Environmental Supply Chain Planning – Expanding The Accountability

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Regardless of where one stands on the subject of climate change, we are all impacted by rising energy prices and our dependence on foreign oil. Since carbon-based energy fuels our economy and carbon dioxide (CO2) is the by-product, any effort to reduce fuel use will also reduce greenhouse gas emissions. Further reductions in fuel use can also reduce nitrous oxide (NOx) and particulate matter (PM) emissions. Saving fuel, therefore, is a win-win position both for the economy and for the environment. The freight sector is a significant contributor to greenhouse gases, and it is imperative that industry's logistics and supply chain sectors become involved in environmental awareness. As logistics and supply chain professionals, we can be a significant part of the solution and also help to make our businesses more profitable.

Before I inform you on what my company is doing on a global level, I would like to share some background. I will then discuss what Environmental Supply Chain Planning is at Sharp Electronics, and what we are doing in conjunction with the US Environmental Protection Agency.

Personal and commercial transportation accounts for 2/3 of the country's oil consumption and 1/3 the CO2 emissions.

Total NOx emissions in US in 2004 were estimated at 6.3 million tons with 56% coming in the sector of freight. Particulate Matter (PM) estimated at 305,000 tons with 32% coming from the area of freight.

Sharp Corporation (Japan), Sharp Electronics USA, and the Environmental Supply Chain community are all working on ways to proactively combat these areas of environmental concern.

Sharp Corporation (Japan) **and Sharp Electronics USA** are working with members of the environmental supply chain community to confront these areas of environmental concern. With its headquarters in Osaka, Japan, Sharp is working towards being an environmentally green company and has introduced what it calls a ‘Super Green Strategy'. All Sharp manufacturing sites have gained ISO14001 Environmental Management System certification and the corporation has established intra-company guidelines for the production of environmentally conscious product designs.

The company has embraced the philosophy of Environmental Supply Chain Planning which looks at the logistics and supply chain as it relates to the environment, and not just in terms of cost. It is looking at ways of reducing the movement of products by selling directly from factories; it is trying to use modes of transport which will result in the lowest attainable carbon footprint; and it asks its customers to consider combining orders or using weekly shipments where possible. Other corporate initiatives include the use of correct packaging to prevent product damage and subsequent return, and the implementation of a 'planning from the right place' concept which aims to reduce inter-facility transfers.

Sharp's key environmental project, however, is its participation in the SmartWay Program, a **US Environmental Protection Agency (EPA)** initiative which the company signed up to in 1994. The program covers freight movement by truck, rail and sea, and was set up to establish incentives for fuel efficiency improvement and greenhouse gas emission reductions. By 2012, the initiative aims to reduce, between 33-66 million metric tonnes (mt) of CO2 emissions and up to 200,000 mt of NOx emissions each year. It is also hoped that the scheme will result in annual fuel savings of up to 150 million barrels of oil.

Under the terms of the voluntary program, freight carriers can apply to become a SmartWay Transport Partner, and shippers then pledge to use SmartWay carriers. In signing up to the programme, carriers must measure their current environmental performance using the SmartWay Transport Fleet Logistics Energy and

Environmental Tracking (FLEET) Performance Model for carriers and then commit to improving their performance within three years. In return, shippers must then assess the current proportion of goods dispatched with SmartWay Transport Partner Carriers using the FLEET Performance Model for Shippers. This model allows a company to quantify the percentage of freight they ship or receive with fleets that are members of the SmartWay Transport Partnership, and it also has the capability to help shippers estimate the CO2, NOx, and PM emissions generated from their entire shipping operations.

For shippers to become SmartWay Transport partners, they must commit to ship at least 50% of their goods using SmartWay carriers, and also assess and commit to improving facility transport emissions within three years.

For Sharp USA, its response to joining the SmartWay Program was to establish an action plan with goals which included having strict pick-up times on Less-Than-Truckload (LTL) shipments, implementing a no-idle policy on trucks when waiting to be loaded, and receiving Customs-Trade Partnership Against Terrorism (C-TPAT) certification.

For Sharp USA, the results of SmartWay membership have been positive. In 2004/5, 28% of the 85 carriers it used were SmartWay members, and this had risen to 90% by 2006/7. Yet again, in 2004/5 33% of a total of 127,841 mt was shipped with SmartWay carriers which rose to 98% in 2006/7. The adoption of a non-idle policy and increased usage of intermodal means of transport also resulted in a reduction between 2004-2007 of CO2 emissions (918.2 mt), PM (0.8 mt), NOx (18.5 mt), and a saving of 82,005 gallons of diesel fuel. Sharp also won the 2006 and 2007 SmartWay Excellence Award, the only shipper to have won it twice.

The next step is for more ocean carriers to sign up to SmartWay. This will require a commitment to using low sulphur bunker fuels and looking for other fuel improvements, as a well as a commitment to engine improvements such as the use of slide valves, fuel injection, and exhaust gas recirculation (EGR). A move to using scrubbers, catalysts, bonnets and other aftertreatments should also be on the agenda, as well as considering other innovations such as cold-ironing, speed reduction and hull coatings.

As a company, Sharp is receiving more and more enquiries from consumers asking what we are doing to address environmental issues. Some 52 freight shippers and 15 shipper-carriers have now signed up to the SmartWay scheme, and we must all be committed to finding long term solutions and introducing more sustainable operations. We would like to see a SmartWay transport programme introduced across the European Union (EU), but it is important that companies aim to exceed the current requirements which have been mandated and that they realize that their competitors are also aware of these issues so that they must take a lead in tackling environmental concerns in order to stay ahead.

As I have noted, it is important that a company not just meet the current requirements which have been mandated, but go beyond that. I am hoping to see, in the not so distance future, a SmartWay Transport Program adapted in the EU. I would also like to see an International Standard set for Ocean Carriers as it relates to greenhouse gases.

With your help and participation we know we will not have to wait long.