. Little and Ecofys. Other life cycle environmental impacts such as water and land use change were outside the scope and usually not considered.

