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Industry Review – Fleet Operability in BC and
Manitoba under Renewable Fuel Requirements for
On-Road Diesel

Introduction:

The purpose of this review was to gather and share relevant information on fuel-related operability in transport markets in BC and Manitoba, where renewable fuels have been in the market for at least one year. It was carried out to inform and support Alberta's transport fleets during the transition to blended fuels in Alberta.

Background:

Alberta has implemented a renewable fuel requirement for transport fuels as of April 1, 2011, following earlier implementation of similar regulations in BC, Saskatchewan, Manitoba and Ontario. The new rules in Alberta mean that gasoline may contain ethanol and diesel may contain biodiesel or another form of renewable diesel. Alberta's rules are similar to the federal rules in terms of volume requirements; fuel suppliers must, on an annual basis, include a 5% renewable alcohol (ethanol) content in their gasoline volume and 2% renewable diesel content in their diesel sold in Alberta.

As Alberta's regulated renewable fuel requirement comes into force, stakeholders in the province's transport sector have expressed interest in learning from the experience of other Canadian provinces where renewable fuels have been mandated for use.

Key questions from Alberta's commercial freight carriers have been:

- How has operability (operations and maintenance) been affected in markets where renewable fuels have been mandated?
- What does Alberta's renewable fuel requirement mean to my fleet?

To address these questions, Climate Change Central (C3), a non-profit organization, undertook a review of the experiences the transportation industry has had with renewable fuels in the BC and Manitoba markets. In both these markets renewable fuels were mandated and sold in 2010.

Approach:

C3 interviewed representatives from four stakeholder groups regarding their experiences since the addition of biofuels in the mandated markets of BC and Manitoba:

- Fleets - a large cross-section of different sized fleets ranging in size from 10 to over 1,000 trucks representing over 2,500 trucks;
- Motor Transport Associations - in BC and Manitoba;
- Engine manufacturers - the three major original equipment manufacturers (OEMs) that represent the majority market share of heavy vehicle engines in western Canada;
- Government regulators - in BC and Manitoba.

The benefit of contacting key organizations in the transport industry was that it ensured a cross section of information sources were used in the review. This approach is known as “triangulation” (analogous to pinpointing locations on maps by overlapping lines from multiple directions). Through triangulation, the industry review is able to identify issues related to operability as identified by players from the transport industry (end users), their industry associations, equipment manufacturers and regulators.

Interviews with fleets involved asking the following eight questions:

1. What company do you represent? (The names are kept confidential)
2. Where does your fleet focus its operation?
3. What is the approximate size of your fleet?
4. What kinds of vehicles does your fleet operate?
5. How does your fleet acquire fuel?
6. Have your fleet’s experiences in 2010 been comparable in terms of vehicle operability to previous years?
7. Did your fleet do anything special to prepare for renewable content in your fuel (e.g. tank cleaning, etc)?
8. Did your incidence of warranty claims relating to fuel system components increase in 2010 relative to previous years?

The review aimed to ask simple questions that addressed overall operability related to fuel and that would provide insights to carriers and other stakeholders about conditions in the mandated markets of BC and Manitoba. For questions six through eight, the interview included the ability to capture detailed comments. All interviews were conducted by the same interviewer.

Results:

The results of this industry review are broken down by stakeholder groups as outlined above.

Fleets:

The fleets interviewed in this industry scan spanned the range from small companies with less than ten trucks to very large transport companies with over one thousand trucks under the respondent’s management. Of 21 fleets interviewed, 5 were large (over 250 trucks), seven were small (6-20 trucks) and the remainder (nine) were in between. The fleets operated in Western Canada and some offered cross-border services. Three of the fleets interviewed were national in scope. Most fleets acquired fuel by card lock with four acquiring bulk fuel for yard tanks and one using public retail pumps.

Operability

In response to the question of whether a fleet's experiences in terms of vehicle operability in 2010 had been comparable to previous years (i.e. no change), the majority (14 of 21) respondents answered "Yes". Nearly every respondent added a qualitative statement (18 of 21). In their qualitative responses, three respondents mentioned fuel filters as part of their maintenance challenges but no fleet attributed these challenges as being related to the addition of renewable content in diesel fuel.

Preparation for Renewable Fuels

In response to the question, "Did your fleets do anything special to prepare for renewable content?" all respondents answered "No."

Warranty Claims

Across the twenty-one fleets interviewed, no fleets reported quantitative indications of increased warranty claims since the introduction of renewable fuel. By contrast, almost every fleet interviewed volunteered qualitative responses mentioning exhaust gas recirculation (EGR), diesel particulate filters (DPFs) and/or urea diesel exhaust fluid (DEF) as causes of increased maintenance costs and logistical burden.

Motor Transport Associations:

Discussions with the two motor transport associations confirmed that their members had not reported any systematic operability issues related to diesel fuel with renewable content.

Equipment Manufacturers:

C3 interviewed three major Original Equipment Manufacturers (OEMs) representing truck engines that account for over two thirds of the market for transport trucks in western Canada. Overall, OEMs are aware of the introduction of renewable fuels in Canada. Their observations echoed those of the fleets, highlighting challenges relating to new exhaust treatment technologies since the 2007 model year.

In general, these OEMs were aware of corporate statements about acceptability of blended fuels with their various engine platforms, and the limits within which those statements are valid. All OEMs stated an acceptable blend of B5 (5% biodiesel) while some engines support up to B20 or B30.

None of the OEMs reported any warranty claims from fleets related to the use of diesel with renewable content within the reporting period. As well, the OEMs were not aware of any added

service issues with their customers related to renewable blended diesel fuel such as fuel filter plugging.

Regulators:

C3 contacted regulators in BC and Manitoba responsible for the renewable fuel mandates regarding their knowledge of any negative operability issues attributable to biodiesel. In both cases, regulators stated that no such impacts had been observed or reported to them by fleets, OEM's or fuel suppliers.

Conclusions:

Following the principles of triangulation, this review attempted to summarize operational issues identified by fleets, OEM's, trucking associations or regulators that were attributed to renewable fuels.

No issues were directly attributed by the respondents to renewable diesel. As some general fleet operability issues were mentioned by respondents, C3 approached industry associations to see if such issues were flagged at the association level, and whether they could be attributed to renewable content. Neither industry association relayed any incidence of operability issues raised by their members that were attributed specifically to renewable content. As well, C3 approached regulators to see if any stakeholders had approached them regarding operational difficulties attributed to renewable content. Neither regulator reported any such issues.

In light of this triangulated approach, the conclusion of this review is that the use of renewable content in diesel fuel in BC and Manitoba has not caused any discernable impacts on overall fleet operability. This conclusion should give comfort to fleet operators in Alberta regarding the introduction of Alberta's renewable fuel mandate which came into force April 1, 2011.

At the same time a recurring theme raised by interviewed fleets is that western Canada is still adjusting to the engine and emissions control technologies implemented since the introduction of 2007 and 2011 model year engines that employ exhaust gas recirculation, diesel particulate filters (DPFs), selective catalytic reduction (SCR) and diesel exhaust fluid (DEF).

Continual monitoring over the early stages of renewable fuel implementation in Alberta may be helpful to ensure that its renewable fuel standard is implemented as effectively as were those in Manitoba and British Columbia.