



WESTPORT FUEL SYSTEMS INC.

2016 SUSTAINABILITY REPORT

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Sustainability Report

Driving Innovation to Power a Cleaner Tomorrow

Compared to other primary energy use sectors including electricity, industry, and buildings, transportation is the most difficult to decarbonize because of the challenge of economically replacing the energy density of fossil fuels. The current global transportation energy mix is still dominated by petroleum derived fuels like gasoline and diesel (approximately 90%) but we are witnessing the emergence of a more diversified or poly-fuel mix as natural gas, liquid biofuels, electric vehicles, and hydrogen fuel cells are gaining market share through an ability to compete on price, range, and performance.¹

Canada and other G20 economies have ratified the Paris Agreement in November 2016 committing to deep decarbonization targets to limit average temperature rise to less than 2°C, and are working on plans to limit temperature rise to 1.5°C. We simply need to accelerate the deployment of clean-technology and low carbon transportation solutions and increase the rate of market penetration.

The extent to which the transport sector is able to make progress on the ambitious 80%-by-2050 emission reduction targets incorporated within the Paris Agreement and diversify beyond oil, will be a function of ongoing technology breakthroughs on both fuels and vehicles, political action, shifting demographics, and a range of new public policy considerations that will not only influence how people and freight are moved, but how and where we live.

Our 2016 Sustainability Report highlights the new Westport Fuel Systems updates, progress, and challenges in reaching our vision of a sustainable transportation future. We continue to strive to create leading edge technologies that meet or exceed the requirements of legislation and industry codes and standards to shift the transportation sector to gaseous fuels. Working in conjunction with our partners, we are committed to delivering low-emission gaseous fuel solutions that will meet the demand for high-efficiency, high-performance, and low-carbon transportation.

A Catalyst For Innovation

The heightened focus on the environmental performance of the transportation sector with more stringent requirements for increased engine efficiency, improved urban air quality, and greenhouse gas ("GHG") emission reductions has put pressure on engine and vehicle manufacturers, but also introduced an opportunity for collaboration and innovation.

New Engine Efficiency Standards

The United States Environmental Protection Agency ("EPA") and the National Highway Traffic Safety Administration ("NHTSA") jointly released the Phase 2 GHG emissions and fuel efficiency standards for medium- and heavy-duty vehicles in August 2016. These rules are the product of nearly two years of extensive consultation with industry partners and set a high standard for the freight sector.

Freight transport by road is a vital part of the North American economy but also a major source of GHG emissions. The new EPA/NHTSA rules for GHG emissions and fuel efficiency from medium- and heavy-duty trucks will create a new competitive dynamic in the trucking industry. Westport Fuel Systems is well-positioned to deliver best-in-class engines and vehicles that meet increasingly stringent regulatory frameworks.

Next generation natural gas engines and vehicles including Westport High Pressure Direct Injection 2.0 (Westport™ HPDI 2.0) and Enhanced Spark Ignition ("Westport™ ESI") technologies comply with the new rule and offer significant GHG emission reduction benefits through the combination of low-carbon fuels and high-efficiency engines. In particular, Westport™ HPDI 2.0 has been proven to deliver diesel-like performance and fuel efficiency while providing a reduction in GHG emissions of 18-20% compared to current diesel engines.

