

Alaska Rural Communities
ADEC Recommendation for a Transition Plan to Ultra Low Sulfur Diesel

Under Federal Regulation (40 CFR Part 80), Alaska may develop and submit for EPA approval an alternative transition plan for implementing the ultra-low sulfur standard. The Alaska Department of Environmental Conservation (ADEC) recommends rural Alaska transition to ultra low sulfur diesel through a community-choice approach. This recommendation is for the areas of Alaska not accessible by the Federal Aid Highway System. The area includes portions of the state unconnected by road to the Lower 48 through Canada. The area also includes communities without regular, annual, drive on/drive off Alaska Marine Highway service.

The community-choice approach includes the following elements:

- From September 2006 to June 2010, communities can choose their own fuel management strategy knowing that a 2007 model year diesel truck or bus will require ultra-low sulfur fuel.
- All communities must meet a June 2010 deadline to supply only ultra-low sulfur diesel for all diesel powered vehicles.
- Communities must provide and post documentation of fuel shipments of ultra low sulfur so that consumers can verify they are getting the fuel needed for proper operation of their vehicle.

The ADEC plans to participate in a study over the next three to four years to determine the specific health effects of long term exposure to large stationary sources of diesel fumes. ADEC may revise the permit requirements for stationary sources if the study shows a health impact to rural Alaskans from exposure to diesel exhaust concentrations found in villages.

Appendix – Supplemental Information

Diesel exhaust is harmful. The lack of health data concerning rural exposures to diesel exhaust warrants further investigation if the state is to fulfill its statutory role in public health protection. ADEC may pursue a more aggressive conversion to the cleaner fuel for mobile and stationary power generation if a proposed study of the effects of diesel exhaust from stationary sources warrant. ADEC is aware the national plan for conversion to ultra low sulfur diesel would cause economic hardship to rural communities. It is from the effort to balance these concerns that the community-choice plan was formed. The community-choice plan has the following highlights:

- Full flexibility between 2006 and 2010 in importing ultra low sulfur diesel.
- A June 2010 deadline for converting on-highway fuel to ultra low sulfur diesel.
- A need for health data.
- A need for an economic analysis.

Health Concerns

Local communities and Tribes raised an important question that could not be answered: What is the health impact of higher sulfur diesel on Alaskans living in rural communities? Many scientific studies show significant health impact with adequate exposure to diesel exhaust. This is of great concern to people living in dense, highly trafficked, urban areas. Indeed, the high probability of existing health impacts from heavy duty vehicle diesel emissions is the driving force behind the national rule.

The national rule only applies to heavy duty trucks and buses. However, trucks and buses are rarely the primary source of diesel exposure in rural Alaska. The biggest source for exposure may be power generation. The method of power generation in rural Alaska is unique, with most communities serviced by a central diesel generator rather than falling on a grid. The potential health impact of this situation has not been studied. To address this, ADEC is developing a study and seeking funds to determine health impacts of diesel air pollution in rural areas. Communities can use the results to help decide how to transition to ultra-low sulfur diesel fuel. The state may use the results in permit decisions on stationary diesel sources.

Ultra low sulfur diesel rule implications on the rural Alaska diesel market

Alaska refiners rely on the jet fuel market to produce one grade of distillate diesel fuel to serve all mobile, nonroad, and stationary source fuel needs in rural Alaska. The motor fuel market in Alaska is only about 5% of the total diesel fuel market. Consequently, there is little incentive to convert Alaska refineries to produce the new cleaner diesel fuel. By comparison, refiners in the lower 48 states will convert their refineries to make the ultra low sulfur diesel because the motor fuel market is as much as 45-50% of their diesel market.

Further, fuel storage and barge infrastructure in rural Alaska are currently designed for one grade of diesel fuel. Jet fuel is distributed, downgraded, sold, and used as diesel #1 because it meets arctic specifications. The efficiency and cost effectiveness of this system is further disincentive to introduce a small volume of a specialty fuel.

However, unless a rural community prohibits new diesel vehicles, a market demand for the cleaner diesel fuel will emerge after 2007. The market demand will be small, as there are only a few diesel vehicles in rural Alaskan communities. By comparison, diesel used for electrical power generation and heating is probably 98+% of community demand. It is possible that distributors will not choose to modify barges or add tanks and will switch the diesel fuel stream entirely to ultra low sulfur diesel. If so, all sources in the village would have to burn ultra low sulfur diesel. Many villages would still have to import Jet A for use in airplanes.

Lower 48 and Alaskan refiners will still make jet fuel for the aviation market. There is and will be a strong demand for aviation jet fuel in Alaska – primarily in Anchorage and Fairbanks, but also in rural hub communities with jet service. Consequently, jet fuel serving the non-aviation market as diesel #1 and the new ultra low sulfur diesel will be available to meet market demands for vehicles, power generation and space heating.

To make the decision between one or two grades of diesel, communities will likely need a cost assessment for new infrastructure of a two tank system and shipping costs for one fuel versus a two fuel option.

Community Choice

How can the state and communities best balance the concerns of health and increased fuel costs? Communities with jet aircraft service and on-highway diesel trucks will have to handle at least two grades of diesel fuel. However, a community without a need for jet aircraft fuel may choose to use only one fuel type – the ultra low diesel must be used for new vehicles and could be used for all other diesel fuel fired equipment. Because more than one fuel will be available, communities and fuel distributors are going to have to make a choice. A community-choice approach allows a community to bring in the fuel before June 2010 on their own timeframe, as dictated by local priorities, concerns, and logistics. However, after June 2010, ADEC's proposes ultra low sulfur diesel as a requirement for any and all diesel trucks or buses in the community. Rural Alaskans should enjoy the benefits of a cleaner burning diesel fuel with the rest of the state and country.