Proposed Ontario Biodiesel Mandate a Solution Searching for a Problem

Canadian Fuels Association members are committed to producing and providing ‘clean fuels’. They support the 2% federal renewable diesel mandate in place since 2011. We see little value in Ontario playing ‘me too’ with a 2% provincial biodiesel mandate as proposed in the May 2nd provincial budget.

The province proposes to eliminate the current biodiesel tax exemption and replace it with a provincial biodiesel mandate. It acknowledges that the tax exemption is no longer required because of the Federal mandate, yet proposes a new, duplicative provincial mandate.

Biodiesel advocates suggest a provincial mandate would deliver environmental and rural/economic development benefits for Ontarians. The facts don’t support this view.

Conventional air emissions performance of biodiesel is not materially better than today’s clean diesel fuel. The U.S. EPA, Environment Canada and Health Canada all agree. In fact, with Ultra Low Sulphur Diesel and today’s new vehicle emission control systems, smog causing emissions from heavy duty vehicles are already approaching near zero according to Environment Canada. A 2% provincial mandate would result in no incremental GHG emission reductions over the existing 2% federal mandate.

As to rural/economic benefits, Ontario’s biodiesel production capacity is already more than double that necessary to meet Ontario’s share of the federal 2% mandate. The argument that a mandate is necessary to incent and support investment in new biodiesel production capacity just doesn’t cut it. The capacity already exists.

A provincial biodiesel mandate would, however, increase the complexity and cost of supplying Ontario diesel consumers – truckers – with reliable, fit-for-purpose fuels,
especially if compliance was restricted to first generation biodiesel (FAME) made from rendered animal fat, used oil and soy beans, as proposed by the biodiesel lobby. The challenges and costs of blending FAME in our climate are well documented in the results of the federal government’s National Renewable Diesel Demonstration Initiative and the Regulatory Impact Assessment that accompanied the renewable diesel component of Federal Renewable Fuels Regulations. The federal mandate imposes no such restriction.

The problem with FAME is that some solidify (or gel) at a temperature as modest as +15˚ C. Compensating for FAME’s poor ‘low temperature flow’ characteristics requires extensive and costly storage and blending infrastructure, and a partial switch to more expensive jet fuel as the base fuel to which the FAME is blended. The market is already moving away from FAME biodiesel to ‘second generation’ HDRD (hydrogenation derived renewable diesel). HDRD is a ‘drop-in’ fuel that is compatible with current diesel and can be used in any season, without costly blending infrastructure.

A recent federal government evaluation of FAME confirmed that the business case for this product is ‘weak’. As a result, the government withdrew financing support for the construction of new biodiesel production facilities. Manitoba, the one province that had imposed a FAME compliance restriction in its biodiesel mandate (a mandate that preceded the federal mandate), has now embraced second generation HDRD.

A duplicative and restrictive biodiesel mandate for Ontario may play well with certain political constituencies, but it would deliver no material benefit to Ontarians as a whole, while adding complexity and cost to supplying Ontarians with the fuels that are essential to the mobility of people and goods.

The Canadian Fuels Association strongly believes that a federal mandate is preferable to a patchwork of provincial mandates. A national approach to regulating renewable content in diesel fuel recognizes the realities of geography, climate and fuel distribution, facilitating flexibility to minimize costs to the economy and all Canadians.

Getting greener every year

When spring arrives and nature is in full bloom, it’s impossible not to think about the importance of preserving the environment for future generations. Environmental stewardship is also top of mind for members of the Canadian Fuels Association, who have spent almost $8.5 billion in the past 10 years to produce cleaner fuels and improve their refineries’ environmental record. There is still much work to be done, but our members are committed to making the industry greener every year. Below are highlights of the latest environmental performance trends.

Air

Canadians consume about 85 billion litres of liquid fuels such as gasoline, diesel, aviation fuel and home heating oil on an annual basis. As such, improving the environmental performance of the fuels we produce is at the forefront of refiners’ efforts to improve air quality in Canada. According to Environment Canada’s recent Sulphur in Liquid Fuels report, sulphur content in all liquid fuels decreased by 21% nationally between 2008 and 2009, significantly better than regulatory requirements.

Low Temperature Flow Properties of FAME Biodiesel

Low sulfur diesel (LSD) and tallow (TME), soy (SME) and canola (CME) based biodiesels at -9.64 °C
Another critical aspect of improving air quality is decreasing refineries’ atmospheric emissions. Emissions of sulphur (SOx) are down 56%, volatile organic compounds (VOCs) dropped 74% and nitrogen oxides (NOx) decreased by 31%. SOx, VOCs and NOx contribute to smog on hot summer days. Benzene, a carcinogen, is down 91%, as illustrated on the map below.

Additionally, carbon dioxide emissions from Canadian Fuels refineries are down 26% and energy use to produce fuels decreased by 18% since 1990.

