PRIORITIES FOR INCREASING FUEL ECONOMY

SMALL THINGS CAN MAKE A BIG DIFFERENCE.

shell.us/transport
FOREWORD
A message from John Walters, Shell Lubricants
Global Sector Manager for Fleet

When energy use is reviewed at a national or international level we realize that about 35% of the western world’s total energy and carbon dioxide (CO2) footprint is linked to transport and a large fraction of that with freight movement.

Collectively, cars and trucks account for nearly one-fifth of all U.S. emissions, emitting around 24 pounds of CO2 and other global-warming gases for every gallon of gas1.

So, if we are to reduce energy usage and abate CO2 emissions and deliver cost savings, it is essential that a lot of attention is paid to commercial transport.

Priorities for Increasing Fuel Economy explores these challenges and provides the essential information you need to help you achieve competitive advantage across your commercial fleet operations.

1. Union of Concerned Scientists www.ucsusa.org/clean-vehicles/carermissions-and-global-warming#Wgj5EW0M2x
Commercial transport is critical for the global economy, keeping goods and trade flowing. In the U.S. alone, trucks haul 70% of all freight. But it comes at a cost. It’s estimated that the sector accounts for over 25% of all fuel consumed globally. And in tandem with fuel use, managing CO2 emissions is a global industry and societal concern. To avoid the worst effects of climate change the world must halve carbon dioxide emissions by 2050.

Since 2000, emissions attributable to road freight vehicles have risen by almost 3% per year, with well over half of this increase coming from heavy-duty trucks.

For fleet owners and operators, fuel is the second highest cost, on average, as much as 38% of total fleet operating costs. So, taking steps to reducing fuel consumption of trucks by improving fuel economy is not only good for the bottom line, but also a contributor to tackling emissions. Shell estimates that an improvement in fuel economy of just 1% for Class 8 trucks would save about one-million gallons of fuel per day* in the U.S. alone.

Of course, technological advancements will play an important role in improving fuel economy. However, with fleets typically spanning a 14-year period, new and desirable technological features that can have an impact are seldom introduced rapidly (unless an enforced scrappage and/or incentive schemes are involved). For sure we can be excited about the prospect of a battery-powered heavy-duty vehicle that can travel long distances on a single charge, but there needs to be a balance between what’s possible now and what can be achieved in the context of the lifetime of the average fleet.

In a sense, it puts the onus back onto the fleet owner/operator to find intelligent approaches to improve efficiency, while continuing to address new fuel economy regulations and wider societal concerns over issues such as air quality and pollution.

Shell is committed to helping fleets meet these challenges. We are regularly working with businesses of all sizes to help them improve fuel economy, vehicle reliability and achieve lower maintenance.

In a later section, you can discover how Shell StarShip is providing solutions to address energy loss in Class 8 trucks. Emerging aerodynamic improvements for minimum wind resistance with maximum efficiency, side skirts designed to reduce drag for up to 14% savings in fuel and auto-inflate tires which provide consistent pressure to create maximum efficiency are some of the new features being explored, along with a tried and trusted solution: lubrication.

Indeed, as the next section explains, effective lubrication will remain as important today, as it will be in the future.

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*Based on annual diesel consumption reported by the EIA.gov
A truck’s main purpose is to carry goods, often heavy goods. All of the major mechanical systems within the vehicle are lubricated – the wheel bearings, the axle differential, the gearbox and the engine.

The primary role of the lubricants is to keep adjacent components apart so as to prevent wear and allow the truck to keep on trucking. And when the combined impact of engine, gearbox and axle effects are considered together, they can have an impact on fuel bills.

However, many commercial fleets underestimate the influence of lubrication on these impacts. Shell polled decision makers in eight countries², discovering that only a third (31%) understand how lubricants can help improve fuel efficiency, while only one in two owners/operators realize that different brands of lubricants deliver different levels of performance. So, not only do lubricants matter, but choosing the right lubricants matters most.

² Brazil, Canada, China, Germany, India, Russia, UK and U.S. from November–December 2015

THE POWER OF PARTNERSHIPS

Helping customers to choose the right engine lubricant delivers unquestionable business value. In the last five years, we have worked with fleets to help them save $23 million. Fuel savings are an integral part of the savings they are making. But other benefits are important, like reduced unplanned downtime and lower maintenance costs.

