



**G75**<sup>2011</sup>

From 3PLs to air cargo carriers, ports to truckers, *Inbound Logistics* gives the green light to supply chain visionaries who every day demonstrate their commitment to sustainability.

# 75 Green Supply Chain Partners

## AEP River Operations

AEP River Operations began its SEE GREEN recycling project in 2008. Since then, it has recycled more than two barge loads of products from its boats. All AEP River Operations towboats – from West Virginia to New Orleans – are currently participating in recycling all, or a portion, of their onboard waste. Going one step further, AEP has also recycled 70,000 pounds of vessel mooring lines, which would have packed landfills or endangered boats by getting tangled in their propellers.

## Aspen Logistics

Aspen reduced power and pollutant gases by retrofitting all its facilities with high-efficiency fluorescent lighting, and received an Environmental Stewardship Award for this project. The company also conducts routine refrigeration systems maintenance to prohibit the release of CFC into the atmosphere. All paper, cardboard, used pallets, and printer supplies are recycled. In addition, Aspen tractors are equipped with emission control reduction components, and certified to operate according to California Air Resources Board regulations.

## Agility

Global 3PL Agility has demonstrated its commitment to sustainability by releasing its first corporate social responsibility (CSR) report, which reviews its CSR commitments to date, and highlights progress and priorities for the future. Agility has developed and employed a number of tools to help shippers determine how to measure and reduce their supply chain operations' environmental impact, and has established a global program to improve employee awareness about the environment. In addition, Agility is a strategic partner of the World Economic Forum, where it participates in various environment-related working groups.

Reduced-emissions tractors | Aspen Logistics



Fueling with ultra-low-sulfur diesel | Averitt



## Averitt

Averitt is taking steps in every area of operations to reduce its carbon footprint and find better, more environmentally friendly ways to conduct business. The 3PL uses only ultra-low-sulfur diesel at its in-house fueling stations, and employs low-emission diesel tractor engines. For vehicle maintenance, Averitt uses low-viscosity lubricants and engine oils, which reduce the frequency of maintenance service intervals, therefore producing fewer waste products. The company also employs recycling operations at all facilities.

## Cardinal Logistics Management Corporation

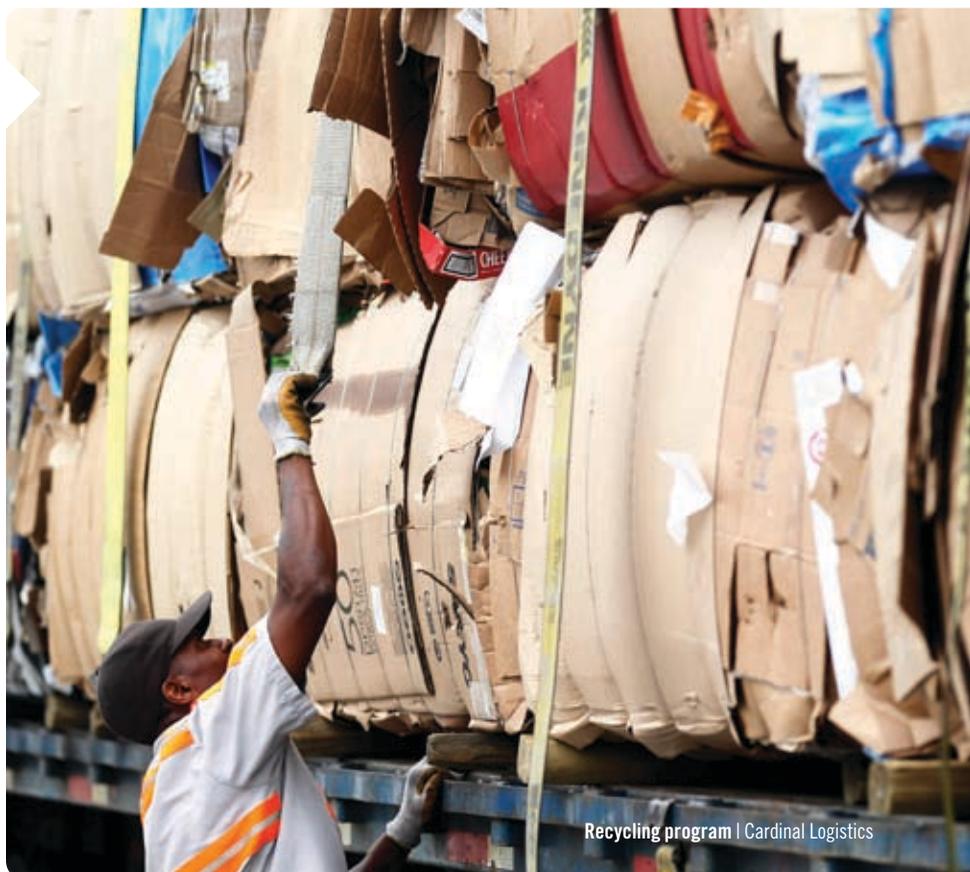
To ensure Cardinal's operations are as environmentally safe as possible, it has taken steps such as improving its fleet with new, lower emissions equipment; using speed governors, auxiliary power units, and idle shutdown and other modifications to reduce fuel usage; and implementing a recycling program at its facilities. It has explored alternative fuels, trained drivers on proper maintenance and driving habits, and offered them incentives for low fuel-usage rates. Cardinal has also been able to reduce miles and provide backhaul support. Furthering its commitment to green, the company's proprietary technologies help lower fleet emissions by reducing miles, and monitoring for efficient performance.

