

A Glance at Clean Freight Shipper Strategies

Endnotes

U.S. Version 2.0.18 (Data Year 2018)

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(Data Year 2018)**

Transportation and Climate Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Idle Reduction for Shippers

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- ¹ *Consumer Reports*, August 2014. <http://www.consumerreports.org/cro/2012/11/average-gas-prices/index.htm>
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Note: Despite the age of the presentation, and changes in diesel engine technology in the interim, the reasons why drivers idle their engines are valid today.
- ³ U.S. Environmental Protection Agency and National Highway Traffic Safety Administration (NHTSA), *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium-and Heavy-Duty Engines and Vehicles; Final Rule*. Sept. 15, 2011. Federal Register, Vol. 76, No. 179, p. 57153
- ⁴ U.S. EPA, Health Assessment Document for Diesel Engine Exhaust. 2002. p. 1 -3 <http://www.epa.gov/ttn/atw/dieselfinal.pdf>
- ⁵ U.S. Government Accountability Office, *Report to the Ranking Member; Subcommittee on Highways and Transit, Committee on Transportation and Infrastructure, House of Representatives*. GAO-11-198, January 2011. <http://www.gao.gov/highlights/d11198high.pdf>
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- ⁷ U.S. GAO, *Report to Ranking Member*; GAO-11-198, January 2011.
- ⁸ An example is on the EPA.gov under Region 2 Air, Motor Vehicles and Diesel-Powered Equipment, "Reducing Diesel Emissions": http://www.epa.gov/region2/air/aq_mobile.html
- ⁹ U.S. EPA, *Technical Bulletin: Nitrogen Oxides (NOx), Why and How They are Controlled*. November 1999. EPA 456/F-99-006R. <http://www.epa.gov/ttn/catc1/dir1/fnoxdoc.pdf>
- ¹⁰ C.S. Sluder, J.M.E. Storey, S.A. Lewis, and L.A. Lewis. *Low Temperature Urea Decomposition and SCR Performance*. Oak Ridge National Laboratory. 2004. http://web.ornl.gov/~webworks/cppr/y2001/rpt/122009.pdf?origin=publication_detail
- ¹¹ California ARB, *Proposed Optional Low NOx Standards for Heavy Duty Engines, Extended Engine Warranties, and Heavy Duty Zero Emission Vehicles Certification*. Public Workshop, March 11, 2013. http://www.arb.ca.gov/msprog/onroad/optionnox/presentations/lownox_ws_031113.pdf
- ¹² *Consumer Reports*, August 2014

Intermodal for Shippers

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- ¹ Adrien Bailey, "Navigating the Intermodal Landscape," Journal of Commerce, Jan. 27, 2014. http://www.joc.com/rail-intermodal/intermodal-shipping/navigating-intermodal-landscape_20140127.html Free subscription required. Bailey's growth estimate of 6.8 percent in 2013 is based on data from the Intermodal Association of North America, Yusen Logistics, and TTX fleet size data.
- ² Adrien Bailey, "Navigating the Intermodal Landscape," JOC. Ibid.
- ³ Anthony B. Hatch, "10 Years After: The Second Intermodal Revolution." January 2014. p. 8. This is a white paper sponsored by the Intermodal Association of North America and the American Association of Railroads. <http://www.intermodal.org/information/research/assets/tenyrsafter.pdf>
- ⁴ United States Geological Survey, National Map, http://www.nationalatlas.gov/articles/transportation/a_freightrr.html
- ⁵ American Association of Railroads, *The Environmental Benefits of Moving Freight By Rail*, April 2014. <https://www.aar.org/BackgroundPapers/Environmental%20Benefits%20of%20Moving%20Freight%20by%20Rail.pdf>
- ⁶ Cristian Facanha and Jeff Ang-Olson, "Policies to Reduce GHG Emissions from Freight Movements," ICF International workshop presentation, slide 15. <https://www.fhwa.dot.gov/policy/otps/innovation/issue1/policies.htm>
- ⁷ James Kruse et. al., *A Modal Comparison of Domestic Freight Transportation Effects on the General Public*. 2007. Prepared by the Texas Transportation Institute for U.S. Maritime Administration and National Waterways Foundation, p. 38.
- ⁸ Ibid.
- ⁹ International Association of North America, *Intermodal Fact Sheet*, <http://www.intermodal.org/information/factsheet.php>
- ¹⁰ James Kruse et. al., *A Modal Comparison of Domestic Freight Transportation Effects on the General Public*. 2007. Prepared by the Texas Transportation Institute for U.S. Maritime Administration and National Waterways Foundation, p. 38. <http://d2dtl5nnlpfor.cloudfront.net/tti.tamu.edu/documents/TTI-2012-5.pdf>
- ¹¹ Baxter International, "Sustainability Report, Product Transport," 2013. <http://sustainability.baxter.com/product-responsibility/product-transport.html#intermodal-transport>
- ¹² U.S. Environmental Protection Agency presentation to the National Retail Federation, June 18, 2014. Slide 32. <http://www.epa.gov/otaq/smartway/about/documents/webinars/SW-nrf-06-18-14-webinar.pdf>
- ¹³ Jason Mathers, Elena Craft, Marcelo Norsworthy, and Christina Wolfe, *The Green Freight Handbook*. The Environmental Defense Fund. <http://business.edf.org/projects/green-freight-handbook/>
- ¹⁴ Ibid.
- ¹⁵ A Craig, et. al. Estimating the CO₂ Intensity of Intermodal Freight Transportation, Massachusetts Institute of Technology, August 2012. p. 4 <https://esd.mit.edu/WPS/2012/esd-wp-2012-24.pdf> Note: This paper states that while modal shift from road to rail is one of a number of proposed strategies for reducing emissions, and intermodal transport offers shippers an attractive alternative to truckload service, little data is available to shippers to calculate the potential savings.
- ¹⁶ U.S. Environmental Protection Agency, SmartWay Transport Partnership: Driving Data Integrity in Transportation Supply Chains, <http://www.epa.gov/smartway/forpartners/documents/dataquality/420b13005.pdf>