**Water**
Refineries operated by Canadian Fuels members have continued to use less water and return it to the environment in a cleaner state. Our members’ water intake has dropped by almost 16% since 2005, and effluent deposits of five regulated substances — oil and grease, sulphide, ammonia nitrogen, phenol and total suspended solids — continue to be well below regulated levels.

**Land**
The fuels industry operates a complex network of 19 refineries, 15 of which are operated by Canadian Fuels members, 71 distribution terminals and 12,000 service-stations. When surplus sites are idled, our members remove the infrastructure and secure and monitor the sites until they have been remediated. Between 2009 and 2011, members of the Canadian Fuels Association remediated more than 450 sites across Canada, making them available for productive use.

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**Canadian Fuels Refineries’ Air Emissions Performance**

- Nitrogen oxide (NOx) emissions are down 31% since 1998
- Sulphur (SOx) emissions are down 56% since 1998
- Benzene emissions, a carcinogen, are down 91% since 1993
- Volatile organic compound (VOC) are down 74% since 1998
Winter driving season has dragged on for a long time this year, but spring is finally here, exposing us to a number of new driving challenges. Although snow and ice are behind us, spring driving can be just as tricky. If you are planning to hit the road this summer, here are a few tips to travel safe and save on gas.

**Safety first**
- At the first sign of spring, Canadians can’t wait to dust off their bikes, rollerblades and motorcycles or go for a stroll. Children are off school in the summer and there are more people on the streets, so be on the lookout for pedestrians, cyclists and motorcyclists. Remember to check your mirrors and look over your shoulder for those who may be concealed by your car’s blind spot.
- It might seem obvious, but buckle up. According to Transport Canada, the 7% of Canadians who don’t wear a seatbelt account for nearly 40% of collision fatalities.
- Give that gas pedal a break. It’s been demonstrated many times that having a heavy foot saves little or no time, significantly increases the risks of an accident and costs you money at the pump. Driving at a constant speed also helps you save on fuel. Slow down during heavy rain or if you are towing a trailer.

**Spring clean your car:**
- Routine car maintenance like oil changes can help your car run optimally. Warm weather limits a battery’s lifespan, so have your battery levels checked before leaving home.
- Keep a light load. Bags of salt and cat litter can come in handy for traction during the winter, but extra weight limits your car’s fuel efficiency.
- Switch your winter tires for regular tires to prolong their life and to save on fuel. Keeping tires properly inflated also improves your car’s efficiency.

**Plan ahead:**
- A little research and planning can save you a lot of time and fuel. If you are traveling on a weekday, limit idling in traffic by avoiding peak commuting hours.
- Several provincial governments provide construction reports and useful information on road conditions on their websites, while the Canada Border Services Agency gives hourly updates on border wait times.

**Keep cool:**
- Air conditioning can be a drag on a car’s fuel economy, use it wisely. Park in the shade and when driving in the city, roll down your windows to keep cool. On the highway roll the windows up, use air conditioning instead and avoid creating air resistance.
- Keep a few bottles of water in your car in case you are stuck in traffic or your car breaks down on a hot day.

More useful driving tips are available on the CAA’s website, Transport Canada and many others.
The arrival of warmer temperatures and the approach of summer coincide with significant changes in your gasoline. Those changes are needed to ensure fuel will perform optimally in your car, lawnmower, boat and other gasoline powered equipment.

Summer-grade gasoline has a lower volatility than winter-grade gasoline to limit evaporative emissions that can increase with higher temperatures. It also helps your engine run smoothly and reduces emissions that can contribute to smog on hot summer days.

Volatile is a measure of how easily a liquid (or solid) will change into a vapor. For gasoline, it is measured by Reid Vapor Pressure (RVP).

The higher the RVP, the more volatile the gasoline. RVP is limited to ensure that the fuel does not vaporize within the fuel system. If it does, the engine could stop running. Higher fuel volatility is needed in winter to help with those cold engine starts.

For logistical reasons, the transition to summer gasoline happens over the course of several months as temperatures rise and to facilitate lowering the RVP of remaining inventories of winter-grade gasoline. The reverse transition occurs going from summer into winter. Other products such as diesel also experience similar scheduled changes throughout the year.

Typically, diesel fuels weigh more than gasoline, and are more sensitive to cold temperature conditions. To avoid the formation of wax crystals which may interfere with fueling systems components, the “cloud point” of diesel fuel must be changed bi-monthly to adjust to temperature changes.

Canada’s seasonal and geographic constraints result in 5 to 10 seasonal fuel adjustments in each of eight distinct geographic areas. Temperature zones are established by the Canadian General Standards Board (CGSB) from data obtained from Environment Canada’s weather station networks across Canada.

Canadian Fuels Association, through our membership with the International Petroleum Industry Environmental Conservation Association (IPIECA), is working with members of the oil and gas industry around the world to improve the industry’s environmental performance.

We endorse the IPIECA report *Biofuels, Sustainability and the Petroleum Industry*, which supports the development of an internationally recognized and government-enforced certification scheme to ensure that information on the sustainability of biofuels production is practical, standardized and verified.