## Cat Logistics

Sustainable development is ingrained in Cat Logistics' culture and business practices. Since it released its sustainable development Vision 2020 goals in 2008, Cat has constructed all new facilities to LEED-certified specifications, and conducted lighting renovations in various facilities around the world. Since October 2009, the Cat Logistics facility in Desford, England, has not sent any waste to a landfill, meeting the company's zero-waste goal 10 years early. Cat Logistics also keeps division-wide metrics for sustainable development in greenhouse gas emissions, water usage, recycling, and employee engagement.



Green warehouse operations | Cat Logistics



Recycling program | Cardinal Logistics

## CEVA Logistics

In 2008, CEVA adopted a company-wide sustainability program to reduce the environmental impact of its business activities, particularly carbon emissions. The program encompasses measuring and reducing customers' carbon footprints; measuring and reducing the carbon footprint in warehouse activities via lean logistics and Kaizen activities; improving CEVA vehicles' fuel efficiency; and using a "green checklist" when procuring certain types of products.

## C.H. Robinson Worldwide

C.H. Robinson views sustainability as a way to add value, improve efficiencies, and invest in the long-term success of shippers, contract carriers, growers, employees, and communities. The 3PL offers services that optimize business processes to efficiently use transportation and distribution network resources, ultimately driving out costs and minimizing carbon emissions. The company's produce-sourcing programs help reduce the distance from farm to table. Working directly with growers and retail customers helps allocate natural resources wisely and builds efficient farm-to-shelf distribution models. And its work with Cascade Sierra Solutions helps motor carriers reduce fuel consumption and carbon emissions.



## DB Schenker

DB Schenker has launched Eco Solutions, a comprehensive range of climate-friendly transportation and logistics services. Eco Plus offers CO<sub>2</sub>-free rail freight throughout Germany; Eco OceanLane enables shippers to reduce ocean freight CO<sub>2</sub> emissions by up to 50 percent; and the Eco Charter airfreight solution can reduce CO<sub>2</sub> emissions on select routes by up to 20 percent. DB Schenker also offers Eco Warehouse, a solution for building and operating energy-efficient and sustainable warehouses, and Eco Neutral, which lets shippers offset their CO<sub>2</sub> emissions by financing climate protection projects.



CO<sub>2</sub>-free rail freight | DB Schenker

## DSC Logistics

DSC is committed to adopting green practices throughout the company and to helping shippers achieve their sustainability initiatives. Since a coordinated company-wide program was launched in 2009, DSC Logistics has continued to improve and implement initiatives at all locations in its network. These initiatives augment the energy-saving and waste-reduction programs that the 3PL implemented on a location-by-location basis over the past several years.

## EA Logistics

Delivered GrEAn, EA Logistics' sustainability program, includes measuring carbon emissions incurred in the freight it transports, and free offsetting of those emissions. EA Logistics uses biodiesel fuel in the company fleet; has installed T-5 energy-efficient lighting in its warehouses; complies with all anti-idle regulations at its warehouse and in its trucks; monitors its fleet to provide routing efficiency; trains drivers on efficient driving; and acts as a greener freight advocate in the industries it serves.

## The Evans Network of Companies

In 2008, the Evans Network of Companies began focusing on reducing emissions by working with the EPA and non-government organizations to secure grants and other support for upgrading port drayage independent contractor trucks with emission-reduction technology. A new program called Export Coordination/Optimization-Match, or ECO-Match, aims to cut emissions and shipping costs by matching import and export loads to reduce the number of trucks needed for container pickup and delivery.



T-5 energy-efficient lighting | EA Logistics

Hydrogen fueling station | GENCO ATC



## GENCO ATC

GENCO ATC partnered with customer Kimberly-Clark Corporation, Plug Power Inc., Air Products, and the Aiken-Edgefield Development Partnership to launch the nation's first multi-use industrial park fueling station in Graniteville, S.C. The fueling station supplies hydrogen directly to Kimberly-Clark's 450,000-square-foot distribution facility, managed by GENCO ATC, to be used with fuel cells powering Toyota forklifts. Using hydrogen fuel cells instead of lead-acid batteries can reduce greenhouse gases by more than 90 percent, according to customer consumption estimates.

## Hellmann Worldwide Logistics

Living sustainably is part of Hellmann Worldwide Logistics' corporate DNA. The global 3PL supports environmental sustainability by using eco-friendly trucks worldwide, partnering with SmartWay drayage companies, recycling and reducing waste of all relevant materials, switching to energy-saving electricity, and eliminating ammonia in its refrigerated warehouses.

## Hub Group

As an intermodal service provider, Hub Group is inherently green. For shipments moving more than 1,000 miles, intermodal transport cuts fuel use and greenhouse gas emissions by 65 percent compared to truck transport alone. Railroads are three times more fuel-efficient than trucks, and can move one ton of freight nearly 500 miles per gallon of fuel. Intermodal also helps reduce road congestion — one double-stack train equals 280 trucks.

## Inmar

Inmar's reverse logistics services help shippers further their sustainability goals in a number of ways. For example, its re-marketing services kept more than 181 million pounds of material out of landfills in 2010. And through its donation program, two million boxes of food product that would have gone to waste were instead used to create six million meals for the needy in 2010. Supply chain services, such as packaging studies, have helped shippers reduce product packaging, while ensuring that new, more environmentally friendly packaging does not increase product damage, which ultimately results in waste.

Eco-friendly truck | Hellmann Worldwide Logistics



## J.B. Hunt

Intermodal transportation is the highlight of J.B. Hunt's green service offerings – converting traditional truckloads to intermodal can reduce carbon emissions by 50 percent while lowering overall transportation costs. By utilizing double-stacked containers, J.B. Hunt increases fuel efficiency and decreases greenhouse gas emissions. Additional offerings include the Green Fleet dedicated contract solution, which involves working with customers to equip and manage a truck fleet that leverages emission-reduction opportunities. J.B. Hunt has also developed the Hunt Carbon Diet – a five-step carbon reduction program designed to improve energy efficiency, reduce carbon consumption and emissions, and lower transportation costs. J.B. Hunt has twice received the EPA SmartWay Carrier Excellence Award.