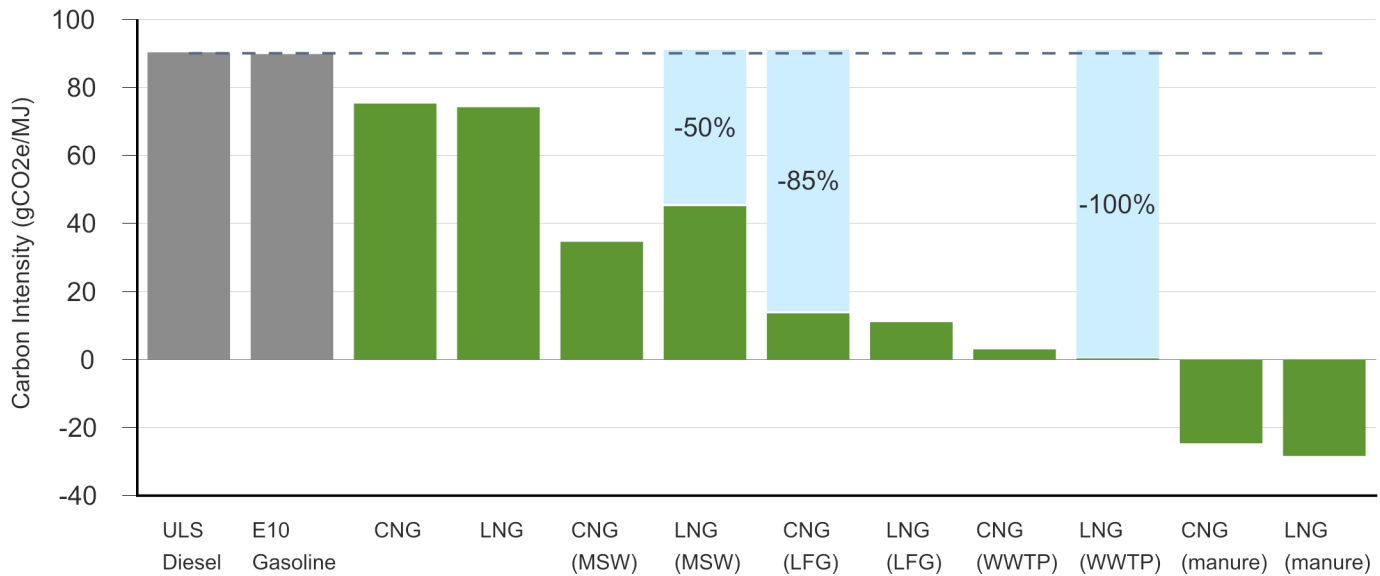
Improved Urban Air Quality

The California Air Resources Board ("CARB") adopted *optional* low oxides of nitrogen ("NOx") emission standards for on-road heavy-duty engines in 2013. For California to meet its 2023 and 2023 ambient ozone air quality standards, CARB estimates that it will require a 90% reduction in NOx emissions below 2010 baseline levels measured in the South Coast air basin.²

The Cummins Westport ISL G Near Zero became the first mid-range engine in North America to receive emissions certifications from both the U.S. EPA and CARB that meet the 0.02 g/bhp-hr optional Near Zero NOx Emissions standards for medium-duty truck, urban bus, school bus, and refuse applications. Methane emissions have also been cut dramatically through the combined use of closed crankcase ventilation and revised catalyst formulations.

According to CARB, when fueled by renewable natural gas ("RNG"), a transit bus using the ISL G NZ has total emissions equivalent to a battery electric bus powered by electricity generated in a clean natural gas fueled power plant.³

Well-to-Wheels Carbon Intensity of Fuels: Petroleum, Natural Gas and Renewable Natural Gas



This chart shows the fuel carbon intensity on a per unit energy basis. For example, for 1 MJ of energy of CNG made from landfill gas and used in an engine, the total amount of CO₂ WTW that results is about 85% lower than using 1 MJ of diesel. This chart addresses only the fuel, and as such does not take into account engine tailpipe emissions of methane, or any differences in engine efficiency.

