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INTRODUCTION

In June of 2011, the Commission for Environmental Cooperation (CEC) launched a new project, “Improving the Economic and Environmental Performance of the North American Automotive Industry Supply Chain”, with the objective of engaging key automotive companies for the development and implementation of green supply-chain programs across North America.

Similar established supply chain efforts had demonstrated strong success, such as the Suppliers Partnership for the Environment (SP) organization in the United States that would serve as a model for this project, and the CEC understood that these programs can be the foundation for automotive manufacturers and their suppliers to share information and practices that will improve environmental and economic performance within this North American sector supply chain.

Since the project’s launch last year, the CEC has engaged a diverse group of automakers, suppliers and governments representatives from across North America to identify the unique opportunities and value that these green supply chain programs can provide in both Mexico and Canada, and built a strong foundation for self-sustaining industry led programs that can continue to endure after this CEC project comes to a close.

The following report focuses on the auto supply chain project’s activities in 2012, as the CEC project team worked to develop auto supply chain programs in Mexico and Canada and initiated a North American strategy in preparation for the project’s transition to an industry-led initiative.

“I think that the North American approach to greening the supply chain is important because for the manufacturing base in North America to be strong, for it to be successful, for it to be sustainable, we have to work with the entire supply chain…. So by focusing on the supply chain you affect the entire supply chain all the way up to the original equipment manufacturers and I think that’s a successful way of operating.”

Tom Murray, Chief, Prevention Analysis Branch
U.S. Environmental Protection Agency (EPA)
Chair, Ad-Hoc Advisory Group
CEC Auto Supply Chain Project

Report to the Commission for Environmental Cooperation (CEC)

Prepared by:

Navista Inc.
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December 2012
- Participants at CEC Auto Supply Chain Project Meetings in Mexico and Canada (2012)
KEY ACHIEVEMENTS IN 2012

- Facilitated environmental collaboration and cross border exchange of tools / best practices among automakers and their suppliers in North America through CEC hosted Forums in Mexico City and Toronto, as well as Working Group teleconferences.

- Established the foundation and structure for ongoing collaborative automotive green supply chain programs in Mexico and Canada, with clear next steps for action.

- Created a North American Working Group of the Suppliers Partnership for the Environment (SP) to serve as the North American collaborative platform for companies in the United States, Mexico and Canada to share information, network and collaborate on environmental sustainability in the automotive supply chain.

- Incorporated Alianza Verde Automotriz (AVA) and SP Canada as integrated programs of the new SP North American Work Group, while maintaining the SP organization’s existing membership structure.

- Organizations in the automotive supply chain have financially committed to continue working collaboratively to improve the environmental sustainability of the automotive supply chain across North America through the Suppliers Partnership for the Environment (SP).
COMMITTED ORGANIZATIONS

The following organizations have financially committed to improving environmental sustainability through the North American automotive supply chain through the Suppliers Partnership for the Environment (SP) as of December 2012. As new organizations continue to engage, updates will be posted at www.supplierspartnership.org

PROJECT AD-HOC ADVISORY COMMITTEE MEMBERS
MEXICO: ALIANZA VERDE AUTOMOTRIZ

As a follow up to the successful Alianza Verde Automotriz (AVA) launch meeting in December of 2011, CEC hosted two key meetings of AVA in 2012. The first on May 24 at Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) in Mexico City¹ and the second on September 5 at the headquarters of General Motors Mexico in Mexico City².

Through these meetings, automakers, their suppliers and government representatives in Mexico built on the vision and mission for AVA they had worked together to craft in 2011. The participating companies identified three key environmental areas that would be the focus of new value-driven projects and activities that AVA would address in the next year: energy efficiency, water efficiency, and waste management / resource creation. With key issues identified, environmental leaders from Chrysler Mexico, Ford Mexico and GM Mexico lead the creation of three issue focused Working Groups and set out to collaboratively define key objectives for AVA to work toward.

A Working Group chaired by Arnulfo Berlanga of General Motors Mexico was organized to focus on energy efficiency opportunities in the automotive supply chain. Current objectives for AVA’s Energy Efficiency Work Group include:

1) Creating a process for suppliers to better understand where they are in relation to energy efficiency and its corresponding impact on the environment.

2) Creating a tool and/or identifying existing tools that can be utilized and scaled for various sizes of suppliers that will help those suppliers address energy efficiency opportunities that will improve the environment and economic opportunities for their companies.

3) Establishing clear goals and objectives relating to improved, quantifiable success relating to energy efficiency activities and projects, recognizing the difference between goals and objectives.

Chaired by Luis Lara of Ford Mexico, AVA organized a Working Group that will focus on challenges and opportunities related to water efficiency in Mexico. Current objectives for AVA’s **Water Efficiency** Working Group include:

1) Collecting and sharing information among all participants that will enhance the ability of companies in the automobile supply chain in Mexico to improve their use and potential re-use of water in their manufacturing activities.
2) Focusing on measurement of water as a diagnostic tool, in order to control its use recognizing that continuous improvement can be used to improve water efficiency.
3) Finding a way to utilize voluntary audit verifications to affirm progress made on identified Key Performance Indicators (KPIs).