Double-stacked containers | J.B. Hunt

## Kenco Logistic Services

Kenco views sustainability as a critical initiative, both inside the organization and on behalf of customers. The 3PL recently hired a full-time sustainability leader to oversee and drive green initiatives. In April 2011, Kenco established Web-based resource usage reporting via the EPA's Portfolio Manager for tracking select sites' carbon and water footprints. Kenco is currently developing a corporate sustainability assessment, site/facility audit, and sustainability best practices tutorial. In addition, the company has been incrementally upgrading its fleet with all-electric auxiliary power units to reduce idle time and fuel consumption.

## Lynden

Lynden was the first transportation company in Alaska to gain SmartWay certification, and earned the state's GreenStar Award. Under its environmental policy, Lynden will meet or exceed environmental laws and regulations; maintain continual improvement in environmental performance; consider the long-term and overall environmental impact of its choices; strike the optimum balance between the environment and the long-term viability of its business; prevent pollution and protect the land, air, and water by maximizing efficiency, operating safely and responsibly, striving for cleaner processes, and guarding against accidents and avoidable pollution; and establish, monitor, and periodically review environmental objectives and targets.

## NFI

The 3PL took steps to reduce its carbon footprint by implementing the NFI Fit Fleet of vehicles. Features of the fleet include super single tires, speed governors, and the use of biofuel and synthetic oil. NFI is also outfitting its facilities with the latest in energy-efficient technologies; and its Cherry Hill, N.J., headquarters operates solely on solar power. A recycling program is in place at all 54 nationwide facilities, and NFI has appointed a senior executive team member to lead sustainability efforts.

## Penske Logistics

Improving miles-per-gallon performance and reducing truck fleet emissions are the core ingredients of Penske Logistics' green strategy. The third-party logistics provider also helps shippers analyze and reduce their own carbon footprints through optimized routes to save fuel, efficient trailer loading, and green lighting and recycling program advice. Penske Logistics is an active participant in the EPA's SmartWay Transport Partnership and has earned the program's highest rating of 1.25 as both a carrier partner for the company's own logistics truck fleet, and as a logistics and shipper partner.

## Performance Team

Performance Team operates more than 60 Kenworth clean diesel tractors in its fleet, and initiated a no-idling policy at all locations around the country. All new forklifts purchased for its warehouse facilities meet California .06 carbon requirements for using less propane, creating fewer emissions, and requiring fewer oil changes and maintenance than older models. The 3PL also moved to low-energy T-5 fluorescent lighting in all facilities, installed motion detectors, and created blackout periods for long weekends and extended down times. Performance Team is a member of the Coalition for Responsible Transportation.



Natural-gas vehicles | Ryder

## Ryder

In April 2010, the San Bernardino Associated Governments (SANBAG) Board selected Ryder as its fleet partner in a ground-breaking heavy-duty natural gas truck rental and leasing project. As part of the project, which aims to improve air quality in southern California, 202 heavy-duty natural gas-powered trucks will be deployed into Ryder's southern California operations network. Based on estimates, the project will: displace 1.51 million gallons of diesel fuel with 100-percent domestically produced low-carbon natural gas; use nearly three million gallons of domestically produced low carbon LNG; reduce 9.2 million pounds of greenhouse gas emissions and 131 tons of nitrogen oxide annually; and completely eliminate 2.65 tons of diesel particulate matter emissions from local neighborhoods.

## TransGroup Worldwide Logistics

TransGroup offers TransNeutral, an opt-in program that calculates shipment-specific carbon footprints and enables users to offset the CO<sub>2</sub> emissions that result from their shipments. For every ton of CO<sub>2</sub> a TransNeutral shipment puts out, another ton can be taken away or prevented. In addition, TransGroup's end-of-product lifecycle recovery and disposition services enable technology and other asset-laden shippers to recover and properly recycle and/or dispose of equipment that has reached the end of its lifecycle.

## Transplace

Transplace's focus on placing freight with SmartWay Partner carriers has allowed it to achieve an industry-leading reduction in greenhouse gases and significant diesel fuel savings. In 2010, Transplace cut deadhead miles for private fleet carriers through a program that identified trucks that would typically run empty back to an origin. This program was able to reduce 1.6 million miles, representing 2,392 loads. In addition, Transplace's load consolidation efforts removed 5,055 trucks from the road and approximately 3.4 million miles driven by trucks.

## Werner Enterprises

Werner Enterprises is committed to investing in technologies, strategies, and policies that increase fuel efficiency and decrease its carbon footprint. Through numerous sustainability initiatives and capital investments of more than \$100 million in emissions-reducing technologies, Werner reports great strides in improving miles-per-gallon (mpg) and reducing emissions. Due strictly to mpg improvements from these fuel-savings initiatives, Werner purchased 2.6 million fewer gallons of diesel fuel in 2010 compared to 2009, which equates to a reduction of more than 20,000 tons of carbon dioxide emissions. Since 2007, Werner has saved 33 million gallons of diesel fuel, and reduced carbon dioxide emissions by more than 350,000 tons.



Emissions-reducing truck | Werner



## Continental Air Cargo

As part of United Continental Holdings, Continental Air Cargo is committed to its parent company's Eco-Skies initiative, which focuses on reducing emissions and improving aircraft fuel efficiency. Fleet modernization represents the majority of the carrier's impact: Since 1997, Continental Air has reduced emissions by 35 percent, creating an estimated 1.3 million tons fewer emissions than if it had not modernized the fleet. Other environmental improvements relate to preventing noise pollution; safely handling and disposing of toxic substances; and maintaining safe and clean supplies of drinkable water.