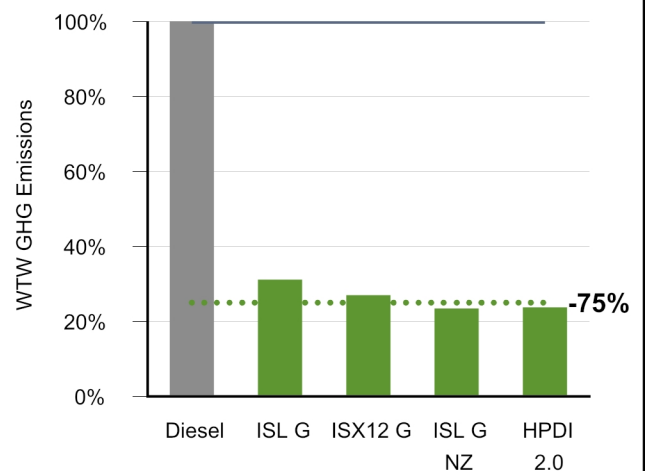
The Potential Of RNG

Transportation grade natural gas is increasingly being produced from non-fossil sources, in the form of renewable natural gas or biomethane. Feedstocks for RNG include landfill gas ("LFG"), municipal solid waste ("MSW"), waste water treatment plants ("WWTP"), or agricultural manure. Substantial carbon intensity reductions can be achieved by turning these waste products into transportation fuel, thereby eliminating direct emissions of carbon dioxide ("CO₂") and methane that occur naturally and without any end-use benefit.

When vehicle efficiency and tailpipe emissions are accounted for, RNG (in this case from landfill gas) can reduce the greenhouse gas emissions of natural gas heavy duty trucks by approximately 75% compared to the level produced from equivalent diesel trucks.⁴

There is an urgent need for sustainable, low-carbon solutions for the transportation and energy sectors. Because natural gas vehicles can operate with 100 percent renewable natural gas or any percentage of blended renewable and conventional gas, they are a promising technology for freight transportation now and into the future as renewable fuels are expected to represent a greater market share of fuel consumed.

HD Trucking: GHG Reductions Using RNG from Landfill Gas



Landfill Gas fuel carbon intensity from GREET (greet.es.anl.gov) life-cycle emissions model maintained by Argonne National Labs.

Key Collaborations In 2016

Industry leadership begins with outreach and dialogue and we have contributed to many technical working groups, committees, and advisory panels to learn, share our expertise, and help build a body of knowledge about natural gas vehicles, their benefits, and challenges with deployment.

While the economic value proposition remains the primary driver of natural gas for transportation, policy makers, OEM partners and industry stakeholders are looking to the other compelling energy, environmental, and sustainability benefits. It is critical for Westport Fuel Systems to contribute sound, intelligent, data driven, and defensible analysis to a discussion on sustainable mobility and the transition to alternative fuels.

Business For Social Responsibility

FUTURE OF FUELS WWW.BSR.ORG

Westport Fuel Systems has been a member of Business for Social Responsibility (“BSR”) since 2012 and was a founding member of the Future of Fuels working group. The mission of Future of Fuels is to identify and promote transportation fuel pathways that enhance the sustainability and availability of emerging alternative fuel choices. The working group’s objectives are to develop tools and research to map, measure, and manage a sustainable transition to low-carbon commercial freight, convene value chain stakeholders to identify and address the greatest challenges to the deployment of sustainable fuels, and build partnerships that catalyze and test low-carbon commercial freight solutions.

In 2016, Future of Fuels launched its Fuel Tool developed by technical experts and member companies including PepsiCo, Shell, Suncor, Coca-Cola, UPS, Volvo, Walmart, and Westport Fuel Systems. It is an interactive tool able to provide data for fleet owners to measure the average climate emissions for different fuels and technology, to understand the range of related environmental impacts, and enable them to implement practices to achieve desired sustainability results from their fleet and suppliers.

Environmental Defense Fund

PUMP TO WHEELS METHANE LEAKAGE STUDY

The Environmental Defense Fund (“EDF”) has a history of cross-sector collaboration and balanced environmental analysis. In 2012, the EDF initiated a series of studies with academic and industry partners to better understand the source and quantity of methane emissions along the natural gas supply chain. Westport Fuel Systems was a core supporting member of a multi-partner study

initiated by EDF and conducted by the Center for Alternative Fuels, Engines and Emission (“CAFE”) at West Virginia University.

