



## FREIGHT RAIL & THE ENVIRONMENT

### **FREIGHT RAIL: ENVIRONMENTAL CREDENTIALS**

Freight rail is the most environmentally sound way to move goods over land. This is achieved through the use of cleaner and greener technologies and more efficient operating practices.

**Reducing Greenhouse Gas Emissions** — Trains, on average, are four times more fuel-efficient than trucks. That means that moving freight by rail instead of trucks reduces greenhouse gas emissions by an average of 75 percent. If just 10 percent of long-distance freight moved by truck traveled by rail instead, greenhouse gas emissions would fall by approximately 11 million tons.

**Improving Fuel Efficiency** — Railroads move, on average, one ton of goods 473 miles on a single gallon of fuel.

**Reducing Highway Gridlock**— A single freight train can take the load of several hundred trucks off the nation's overcrowded highways. Moving freight by rail also reduces the pressure to build costly new roads and helps cut the cost of maintaining existing ones.

### **FREIGHT RAIL: INNOVATIONS HELP THE ENVIRONMENT**

Railroads bring new technological innovations to market, make new investments in equipment, and improve operations. The result: rail freight volume is nearly double what it was in 1980, while railroads' fuel consumption remains relatively flat.

**Hauling Greater Loads** — Thanks to improved freight car design and other factors, the average freight train carries almost 3,500 tons of freight today, up from 2,222 tons in 1980, 2,755 tons in 1990, and 2,923 tons in 2000.

**New, Efficient Locomotives** — Freight railroads have purchased thousands of new, more efficient locomotives, including many "Gensets" that have several independent engines that turn on and off depending on how much power is needed to perform a particular task. In addition, many older, less fuel efficient locomotives have been retired from service.

**New Technologies and Products** — Freight railroads have installed new idling reduction technologies, such as stop-start systems that shut down a locomotive when it is not in use and restart it when needed. Plus, improved rail lubrication reduces friction in the wheel-rail interface, saving fuel and reducing wear and tear on track and locomotives.

**Advanced Software** — New, highly advanced computer software systems can calculate the most fuel-efficient speed for a train over a given route, determine the most efficient spacing and timing of trains on a railroad's system, and monitor locomotive functions and performance to ensure peak efficiency.

### **RAILROADS: PARTNERING & COMMUNITY STEWARDSHIP**

Railroads in Oregon participate in the SmartWay<sup>SM</sup> Transport Partnership, a voluntary collaboration between the U.S. EPA and the freight industry to increase energy efficiency while reducing greenhouse gases and air pollution. SmartWay Transport Partners lead the way toward cleaner, more efficient transportation by adopting fuel-saving strategies.

Railroads contribute to more than just the economic health for their communities; they also help enhance the quality of life. At local freight rail facilities, railroads help preserve the environment by improving resource management and conservation efforts through recycling and waste management programs. Railroads also offer employee training and incentive programs to help locomotive engineers develop and implement best practices and improve awareness of fuel-efficient operations and to encourage all employees make environmentally friendly choices everyday on the job and at home.

## FACTS:

- According to the EPA, trains emit an average of **75% less greenhouse gas emissions than trucks.**
- In 2013, U.S. freight railroads moved a ton of freight an average of **473 miles per gallon of fuel** — up from 235 miles in 1980. **That's a 101 percent improvement.**
- In 2013 alone, U.S. freight railroads consumed **3.7 billion fewer gallons of fuel** and emitted **41.5 million fewer tons of carbon dioxide** than they would have if their fuel efficiency had remained constant since 1980. From 1980 through 2013, U.S. freight railroads consumed 69.8 billion fewer gallons of fuel and emitted 781 million fewer tons of carbon dioxide than they would have if their fuel efficiency had not improved.
- Freight railroads can move one ton of freight 471 miles on a single gallon of diesel fuel, generating a **carbon footprint that is 75 percent less** than trucks.
- New Genset switchers **reduce emissions of oxides of nitrogen by 80 percent and particulate matter by 90 percent.** It also uses up to **37 percent less fuel** compared to older switching locomotives. This fuel savings translates into a **greenhouse gas reduction of up to 37 percent.**
- Shifting freight from trucks to rail also **reduces highway wear and tear and the pressure to build costly new highways.**
- **Union Pacific Railroad:** Since 2000, UP has achieved a 17% improvement in fuel efficiency and has spent approximately \$6.5 billion to purchase 3,870 new cleaner locomotives. Nearly 93% of UP's 8,400 locomotives are certified under EPA emission standards. More than 73% of our locomotive fleet is equipped with equipment that significantly reduces idle time saving 15-24 gallons of fuel per locomotive, per day.
- **BNSF Railroad:** BNSF's fuel efficiency has increased by 7.7 percent since 1999. Over the last decade, BNSF has acquired more than 2,700 new locomotives while retiring many older units. Our newest locomotives are about 15 percent more fuel efficient than the engines they replaced. We've also been testing low-emissions liquefied natural gas switch locomotives - one of the cleanest-burning locomotive technologies in existence.
- **Short Lines:** Genesee & Wyoming, the parent company of Portland & Western Railroad and the largest short line in Oregon, is proud to be one of the first short line railroad participants in the US EPA SmartWay Transportation Partnership, a voluntary collaboration between the US Environmental Protection Agency and the freight transportation industry designed to increase energy efficiency while significantly reducing greenhouse gas emissions. G&W received a top SmartWay Performance Score for outstanding environmental performance.

Sources: [www.AAR.org](http://www.AAR.org), [www.UP.com](http://www.UP.com), [www.GWRR.com](http://www.GWRR.com)