## Delta Cargo

Delta has increased aircraft fuel efficiency 35 percent since 2000 through improvements in technology, operating procedures, and maintenance. In 2007, it became the first U.S. airline to launch a carbon-offset program. Delta strives to conserve resources, support alternative fuels research, and engage employees and customers through initiatives such as carbon offsetting and recycling. As a member of the SkyTeam airline alliance, it adopted the organization's social responsibility standard, which includes implementing best available technologies in fleet renewal and the most efficient procedures and operations to reduce noise and air emissions, including greenhouse gases.



Fuel-efficient aircraft | Delta Cargo

## Lufthansa

Lufthansa combines measures such as fleet renewal, engine cleaning, lighter materials, improved infrastructure on the ground and in the air, and, in particular, the use of bio-kerosene. In March 2011, Lufthansa Cargo held its second-annual Cargo Climate Care Conference in Frankfurt to develop innovative solutions for the long-term improvement of the logistics sector's climate balance. During the conference, the airline presented prizes totaling \$23,000 to junior researchers, customers, and employees who had developed innovative ideas for more climate-friendly airfreight practices.



Improved ground infrastructure | Lufthansa

## DHL

In place since 2008, DHL's group-wide GoGreen environmental protection program sets goals for minimizing the company's business impact on the environment. GoGreen measures range from network and capacity optimization, fleet modernization, and alternative vehicle tests to facility efficiency improvements and employee initiatives. By offering carbon reports, consulting services, intermodal transport, and carbon-neutral shipping services to mail, express, and logistics customers, DHL transported more than 1.7 billion carbon-neutral shipments in 2010.



GoGreen program | DHL

## FedEx

FedEx applies an EarthSmart Solutions designation, introduced in 2010, to any of its assets that meet its environmental sustainability and innovation standards, and achieve tangible results above standard industry practices. The first FedEx assets to earn the EarthSmart Solutions designation were its fleet of hybrid-electric delivery vehicles – the industry's largest – and its all-electric Modec trucks. Expanding its scope beyond vehicles, the company announced in January 2011 that any new U.S. facilities must be LEED-certified, and soon after secured Gold certification for its new Las Vegas facility and Memphis world headquarters.



All-electric vehicle | FedEx

## UPS

Because UPS operations depend on vehicles to a considerable extent, the company focuses on making its transportation networks as efficient and environmentally sound as possible. It applies this approach to its facilities as well, particularly with regard to conservation and recycling programs. Continually evaluating both available and emerging technologies, and seeking opportunities for using them, allows UPS to improve environmental performance. In March 2011, UPS charged its first Chief Sustainability Officer, Scott Wicker, with overseeing the company's sustainable business practices; introducing innovative, environmentally responsible products; and encouraging employee engagement in the communities where they live and work.



Recyclable aluminum pallet | AL Pallet

## AL Pallet

Weighing nine pounds, AL Pallet's recyclable aluminum airfreight pallet is among the lightest on the market, which creates a considerable shipment weight differential compared to wood and plastic alternatives. Shippers can load more cargo on a pallet and therefore achieve cost and emissions reductions by better utilizing assets and space.

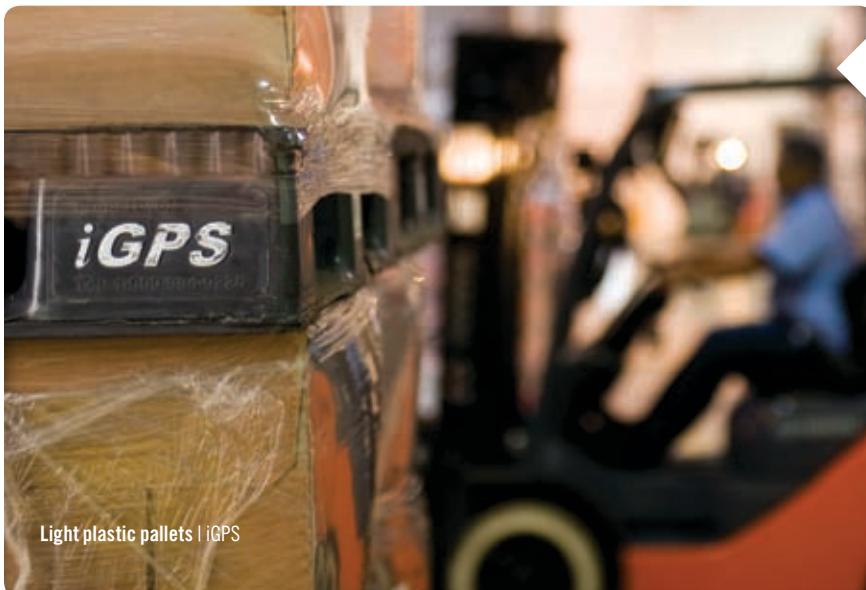
## CHEP

Shippers using CHEP's pallet pooling system in lieu of limited-use white wood pallets are achieving measurable gains reducing their environmental footprint. For example, based on third-party lifecycle inventory analysis findings, Eclipse Berry Farms has reduced solid waste generation by more than 33,000 pounds annually, decreasing greenhouse gas emissions by about 25,000 pounds, and saving enough energy to power 20 homes with electricity.



## Hyster

A two-pronged approach supports Hyster's environmental responsibility efforts: first, improving efficiency and reducing waste in its operations; and, second, developing and producing lift trucks that improve efficiency and reduce energy consumption. One of the largest-volume North American producers of zero-emission electric lift trucks, Hyster was among the first to adopt energy-efficient AC motor and control technology in its counterbalanced lift trucks. It also introduced internal combustion engine-powered lift trucks that are among the lowest-emission trucks available, according to testing by the EPA.