The study was published in 2016 in the journal Environmental Science & Technology and offers a critical baseline by which ongoing product and technology enhancements can be measured, as it represents the first significant effort to quantify actual in-use methane emissions from natural gas filling stations and heavy-duty vehicles. The natural gas vehicle industry has already implemented technology solutions to dramatically minimize, or in some cases, eliminate the largest sources of methane emissions from vehicle tailpipe, crankcase ventilation, and dynamic venting that were identified in the study.

Our Approach And Scope

This is our eighth published sustainability report, documenting our strategy, programs and achievements related to the environment, the safety of people and products, our employees, and our community.

The scope of this report relates only to our operations in British Columbia, Canada. We recognize the limitation of this narrow scope given the global reach of the new Westport Fuel Systems. As much of 2016 was spent in post-merger integration activities and product portfolio rationalization, we have identified a need to extend the scope of our sustainability report to encompass all of our global operations and are working to establish processes to achieve this goal. While the majority of our engine testing and development occurs in Vancouver, we recognize that we must tell a more complete story about our activities, success and challenges. This report discloses data from January to December 2016. Historical data from the past four fiscal years have been included for comparative purposes, where appropriate.

Report Content

This report has been developed in accordance with the Global Reporting Initiative (“GRI”) G3 standard reporting guidelines. The GRI is an independent institution that provides a standard framework for sustainability reporting across companies and industries. We have applied the principles of materiality and stakeholder inclusiveness as recommended by the GRI to assess the relevance of sustainability priorities to Westport Fuel Systems and our stakeholders.

Westport has self-declared this report to correspond to application level B in the six-level grid of the GRI G3 guidelines. Application Level B requires us to disclose our performance on at least twenty core economic, social and environmental indicators.

GRI INDICATOR INDEX

LEGEND	
AA1	(we report on this indicator)
BB2	(we partially report on this indicator)
ECONOMIC PERFORMANCE	
EC1	Direct economic value generated and distributed ▪ (2016 Audited Financial Statements)
EC2	Financial implications and risks and opportunities of climate change ▪ (Climate Change Risks and Opportunities)
SOCIAL PERFORMANCE	
HR3	Employee training on human rights ▪ (Human Rights)
LA1	Total workforce by employment type, employment contract, and region ▪ (Employee)
LA3	Benefits provided to full-time, part-time and temporary employees ▪ (Employee)
LA6	Workforce represented in Occupational Health and Safety Committees ▪ (Health and Safety)
LA7	Rates of injury, occupational disease, lost days, and work-related fatalities ▪ (Health and Safety)
SO1	Nature, scope and effectiveness of programs to manage impact on communities ▪ (Community Impacts)
SO2	Percentage and total number of business units analyzed for risks related to corruption ▪ (Anti-Corruption Efforts)
SO3	Percentage of employees trained on anti-corruption policies and procedures ▪ (Anti-Corruption Efforts)
PR1	Life cycle stages: health and safety impacts of products-assessed for improvements ▪ (Product Responsibility)
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products ▪ (Health and Safety)
ENVIRONMENTAL PERFORMANCE	
EN3	Direct energy consumption by primary energy source ▪ (Energy)
EN4	Indirect energy consumption by primary source ▪ (Energy)
EN5	Energy saved due to conservation and efficiency efforts ▪ (Energy)
EN6	Initiatives to provide energy-efficient or renewable based products and reductions ▪ (Energy)
EN7	Initiatives to reduce indirect energy consumption and reductions achieved ▪ (Energy)
EN8	Total water withdrawal by source ▪ (Water)
EN16	Total direct and indirect greenhouse gas emissions ▪ (Greenhouse Gas Emissions)
EN18	Initiatives to reduce GHG emissions and reductions achieved ▪ (Greenhouse Gas Emissions)
EN22	Total amount of waste by type and disposal method ▪ (Waste Generation and Diversion)
EN23	Total number and volume of significant spills ▪ (Waste Generation and Diversion)
EN28	Value of fines and non-monetary sanctions for environmental non-compliance ▪ (Environmental Compliance)

Determining Material Issues

The intent of the new GRI G4 materiality review process is to ensure that content included in our annual sustainability report represents the key environmental, economic, and social issues that are most critical to our stakeholders.

