

**Relevant Q&A** not fully covered during the webinar (for full context, please view the webinar):

- **Any comments on a petrol alternative – bioethanol – what you could do in NZ today?**  
Bioethanol is a product that is well established and widely used around the world. New Zealand however does not produce much bioethanol, and if we wanted to introduce bioethanol as a petrol biofuel the volume of NZ manufacture biofuel would not be significant. You could import bioethanol manufactured overseas but in this case you also need to consider emissions from importing, also whether the feedstock competes with a food source.
- **Any guidance on biodiesel use for diesel generators?**  
Generally B5 biodiesel blends (5% biodiesel, 95% mineral diesel) can be handled, stored and used in the same way as ordinary diesel. Diesel fuel used for generators can be stored for extended periods – you would need to discuss with your supplier but suggest that the storage period for diesel or indeed B5 blends should not exceed 6 months, unless the fuel is checked to ensure it has not degraded.
- **Is biodiesel ok for Marine use?**  
At a B5 blend, biodiesel should be able to be stored, handled and used in the same storage and handling equipment as that used for conventional marine diesel. Marine engine manufacturers generally accept the use of B5 biodiesel but there is a dependency on whether you buy against ISO8217 (international marine specification for diesel – international companies would typically buy against, not necessarily local companies). Currently ISO8217 doesn't allow for the addition of biodiesel but with the increasing availability and use of biodiesel internationally, ISO TC28 (working group) is currently reviewing to specifically include biodiesel up to 7% as an option in ISO8217.
- **What type of biodiesel if available for aviation fuels? Is Z looking at these as well?**  
In the aviation space, understand some potential with an ASTM standard review allowing the blending of renewable AGO with Jet, but biodiesel with Jet fuel isn't something you can do today. Renewable Jet fuel, which is similar to renewable diesel, is currently available and indeed used as a blend component in some Jet fuel used in commercial flights in the US and Europe. A significant amount of research and development work is underway to produce renewable Jet that will meet international jet fuel specifications and has been proven by the Aviation engine manufacturers. Currently renewable Jet manufactured from fats and oils (HEFA) does meet Jet fuel specs and is used in some commercial flights. This fuel is different to biodiesel as the renewable Jet is a hydrocarbon and not an ester. Z biodiesel is not approved for use as a fuel for aviation uses. Z is interested in the biojet space but no plans or commitments on that today.
- **Will there be bulk delivery options for [Z Biodiesel] trade customers?**  
We [Z] would have to treat this in the same way as biodiesel blends greater than 5% and discuss the options and issues with the individual customer. We can physically load out B100 from the Z Biodiesel Plant in Auckland, but storage and use of the B100 has different requirements from B5 blends.
- **How good is the public understanding of biodiesel blends? Have you [Z] surveyed customers?**  
Discussed that conventional biodiesel has been widely used globally since the mid 90's but is relatively new to NZ. Part of the Low Carbon Transport working group (which generated this webinar!) is to raise awareness of biodiesel basics and help increase the uptake of biodiesel in NZ. From a Z Biodiesel perspective, we have not surveyed customers rather worked with customers individually, as well as the MIA, vehicle manufacturers and insurers to ensure everyone comfortable with the product – as a result of some of this work, the MIA has loaded some information on their website outlining details biodiesel blend limits for a range of specific light and heavy vehicles – pdf's for these can be found at: <http://www.mia.org.nz/Documents#Fuels>
- **If using Z B5 for our business, do we use an emissions factors or the 4% figure?**  
Yes the ~4% saving is based on a lifecycle assessment comparing NZ Tallow biodiesel vs mineral diesel (more information [here](#)). Original reference data based on a study in 2009 here: [https://www.eeca.govt.nz/assets/Resources-EECA/biodiesel\\_report\\_ghg\\_emissions-models.pdf](https://www.eeca.govt.nz/assets/Resources-EECA/biodiesel_report_ghg_emissions-models.pdf). We [Z] will be doing a refined footprint assessment after our plant is in full operation.
- **How similar is power output to mineral AGO?**  
The presence of the oxygen molecule means the energy content of biodiesel (B100) is around 10% less than ordinary diesel. So the reduction in energy content for a B5 blend will be around 0.5%, which will not be noticeable in use.
- **Because emissions reductions depend on where the feedstock comes from, what is your/Z's perspective when you factor in emissions in producing biofuel here.**  
We look at the whole life cycle of the biofuel and compare this with the 'well to wheels factor' for New Zealand mineral fuel to determine the reduction in Green House Gas (GHG) emissions. We selected a process that can use Tallow as a feedstock as the potential emissions reductions from tallow in NZ are quite high compared with ordinary diesel, and other possible feedstocks. Used Cooking Oil can also provide significant reductions. As UCO and Tallow are waste products, there are advantages using these feedstocks.