In addition, a Working Group chaired by Delia Rivas of Chrysler Mexico was organized to focus on working collaboratively to find innovative new solutions, beneficial reuses, and economic value in materials that have been traditionally considered waste. Current objectives for AVA’s **Waste Management and Resource Creation** Working Group include:

1) Identifying a list of wastes that AVA participants collectively want to “disappear.”
2) Challenging ourselves to find better solutions and uses for materials that can provide economic value for companies in the automotive supply chain.
3) Inviting other stakeholders to work with and collaborate with AVA toward a common vision committed to creating economic opportunity out of what has historically been considered waste.

While AVA made significant progress in developing its operating structure and setting clear objectives for the initiative to work toward moving forward, there were many opportunities for participants to collaborate and share environmental best practices throughout the process. Each AVA Membership Meeting and Working Group discussion devoted time for participants to share and discuss best practices, tools and resources in each of AVA’s key issue areas.

One notable example in the area of water efficiency is a case study shared by Ford Mexico on the company’s Chihuahua Engine Plant (ChEP). AVA participants learned that the facility has its own wastewater treatment plant, which has been updated and modified to recycle and reuse as much water as possible. About 80 percent of the treated water goes back into the industrial process; the rest is used for land irrigation around the plant.

The plant, which has zero discharge to the municipal sewer system, won the CONAGUA – COPARMEX 2011 Environmental Cooperation Program National competition for efficient water use, and the 2010 Environmental Leadership for Competitiveness Award from the Mexican government for projects that are saving more than 32,000 cubic meters of water a year. Some of these initiatives shared with AVA participants include:

- Using reverse-osmosis-treated gray water from the city’s water system, instead of drinking quality water, in the cooling towers of compressor machines and other manufacturing processes, such as washing machines and coolant systems. This system saves more than 3,500 cubic meters of water per year and more than 290,000 pesos per year, equivalent to about $25,000.
- Using more reverse-osmosis-treated water, rather than drinkable water, for washing equipment and floors in the facility. This saves an estimated 28 cubic meters of fresh water per year and approximately 475,000 pesos ($40,500) in reduced water, labor and cleaning costs.
- Implementing a new floor cleaning system that saves another 112 cubic meters annually.

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In discussions of energy efficiency, GM Mexico shared strategies for companies to improve their energy efficiency, including an Energy Sufficiency Plan and a Zero Energy Plan⁴. Suppliers also shared their experience and practices related to energy efficiency. For example, at DENSO Mexico’s Apodaca plant, the company reported it has reduced energy usage by turning off equipment when an operator takes a lunch break⁵. The company installed a time delay device that turns off the plant’s printing machine dryers, which include a heater and fan, and then automatically restarts after 30 minutes so that the machines are ready for production when the operator returns from break.

Participants shared several success stories and opportunities related to waste management throughout the project. In one example of a waste reduction project that was shared from Chrysler’s Toluca Mexico complex, the company was seeking to find an innovative solution to reduce waste solvent and waste oil streams that had previously been disposed of by conventional methods⁶. By working through their supply chain, Chrysler was able to identify an innovative supplier who could reuse the waste solvent and oil, as well as use the byproducts as an input in the production of conventional paint (see diagram to the right). As a result, Chrysler reduced its disposal and transportation costs for the two waste streams to zero, and is keeping 120,000 liters per year of the wastes out of landfill.

In addition, AVA Work Group participants have begun identifying a list of those challenging waste streams that they aim to work together to find better solutions to manage. Follow up Work Group and AVA Membership Meetings are now being scheduled for 2013.

**CANADA: SUPPLIERS PARTNERSHIP FOR THE ENVIRONMENT CANADA**

As a follow up to the positive Suppliers Partnership for the Environment Canada (SP Canada) project launch meeting in December of 2011, the CEC hosted two key meetings of SP Canada in 2012: the first on June 12 at Chrysler’s Brampton Assembly Plant in Brampton, Ontario⁷ and the second on December 4 in Toronto, Ontario⁸. Through these forums, automakers, their suppliers and government representatives refined a vision for a unique opportunity in Canada for automotive industry stakeholders to network, collaborate and share information related to environmental sustainability in the automotive supply chain.

The value of a program such as the Suppliers Partnership focused on supporting voluntary collaborative environmental innovation through the supply chain, and its uniqueness in the Canadian marketplace was reiterated throughout discussions with stakeholders in Canada. Participants also noted the commonalities between Canada and the United States and the potential opportunities to develop cross-

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border synergies, including taking advantage of existing Work Group programs of the Suppliers Partnership for the Environment (SP) in the United States.

Having confirmed the value of the project in Canada, stakeholders structured project meetings around Environmental Sustainability Forums with discussions focused on key issues of energy efficiency, water efficiency and waste management / resource creation.

As an example, several automotive suppliers operating in Canada shared information on their companies’ environmental sustainability programs during SP Canada’s December 2012 Environmental Sustainability Forum. Included in this discussion was Johnson Controls, a globally diversified company in the building and automotive industries, who shared several of the continuous sustainability improvements taking place at Johnson Controls’ seven facilities in Ontario, such as an automotive foam cushion/ pad scrap that the company has processed for recycling using a community based program that benefits the mentally and physically challenged.