In 2016 we undertook an extensive internal risk management exercise which will guide and supplement our process for determining materiality in accordance with the framework of the new G4 reporting guidelines. We reviewed our existing mechanisms for gathering stakeholder feedback and sought additional input where possible to organize our findings using the prioritization matrix system recommended by GRI.

Social Performance Indicators

HUMAN RIGHTS

Westport Fuel Systems is dedicated to preserving all fundamental and universally recognized human rights as outlined by the United Nations and the International Labour Organization. Our commitment is stated and reinforced by our Code of Conduct which is reviewed and signed annually by each of our employees.

TOTAL WORKFORCE

Westport Fuel Systems is committed to providing a healthy work environment, defined by respectful relationships, professional development and advancement potential and an execution-focused culture to capitalize on business opportunities. We are dedicated to ensuring that Westport Fuel Systems remains an employer of choice in all our locations. A similar benefits package is offered to both full-time and part-time employees.⁵

HEALTH AND SAFETY

The health and safety of our employees, facilities, and communities is an integral part of Westport Fuel Systems operations. When gauging world-class safety performance, recordable injury rates and lost-time injury rates are statistical, comparative industry measures. Our results are indicative of our ongoing and significant commitment to injury prevention, risk mitigation, regulatory compliance, and continuous safety improvement.

Our Health and Safety Committee members are champions for workplace safety. Westport Fuel Systems maintains a Health and Safety Committee in British Columbia or approximately one Committee for every 300 employees. Our Committee is made up of cross-functional management and employee representatives who advise and recommend action on any unresolved workplace health and safety issues brought to them.

SAFETY INCIDENTS					
as of Dec. 31	2016	2015	2014	2013	2012
Recordable injury frequency	0	1	3	5	2
Recordable injury rate ⁶	0.00	0.33	0.96	1.22	0.46
Lost time injury frequency	0	1	1	2	1
Lost time injury rate ⁷	0.00	0.33	0.32	0.49	0.23

Our Vancouver-based employees achieved a significant safety milestone as we did not record any recordable injuries or lost time injuries in 2016. We continue to put the health and safety of our employees at the center of our operational priorities.

Community Impacts

The importance of being a good neighbour is captured within our Environmental Policy statement. Westport Fuel Systems geographic location, with our technical facilities adjacent to homes, schools, and other businesses requires us to monitor and manage the potentially adverse impacts our operations might have on our immediate neighbors. Our Facilities Engineering Group maintains a preventative maintenance schedule for key equipment to minimize the likelihood of environment releases and noise levels in excess of municipal by-laws. Westport Fuel Systems responds to community concerns regarding our facilities, infrastructure, noise levels and environmental impacts in a timely manner. We did not receive any external complaints in 2016.

Anti-Corruption Efforts

Our expectations for individual integrity and ethical, moral and legal conduct are outlined in our Code of Conduct. The Code of Conduct has mandated compliance with all applicable laws in the jurisdictions where we operate and has always prohibited the giving or receiving of improper payments to influence business decisions. In addition, Westport Fuel Systems maintains a confidential ethics hotline to provide an avenue for employees to raise concerns about corporate conduct. The policy includes the reassurance that they will be protected from reprisals or victimization for “whistle blowing” in good faith.

Product Responsibility

Quality and safety are imperatives across the product life cycle. Our Quality Management System (“QMS”) is certified to ISO 9001:2008 standards for the design, assembly and commercialization of its LNG fuel systems. Westport Fuel Systems QMS comprises the organization’s policies and procedures that aim to ensure that customer requirements are met with consistency, resulting in enhanced customer confidence and satisfaction. The QMS, other internal requirements and engineering systems have contributed to no incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of our products.