Light plastic pallets | iGPS

## iGPS

iGPS's value proposition is built around helping shippers maximize freight with better load optimization. Its plastic pallets are 35 percent lighter than typical multi-use wood pallets, and therefore require less fuel for transport. With less fuel consumption, plastic pallets reduce pollution and greenhouse gas emissions. And, because pallets are 100-percent recyclable, if a unit breaks it can be molded into a new one, extending its lifecycle.

## Kalmar

Launched in 2008, Kalmar's ProFuture program ranks its products against five ecological decision-making drivers: power source, energy efficiency, emissions, noise pollution, and recyclability. Within each category, the product is evaluated on a scale of one to five; the highest totals offer the most environmentally friendly benefits. Kalmar has awarded the ProFuture designation to products such as its E-One RTG Zero Emission crane, hybrid straddle carrier, automatic stacking crane, ship-to-shore crane with regenerative energy source, and battery-driven forklift truck.

## Landoll

Landoll's Bendi i4's internal combustion engine (ICE) runs on LP gas, a lower-emissions fuel alternative, and its rear-mounted fuel tank is easy to refill or remove and replace, reducing the risk of spills. The ICE is rated at 67 horsepower at 2400 rpm, and meets or exceeds emission standards for its vehicle class in all 50 states. Landoll also offers the eco-friendly, battery-powered Bendi Electric narrow-aisle lift trucks, available with 3,000- to 4,500-pound lift capacities, and three-stage tilting masts with lift heights up to 36 feet.

## The Raymond Corporation

In addition to producing energy-efficient electrical lift trucks, Raymond is investigating and developing alternative energies such as hydrogen fuel cell technology. Because they can be refueled in just a few minutes and eliminate the need for battery changes, hydrogen fuel cells offer higher productivity. The voltage delivered by a fuel cell remains constant until the fuel runs out – until then, the vehicle experiences no performance degradation. And hydrogen is environmentally clean: the only by-products from a fuel cell are water and heat.

Battery-powered lift truck | Raymond



Low-emissions lift truck | Toyota

## Toyota Industrial Equipment Manufacturing (TIEM)

TIEM's environmental and safety improvements include transitioning its Columbus, Ind., manufacturing plant to a zero-landfill facility in 2004, which has kept 2,600 tons of materials out of the landfill, and reducing the facility's energy usage in 2008 to prevent 3,911 tons of CO<sub>2</sub> emissions. The company also promotes sustainability in its product line: Toyota 8-Series lift trucks feature an exclusive emissions system that not only surpasses current EPA standards, but also meets California's stringent emission regulations.

## Yale

A number of green innovations are at work in Yale's lift trucks. An electronically controlled transmission significantly reduces tire and brake wear for internal combustion engine lift trucks, which meet or exceed California Air Resources Board emissions requirements. Its zero-emission electric-powered lift trucks feature a system that recaptures energy during braking and load lowering; the energy is reused, reducing the truck's overall energy consumption. And through alternative power initiatives, such as hydrogen fuel cell technology, more efficient batteries, and clean diesel fuels, Yale supports eco-friendly product design.





Cold-ironing | APL

## APL

APL invests and participates in a number of programs that help reduce the company's environmental footprint, including slow steaming, cold-ironing (shore power), and use of emulsified and biodiesel fuel, as well as innovative technologies such as ballast water treatment. To strengthen its pledge to reduce emissions, APL began its voluntary fuel-switching program in Los Angeles and Seattle in 2007; it has since extended the program to Vancouver, Hong Kong, New York, and New Jersey. In April 2011, APL became the first shipping line to switch its vessels to cleaner-burning low-sulfur fuel at the Port of Singapore. The move is expected to curb sulfur oxides emissions from ships by almost 90 percent.

## CMA CGM

Since 2005, CMA CGM has reduced CO<sub>2</sub> emissions from its owned and chartered fleet by 35 percent. Among its strategies for achieving these results was equipping its new vessels with the latest environmental technologies, such as electronically controlled engines, improved hydrodynamics, and waste recycling. As a result, these vessels discharge less than two ounces of CO<sub>2</sub> per mile per TEU. Another of CMA CGM's innovative solutions is equipping its fleet with 130,000 eco-containers, which feature bamboo flooring, low-energy reefers (reducing energy consumption by up to three times), and light steel containers, made of a highly resistant and much lighter steel.

## Evergreen

To reduce the environmental effects of collision or grounding, Evergreen launched its double-skin hulled Greenships vessels, which position fuel tanks in transverse bulkhead spaces to minimize risk of oil spill or fire. The carrier also adopted strategies for reducing CO<sub>2</sub> emissions, including reducing vessel speed, monitoring fuel consumption and operating conditions to ensure main engine propulsion, maximizing vessels' total cargo load, and measuring cargo operations productivity and efficiency to minimize the time vessels spend at port.

## Horizon Lines

Through its Horizon Green initiative, Horizon Lines addresses marine environment protection, emissions, sustainability, and carbon offsets. Each focus area involves a spectrum of programs, ranging from shipboard waste and ballast water management to personnel training for environmental incident response. To help shippers get involved in its green efforts, Horizon introduced the AeroGreen carbon offset solution, which calculates the amount of CO<sub>2</sub> emitted by each shipment and gives shippers the option to offset the emissions by purchasing Verified Emission Reduction credits.



Greenships vessel | Evergreen



Climate Box school program | Maersk Line

## Maersk Line

Maersk Line has focused its environmental efforts on improving vessel energy efficiency to reduce carbon footprint, reducing air emissions in port areas through fuel switching and technologies, and reducing impact on water and the marine environment through technology and operating practices. The carrier has cut emissions by 20 percent per container moved since 2002, and aims for a further reduction of 25 percent in its CO<sub>2</sub> emissions per TEU per kilometer from 2007 to 2020.