Feedback from stakeholders in Canada has shown the SP Canada Forums to be a valuable resource in many respects: including as a unique networking forum in Canada for automakers and suppliers to collaborate on environmental issues; as a forum to share and benefit from environmental innovation on a North American basis; and, as a platform for small-medium business to interact, share innovations and learn from larger manufacturers in the auto industry.

The next SP Canada Environmental Sustainability Forum is now being scheduled for 2013. In preparation for this Forum, stakeholders have strongly recommended that the Ministry of Environment (MOE) be actively engaged in the project.

NORTH AMERICAN COLLABORATIVE PLATFORM

A significant piece of feedback from participants throughout the project discussions has been the importance of creating a single platform that will draw together the automotive supply chain activities in each country, rather than creating new independent organizations in Mexico and Canada.

Recognizing the importance of a developing one North American gateway for collaboration, the CEC project team has worked with partners at the Suppliers Partnership for the Environment (SP) to develop a strategy to expand SP’s existing network to Mexico and Canada. A key feature of this strategy was that the projects in Mexico and Canada must be self-sustaining, and would be built based on the commitments of new companies engaged in each country.

At its 4th Quarter Membership Meeting in Knoxville, Tennessee, SP announced that it would be launching a new North American Collaboration Work Group. Objectives of the Work Group include:

1) establishing a network of auto industry subject matter experts from the United States, Mexico and Canada working together toward a common goal
2) providing an educational forum to share global best practices, value added tools / resources, and success stories highlighting how companies in the automotive supply chain are improving the environment and creating economic opportunity throughout the manufacturing process across North America
3) creating the North American platform for automakers, their suppliers and government representatives to work together to improve environmental performance while increasing value throughout the automotive supply chain.

While maintaining their individual country leadership, Alianza Verde Automotriz (AVA) and SP Canada are now each being transitioned from CEC supported projects to industry led self-sustaining projects operating through this Working Group of SP. Through this Working Group approach, companies participating in any one country of North America will be eligible to participate and benefit from the activities in all three countries through a single membership. Invitations are now being made to suppliers in each country to commit to engage in this project.

STRATEGIC OPPORTUNITY FOR THE COMMISSION IN 2013

There exists a compelling array of innovation that can lead to significant reduction in areas such as energy use, materials use and manufacturing costs while improving environmental performance, particularly among small business entrepreneurs. Yet, many of these advanced manufacturing process innovations are not readily adopted and may fail to realize their significant potential global impact on business growth and environmental sustainability. At the same time – recognizing the close link between innovation, manufacturing leadership and economic growth – major public-private efforts, such as the United States Advanced Manufacturing Partnership, have recently focused their attention on this very subject, and identified the need to create a fertile environment for innovation to achieve real progress.

Through its “Greening the Economy” project, the CEC has sought to focus on positive steps towards building a North American economy that minimizes potential environmental impacts of economic growth, while enhancing the competitiveness of key industrial sectors in North America, such as the automotive supply chain. While the Suppliers Partnership for the Environment (SP) through its Technology & Networking Work Group, has set objectives to identify and champion small business innovators, and facilitate a process for those companies to share innovative ideas and opportunities with OEMs and Tier 1 companies in the automotive industry.

In recognition of the CEC and SP’s shared objectives, a combined Spring 2013 Summit on Accelerating Innovation to Drive Sustainable Automotive Manufacturing Growth across North America has been proposed. In co-hosting this Summit, CEC and SP would bring together a diverse group of public and private stakeholders from across the North American automotive supply chain to explore barriers contributing to the underutilization of environmentally impactful advanced manufacturing process innovations, and seek to identify key actions for implementation to address these barriers.

It is anticipated that this initial Summit would set the foundation for a regular North American event in the automotive sector in which results and objectives would be reviewed and assessed. In addition, the process and the eventual results of this Summit may provide a model for other manufacturing sectors to consider in addressing the challenge of closing this innovation gap.
CONCLUSION

The Commission’s project on “Improving the Economic and Environmental Performance of the North American Automotive Industry Supply Chain” has built a solid foundation for automotive supply chain leaders to continue to build on in North America.

Through engaging a core of stakeholders in each country in the process, the project team has worked successfully in collaboration with industry leaders to design value-driven green supply chain programs in both Mexico and Canada and received solid engagement in continuing to drive the program forward. Companies in the automotive supply chain now have access to a North American platform for environmental collaboration through the Suppliers Partnership for the Environment (SP), and new opportunities to collaborate, network and share information on environmental sustainability in the automotive supply chain in cooperation with governmental liaisons in each country.

With a strong outlook for continued self-sustaining green supply chain programs across North America, new opportunities for CEC in the auto sector still await. As we approach 2013, we look forward to convening the key stakeholders of this North American supply chain to Drive Sustainable Automotive Manufacturing Growth across North America through Accelerating Innovation.
CEC NORTH AMERICAN AUTOMOTIVE INDUSTRY SUPPLY CHAIN
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