Internal systems and processes have been established to ensure that the health and safety impacts of our products are assessed in each of the following life-cycle stages:

HEALTH AND SAFETY IMPACTS ASSESSED AT LIFE-CYCLE STAGE	
	Status
Development of product concept	YES
Research and development	YES
Certification	YES
Manufacturing and production	YES
Marketing and promotion	YES
Storage, distribution, and supply	YES
Use and service	YES
Disposal, reuse or recycling	PARTIAL

Community Engagement

Being active in the community has always been central to Westport Fuel Systems values. Since 2002, Westport Fuel Systems has been a strong supporter of the United Way of the Lower Mainland. From modest beginnings, our annual workplace campaign has grown steadily and in 2016 our cumulative fundraising total reached \$1.34 million CDN.

UNITED WAY OF THE LOWER MAINLAND COMMUNITY SCHOOLS

Westport Fuel Systems is a proud partner of the United Way and Vancouver School Board’s Community Schools Program. Community schools provide safe and structured after-school activities to students aged 6-12. After-school programs play a critical role in providing structured, supervised time for children to be active, to develop positive social skills, and to build overall capabilities. Studies have linked participation in these programs with greater academic success, increased self-confidence and self-esteem, and better relationships with peers and adults.

Through this partnership, Westport Fuel Systems employees lead classes over seven weeks in cooking, acrobatics, guitar, electronics, and visual arts at Lloyd George Elementary School.

CANADIAN BLOOD SERVICES

Westport Fuel Systems has been a member of the Canadian Blood Services’ *Partners for Life Program* since 2001. This nationwide program is designed to encourage group donations from business and community organizations. Each year, we set a target, coordinate group donations and allow employees to take time from work to donate.

Environmental Performance Indicators

ENVIRONMENTAL COMPLIANCE

Compliance with applicable federal, provincial, and municipal regulations is a baseline environmental performance standard and we believe that leading organizations must go beyond minimum environmental requirements. Since its inception in 1996, Westport Fuel Systems has not received any fines or non-monetary sanctions for environmental non-compliance.

WATER

It is expected that climate change will impact global water resources. Water use is an increasingly critical component of each organization's sustainability performance. Despite this, only the largest industries in British Columbia have water meters with data logging capability and the city of Vancouver does not currently provide meters to light industrial or commercial customers such as Westport Fuel Systems.

Our calculations indicate that Westport Fuel Systems facilities cumulatively have an average daily rate of water use of approximately 13.5 m³ per day. Engine and fuel system component testing activities use process water that flows in a closed-loop thereby minimizing total water withdrawals. Water conserving domestic appliances and fixtures have been installed at all locations in an effort to further reduce our impact. We recognize that providing only an estimate and not actual water use is a limitation of our current sustainability report.

ENERGY CONSUMPTION

Our energy consumption in 2016 was comparable to 2015. This is due in part to product development cycles but also to our ability to test components on systems capable of recycling fuel, and a greater focus on energy efficiency improvements. The bulk of our LNG test rigs continue to operate on liquid nitrogen and we continue to return power to the grid through the use of transient dynamometers in our test cells.

ENERGY CONSUMPTION

	for the 12 months ending Dec. 31				
(values in gigajoules)	2016	2015	2014	2013	2012
DIRECT					
Diesel	414	749	2,000	2,722	2,250
LPG	0	0	0	0	35
LNG	5,714	5,436	21,730	8,559	8,466
CNG	18,991	18,887	35,449	38,148	28,802
NG returned	(500)	(4,351)	(13,937)	(1,024)	(1,860)
Net direct consumption	24,619	20,721	45,242	48,405	37,693
INDIRECT					
Electrical	10,065	12,576	16,249	14,956	12,239

GREENHOUSE GAS EMISSIONS

The Greenhouse Gas Protocol developed by the World Business Council on Sustainable Development ("WBCSD") is the globally accepted standard for greenhouse gas emissions accounting. The organizational boundary of this inventory includes all of Westport Fuel Systems British Columbia-based facilities and includes both scope one and scope two emissions. We have not measured scope three emissions to date.