## MOL

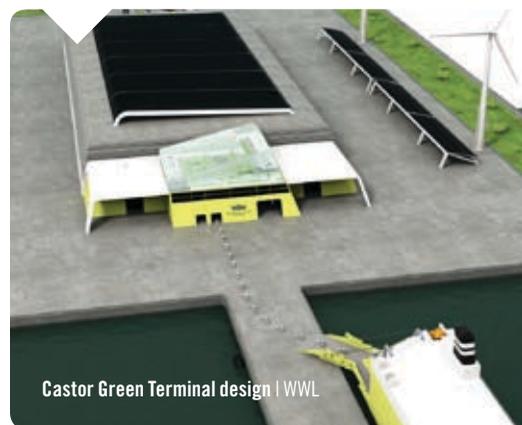
MOL received its ISO 14001 international certification for environmental management in 2003, after expanding the scope of its Environmental Management System from onshore operations to all vessels in the fleet. MOL's primary actions to prevent air pollution are focused on reducing exhaust gases, a factor in global warming and acid rain, and replacing freon and chlorofluorocarbons in its cold-chain equipment with substitute refrigerants. Its next step is developing an eco-friendly car carrier that will reduce its CO<sub>2</sub> emissions by 50 percent.

## NYK Line

NYK Line divides its sustainability efforts among its vessel operations, air and land transportation, port facilities, and offices. In one of its air and marine pollution prevention projects, *NYK Atlas* became the first vessel in the NYK fleet to receive full shoreside power in November 2007 at Yusen Terminals, Port of Los Angeles. The carrier then began an initiative to install shoreside electric power units to enable its entire containership fleet to use alternative power while berthing. Other initiatives include promoting effective fuel utilization, installing double hulls on tankers to prevent fuel leaks and spills, and installing devices to increase combustion efficiency.

## Wallenius Wilhelmsen (WWL)

WWL seeks to improve its environmental performance by reducing emissions from its ocean fleet through strategies such as operating with low-sulfur fuel at sea, and using fuel with less sulfur content for auxiliary engines at berth. As of 2010, WWL has also equipped six vessels with ballast water treatment systems, ahead of pending regulations. The carrier continues to look ahead with the design for its facility of the future: the Castor Green Terminal. Targeted for 2020, the facility integrates terminal, processing, and distribution activities into one site, enabling optimized supply chains while eliminating CO<sub>2</sub> and other harmful emissions from terminal and processing activities.



Castor Green Terminal design | WWL

Biodiesel tank | Port Wilmington, N.C.



## North Carolina Ports

The NC State Ports Authority initiated its Project Energyteam in 2007 to focus on energy efficiency and cleaner, greener operations. The program's multiple areas of concentration include electricity, utilities, fuel usage, emissions, alternative energies, recycling, hybrid technologies, and communications. The program has demonstrated multiple successes, including installing four electric container cranes; using ultra low sulfur diesel fuel; reducing electricity consumption by approximately 80 percent in multiple warehouse facilities; and reducing emissions through equipment modifications and hybrid technologies.

## Port of Tacoma

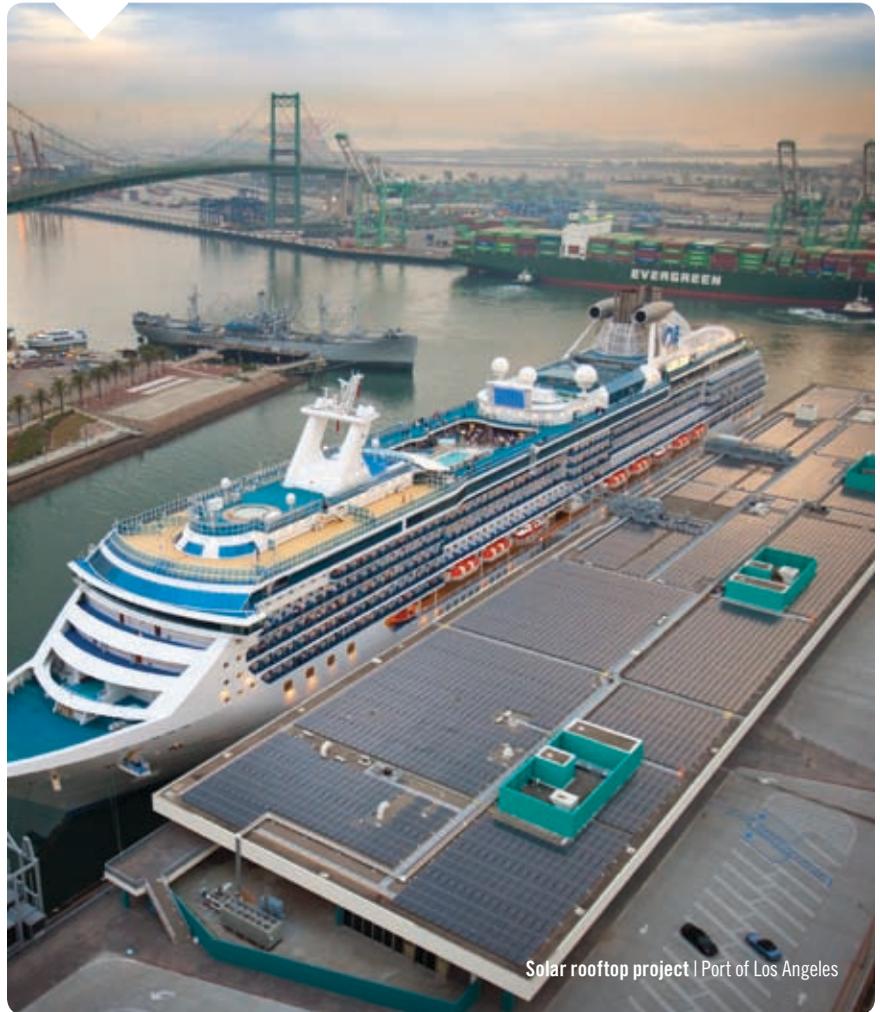
In October 2010, the Port of Tacoma and Totem Ocean Trailer Express (TOTE) flipped the switch on the Pacific Northwest's first cargo ship fueled by shore power. Sparked by a \$1.5-million EPA grant, two TOTE cargo ships now plug into electrical power and shut down diesel engines while docked during weekly calls at their Tacoma terminal. The \$2.7-million shore power project will reduce diesel and greenhouse gas emissions by up to 90 percent during TOTE's 100 ship calls each year in Tacoma.