Seizing the cost saving opportunity very much depends on selecting the right product and ensuring you have an effective lubrication management strategy in place. Even the best product cannot perform effectively if it is not properly applied and managed. Through specialist technical services and expertise, Shell Lubricants enables fleets to realize the full value of a high-performing lubricants and grease portfolio.

Shell is working with fleets of all sizes, across every continent. The following Case study sheds light on how effective lubrication strategies achieve improved fuel economy and other benefits.
US TRANSPORT COMPANY SAVES $2,156,000 IN FUEL COSTS

The Challenge

This transport company was running a fleet of over 6,000 trucks with Cummins engines. It wanted to assess which oil would deliver improved fuel economy and bring down its total cost of ownership.

The Solution

The Shell Lubricant Solutions team recommended Shell Rotella T5 10W-30 and carried out two 30-day trials to demonstrate operational gains. Data was gathered daily in this strictly controlled trial and achieved a 95% confidence level.

The Results

- Test results showed an increase in fuel efficiency of 1.3% with Shell Rotella T5 10W-30
- Benefits in addition to greater fuel efficiency included improved wear protection, better cold temperature operation, improved battery life and extended oil drain intervals.

DELIVERING BUSINESS VALUE THROUGH LUBRICATION SERVICES

**Shell Lube Analyst**
Oil Analysis
Oil analysis services that helps you identify potential oil or equipment failures.

**Shell Lube VideoCheck**
Borescope Technology
Videoscope diagnostic service to inspect engines.

**Shell Lube Coach**
Training Program
In-depth lubrication training delivered by a Shell expert.

**Shell Lube Advisor**
Technical Advisors
Technical support including lube surveys and site audits.

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3. Savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site to site, depending on application, operating conditions, current products used, condition of equipment and maintenance practices.
INVESTMENT IN INNOVATION

Technology Advances

Innovation, product application and technical collaboration are at the heart of Shell Lubricants.

We invest significant resources in developing lubricants and greases to deliver value to our customers. We are continually developing lubricants technology, which will continue to help give transport companies a competitive edge. These include lubricants to reduce friction, flush away contaminants, absorb excess heat and form a protective barrier between surfaces.

The importance of greases can be overlooked as they generally represent only 3% of transport equipment’s total lubricant needs. However, they make an important contribution to overall performance. We are constantly exploring the ways that base oils and additives are used in grease formulation to deliver good water resistance, excellent mechanical stability and corrosion resistance, and remain fully viscous at high temperatures. Features that contribute towards keeping trucks on the road for longer between services, and thereby helping drive profit for their business.

Research & Development

Shell has research centers dedicated to lubricants in China, Germany, Japan (in a joint venture with Showa Shell), and the USA.

We have a patent portfolio with 150+ patent series for lubricants, base oils and greases; more than 200 scientists and lubricants engineers dedicated to lubricants research and development.

One of the unique ways we innovate in lubricant technology is by working closely with top motor racing teams, such as Scuderia Ferrari, BMW Motorsport and Penske Racing. These technical partnerships enable us to expand our knowledge of lubrication science and transfer cutting-edge technology from the racetrack to our commercial products.
Shell has partnered with the North American Council for Freight Efficiency (NACFE) and Carbon War Room on Run on Less, a first-of-its-kind cross-country roadshow to showcase advancements in fuel efficiency in long-haul trucking.

Taking place on real routes hauling real freights across the States, seven Class 8 trucks used current, commercially available technologies to demonstrate that it’s possible to reduce energy and emissions. The drivers also had to additionally cope with the impact of Hurricanes Harvey and Irma, which caused route changes and made driving often difficult due to wind speeds and directions. A true real-life test.

Aiming to improve upon the national average of 6.4 miles per gallon (MPG) of diesel, the trucks were fitted with technology to pore over every data point, such as vehicle speed, gallons burned, elevation of the route, miles traveled and more.

Crossing the United States in 17 days and covering over 50,000 miles, the truckers averaged 10.1 MPG. That’s significantly higher than expectations of what was considered possible.

Today, there are 1.7 million Class 8 type trucks in use in the States and Canada alone. If these vehicles could meet the levels of efficiency of Run on Less, it’s estimated that the commercial transport sector in North America would save 9.8 billion gallons of fuel, the equivalent of $24.3 billion per annum. And these bottom-line costs would cut carbon emission by 98 million tons each year. It’s been a great run. Think about how much further you could go.