GREENHOUSE GAS INVENTORY⁸ (unaudited)

	for the 12 months ended Dec. 31				
(values in tonnes CO ₂ equivalent)	2016	2015	2014	2013	2012
Total Scope 1					
Direct Emissions	1,442.8	1,272.8	2,389.7	2,576.1	2,224.2
Total Scope 2					
Indirect Emissions	251.0	303.0	413.0	387.0	288.0
Total GHG impact	1,693.8	1,575.8	2,802.7	2,963.1	2,512.2

Finding comparable organizations against which to benchmark our GHG emissions remains a challenge, as the research and development of new engine technologies is necessarily an energy-intensive process. There are currently no regulatory requirements for a company of our size to disclose its emissions.⁹ The process of compiling a GHG inventory provides an important foundation for understanding reduction opportunities and measuring progress. Westport Fuel Systems works through the internationally-recognized Carbon Disclosure Project to inventory and make public our GHG emissions. We have identified future opportunities to reduce the impacts of our operations, as well as opportunities to integrate climate change risk into our risk management procedures and overall business strategy.

WASTE GENERATION & DIVERSION

Waste reduction, reuse and recycling programs are well established and well-maintained. Using formulas based on bin size and frequency of collection, Westport Fuel Systems generates approximately 200 tonnes of waste annually. Reducing the amount of waste sent to landfill remains a priority and we have launched employee education and awareness efforts to communicate the importance of minimizing the amount of waste generated.

TYPES OF HAZARDOUS AND SOLID WASTE RECYCLED

Absorbent pads & materials	Aluminum	Batteries	Beverage containers
Cardboard	Coolant	Diesel	E-waste
Filters/rags	Light bulbs	Lube oil	Organics & kitchen waste
Paper	Hard & soft plastic	Plastic oil pails	Solvents
Steel	Viscor	Wastewater	Wood

We extend the opportunity for employees to recycle electronics, batteries, confidential paper, and some hazardous waste like paint through our waste minimization program. Our Facilities Engineering Group tracks the amount of waste recycled via our hazardous waste program, scrap materials collection and office waste initiatives.

Footnotes

1. http://www.bsr.org/reports/BSR_Future_of_Fuels_Understanding_Impacts_of_Fuels.pdf
2. <https://www.arb.ca.gov/msprog/hdlownox/hdlownox.htm>
3. http://www.gladstein.org/pdfs/On-Road_Pathways.pdf and <https://www.forbes.com/sites/trucksdotcom/2016/04/11/natural-gas-engine-cummins-on-way/#1ff0f9e5d8ba>
4. The graphs shown here are illustrative, based on the assumptions within GREET, the lifecycle emissions model maintained by Argonne National Labs. However, the carbon intensity of renewable natural gas can be highly variable based on the type of feedstock, the geography, energy consumption to produce the biomethane, and the outcome for the feedstock if not used to make RNG.
5. Part-time employees must work at least three days per week to be eligible for the same benefits package as full-time employees. Casual employees or contractors are not eligible for benefits.
6. The recordable injury incident rate is the annualized rate of occupational injuries and illness per 100 employees. It is a calculation of the number of injuries x 200,000/employee hours worked. First aid classified injuries are not included.
7. The lost time injury rate is a calculation of the total number of lost time injuries x 200,000/employee hours worked. Lost days refer to scheduled work days and the count begins on the next scheduled work day immediately after the injury.
8. The GHG Protocol methodology used at this time only includes emissions associated with fuel consumption and not energy and emissions associated with fuel production, distribution and transport.
9. In Canada, Large Final Emitters (“**LFEs**”)—facilities that emit the equivalent of 100,000 tonnes or more of carbon dioxide (CO₂) equivalents per year—are required to disclose their emissions.