Industrial rain garden project | Port Tacoma

## Port of Long Beach and Port of Los Angeles

Reaffirming their commitment to slashing air pollution, the ports of Long Beach and Los Angeles approved a new version of the San Pedro Bay Ports Clean Air Action Plan (CAAP). The 2010 CAAP update builds upon the successes of the original, which, since being enacted in 2006, has initiated a range of air pollution-reducing measures for the ships, trains, trucks, and other heavy machinery used to move approximately \$300 billion worth of freight through the port complex each year. Through successful collaboration and substantial investments by the two ports and the industries they serve, air emissions related to port-facilitated goods movement have declined 33 percent to 56 percent since 2005.



Solar rooftop project | Port of Los Angeles

## South Carolina Ports Authority, Port of Charleston

The South Carolina State Ports Authority (SPA) Pledge for Growth initiative continues to bring together various environmental and community programs across land, air, and water at facilities throughout the state. As an example, the SPA is contributing \$3 million to restore 22 acres of tidal marsh along the southern tip of Drum Island near the Port of Charleston, and is evaluating the use of cleaner fuels such as biodiesel and ultra-low sulfur diesel.

## BNSF

In 2010, BNSF customers reduced emissions by more than 23 million tons of CO<sub>2</sub>, which is equivalent to reducing the consumption and resultant emissions of more than two billion gallons of diesel fuel. For the third year in a row, the rail carrier provided its intermodal, automotive, industrial products, and agricultural products customers with customized letters analyzing their total rail carbon footprint and savings compared to movements of those shipments via the highway.



Battery-powered locomotive | Norfolk Southern

## CN

CN's most recent sustainability report highlights efforts that the railroad is making to cut emissions; increase energy efficiency; reduce, reuse, and recycle waste; and encourage environmental stewardship. Specifically, CN is increasing locomotive fuel efficiency through fleet renewal and technological applications, reducing energy consumption and waste at facilities, and exploring alternative energy sources. The railroad is also extending modal shift protocols to new jurisdictions — protocols that allow shippers to get credit for switching shipments to environmentally friendly modes of transportation, such as rail.

## Norfolk Southern

Norfolk Southern has put in place four green priorities for 2011. Chief among them is working toward its five-year goal of reducing emissions 10 percent per revenue ton-mile by 2014 compared with 2009 emissions. Other priorities include improving energy efficiency in company-owned facilities, encouraging employee recycling and other programs that

support the company's sustainability performance, and engaging communities looking for ways to have a positive impact in the areas of conservation, volunteerism, and civic leadership.

## Union Pacific

Union Pacific's *2010 Sustainability and Citizenship Report* highlights a fuel consumption rate reduction goal of one percent annually from 2011 to 2015, as measured on a gross-ton mile basis. Attaining this goal represents a 23-percent fuel-efficiency improvement since 2000. The railroad also reduced its greenhouse gas emissions rate from locomotives by three percent on a gross-ton mile basis compared to 2009. Union Pacific improved fuel efficiency by three percent, saving more than 27 million gallons of diesel fuel compared to 2009.

## CSX

CSX's commitment to continual improvement has allowed the company to boost its fuel efficiency through new technology and conservation efforts. CSX has invested \$2 billion over the past decade to improve its locomotive fuel efficiency and reduce greenhouse gases. These investments comprise locomotive idling reduction technology and real-time energy management technology that uses GPS, track grade, and curvature data. The railroad is also spearheading the National Gateway Project, a freight transportation link between the Mid-Atlantic ports and the Midwest, which is expected to have a major impact on reducing CO<sub>2</sub> emissions and fuel consumption.



Stacked railcars | CSX



UMAX container train | Union Pacific



Solar power installation | A. Duie Pyle

## A. Duie Pyle

The carrier's most recent commitment to environmental sustainability, a megawatt solar installation for its 570,000-square-foot warehousing and distribution facility in Parkesburg, Pa., supplies 100 percent of its electricity needs. Other environmental measures in motion include fuel-efficient equipment and engine idling controls, recycling and waste reduction of motor oil and tires, energy-efficient lighting, and organizational changes that range from the use of sustainable cleaning products to printing and copying practices that default to two-sided printing.

## Celadon

The carrier has made considerable investments to reduce carbon emissions and fuel consumption in its fleet. Among these changes, Celadon installed auxiliary air heaters on all trucks to eliminate the engine's need to idle in cold weather; equipped trucks and trailers with the most fuel-efficient dual tires available on the market; accelerated new truck purchases; and reduced the weight of 2,149 trucks in its fleet by converting them to aluminum wheels.

