

# Fuel for Thought

## When Being Dense is a Good Thing...

Sometimes people ask me why QER is working to develop new sources of diesel and aviation fuel for transport while other transport energy alternatives – such as electric vehicles - are being developed.



**Bruce Andersen**  
Site Superintendent,  
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The reality is that different fuels have different strengths and weaknesses. And the big strength of diesel is that it has very high 'energy density'. You see the problem with transport fuels is that you usually have to carry the fuel around with you. That takes up space, uses up energy, and requires cost to safely contain it.

There's no doubt that electric trucks will have an increasing role on short haul trips. They will be used for example to deliver goods within cities.

However batteries have only a few percent of the energy density of diesel and therefore for long haul duty, they start to take up a big percentage of the truck's 'payload'.

For example, a fully laden semi carrying groceries and fresh food from Gladstone to Brisbane might use around 288 litres of diesel, which would fit into a cube of 60x60x60 cm and weigh about 250kg. On the other hand batteries would weigh many times more than that and take up much more space. In fact, the batteries alone could take up half or more of the truck's payload. So for those heavy duty jobs like long haul trucking, dozing, plowing etc, diesel still appears to be the preferred energy source.

There are many other considerations too – for example how long it takes to charge very large batteries and the massive electric infrastructure needed to do it. Furthermore, diesel engines are becoming increasingly cleaner more efficient.

So while electric vehicles will no doubt play an increasing role in the future, we think diesel is here to stay for a long time to come. It makes sense therefore for Australia to develop our own sources of fuel and QER will have an important role to play in developing Australian-made fuel in the future.



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