Load Optimization for Shippers

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- ¹ A TMS is business management software that enables companies to manage transportation operations, including carrier procurement and route optimization. Common TMS suppliers include TMW Systems, McLeod Software, and Precision. These companies are mentioned for illustration only and it does not constitute an endorsement. TMS software can reduce fuel costs between five and 15 percent.
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http://www.topseng.com/MaxLoad_Case_Study.html
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http://www.capgemini.com/resources/future_supply_chain_2016
- ³ Commonwealth Supply Chain Advisors, *Implementing Best Practices in Supply Chain Management*, July 2011, p. 3.
<http://www.commonwealth-sca.com/wp-content/uploads/2013/06/Transportation-Best-Practices-Report-Web.pdf>
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<http://www.joc.com/logistics-economy/seeking-space-creating-capacity>
- ⁵ Jason Mathers, Elena Craft, Marcelo Norsworthy, and Christina Wolfe, *The Green Freight Handbook*. The Environmental Defense Fund.
<http://business.edf.org/projects/green-freight-handbook/>
- ⁶ Ibid.
- ⁷ Ibid.

Packaging Reduction for Shippers

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<http://www.packagingdigest.com/sustainable-packaging/reduce-gains-cost-concerns-rise>
- ³ Product stewardship is a policy that ensures that all those involved in the lifecycle of a product share responsibility for reducing its health and environmental impacts, with producers bearing primary financial responsibility.
<http://www.epa.gov/osw/conservation/tools/stewardship/products/packaging.htm>
- ⁴ Justin Lehrer, "Use Reusables: Fundamentals of Reusable Transport Packaging," Reusable Packaging Association. 2012.
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- ⁵ U.S. Packaging and Wrapping, LLC, Consumer Packaging No-No's, March 31, 2014.
<http://www.uspackagingandwrapping.com/blog/Consumer-Packaging-No-No-s.html>
- ⁶ Fetzer Vineyards, "Fetzer Vineyards Converts to Lightweight Glass" 2009.
<http://fetzer.com/assets/client/File/Fetzer-Lightweight-Bottle-fact-sheet-final.pdf>
- ⁷ Ibid.
- ⁸ Gunilla Jönson et al., "Packaging Logistics and Retailer Profitability: An IKEA case study," Lund University, 2005. p. 5.
<http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=541306&fileId=626088>
- ⁹ Claudia Girrbach, Cisco, "EnergyWise Return on Investment with Cisco Unified IP Phones Solution Overview." 2010.
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Route & Network Optimization for Shippers

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<http://www.roadnet.com/pub/case-studies/Associated-Food-Stores-Stays-Competitive-by-Reducing-Costs-to-Retailers/>
- ² Calculation based on this online carbon emissions calculator:
<http://www.roadnet.com/pages/products/carbon-emissions/index.aspx> which is based on U.S. DOE, March 2008 assumptions
- ³ ERP and TMS are business management software that enable companies to integrate operational processes. Processes including manufacturing, distribution, sales, and marketing are shared to enable the smooth flow of data across all operations. Common ERP systems include Oracle, SAP, and Microsoft; common TMS suppliers include TMW Systems, McLeod Software, and Precision. These companies are mentioned for illustration only and do not constitute an endorsement.
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- ⁷ Jason Mathers, Elena Craft, Marcelo Norsworthy, and Christina Wolfe, *The Green Freight Handbook*. The Environmental Defense Fund <http://business.edf.org/projects/green-freight-handbook/>
- ⁸ Ibid.



For more information:

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