## ABF

As part of its environmental awareness campaign, ABF initiated several programs including: reducing fuel consumption and enhancing operational efficiency through best practices that include a strictly followed equipment maintenance/replacement program and a limited maximum speed limit of 62 mph; engine idle shutdown programming to prevent unattended idling in yard tractors as well as road and city tractors; and fairing extensions on new equipment to close the air gap between the tractor and trailer, thus improving aerodynamics.

## Challenger

As a measure to improve fuel economy and efficiency, Challenger has invested in a fleet of 600 long combination vehicle (LCV)-equipped trailers. Consisting of two connected 53-foot trailers, LCVs are pulled by a single power unit, thereby doubling the capacity of the load while consuming only 70 percent of the fuel of two separate units. Incorporating super-single tires and wind skirts to maximize fuel consumption further enhances trailer efficiency.

## Bison Transport

Bison Transport continues to reduce the amount of carbon dioxide and nitrogen oxide in its operations by improving environmental performance. Many of the carrier's 1,050-tractor fleet and 3,000 trailers are equipped with fuel-efficient tires, transmissions, and engines; trailer side fairings; auxiliary power units to reduce idling; and in-cab computers to monitor fuel economy. Additionally, Bison is an industry leader in the use of long combination vehicles, which have been shown to reduce greenhouse gas emissions by 40 percent.



Fuel-efficient truck | Celadon

## Con-way Freight

Con-way Freight has developed a Web-based linehaul simulation tool, which it uses to analyze and optimize its freight transportation network. The information helps the trucker reduce transit times and create a more efficient overall network. Annual benefits include: cutting overall daily operating miles by 124,000 (16.6 million); conserving 2.6 million gallons of diesel fuel; reducing 58.6 million pounds in carbon emissions; and reducing particulate emissions by 32 tons.

## C.R. England

C.R. England is testing new technologies to limit deadhead and empty miles, and increase optimization. The carrier is also looking at new equipment to reduce weight, increase aerodynamics, and increase fuel efficiency on both tractors and reefer trailers. Additionally, C.R. England has invested in 53-foot refrigerated intermodal containers that feature lightweight day cabs.

## Knight Transportation

Annually, Knight Transportation has eliminated more than 900 million pounds of CO<sub>2</sub>, four million pounds of nitrous oxide, and 100,000 pounds of particulate matter emissions. On the road, the carrier is currently in the process of outfitting its entire 9,000-trailer fleet with SmartWay-certified aerodynamic trailer blades, which will reduce fuel consumption by more than six percent and substantially improve the carrier's carbon footprint. Off the road, Knight has implemented numerous environmentally friendly initiatives at its facilities, including the installation of a 200,000-watt solar panel system and a cold-water loop air conditioning system, providing clean and efficient energy at its Phoenix headquarters.



Environmentally friendly truck | Knight Transportation



53-foot refrigerated intermodal container | C.R. England



Speed-restricted truck | Schneider National

## Old Dominion

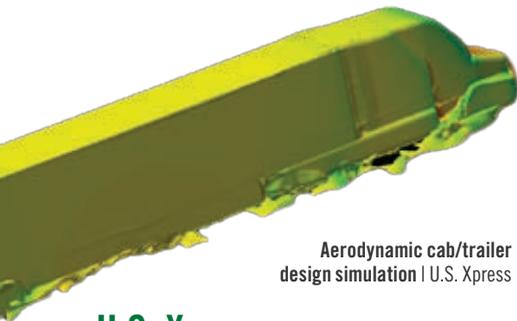
Old Dominion has implemented a number of green measures in all of its 31 fleet shops located in the lower 48 states. These include: drive-through truck washers with custom-built oil-water separators that allow wash water to be recycled; building shops with “tilt-wall” construction that require less maintenance; energy-efficient lighting and HVAC units; roofing material that is solar reflective index 80; and licensed companies that pick up waste oil, filters, and antifreeze for recycling.

## Schneider National

Schneider National has in place a comprehensive approach to improving fuel efficiency, reducing greenhouse gas emissions, and upgrading the energy efficiency of its facilities. Its green initiatives include voluntarily operating the fleet at 60 mph (since 2008); using renewable fuels in trucks (more than one million gallons of blended biodiesel used each year); and equipping trucks to include the most energy-efficient and aerodynamic features available, such as trailer skirting, wheel covers, and tire inflation monitoring systems.

## Swift Transportation

Swift Transportation’s commitment to sustainability is underscored by its Clean Fleet initiative. Utilizing more than 1,000 2009 tractors, its fleet is fully exempt from port dirty truck fees, reducing carbon emissions as well as shipping costs. In addition, Swift is California idle compliant and uses all EPA-certified 2007 or newer trucks and trailers.



Aerodynamic cab/trailer design simulation | U.S. Xpress

## U.S. Xpress

With truck orders of more than 3,100 new units placed this year, U.S. Xpress will operate one of the most fuel-efficient and environmentally friendly fleets in North America. This latest upgrade, representing a capital investment of more than \$200 million, ensures that 100 percent of the U.S. Xpress over-the-road fleet features 2007 or newer EPA-compliant engines. Other green initiatives include fuel-efficient tires, aerodynamic mud flaps, an engine controller-based fuel incentive program, speed limit policies, and GPS technology to improve routing and conserve fuel.



Low-emissions hybrid truck | YRC

## YRC Worldwide

YRC Worldwide has recently engaged three sustainability initiatives as a means of being more efficient and economical. First, the company is shifting to 5W full-synthetic motor oil, which will improve the fuel efficiency of its fleet and reduce motor oil waste. YRC also is adding wind skirts to its 53-foot trailers, which will reduce drag to improve fuel economy. Finally, network engineers are exploring better ways to optimize its network and minimize empty miles while maximizing trailer capacity. Network design will work in tandem with fleet enhancements, driving further emissions reductions.