

NZers drive their cars so long they'll need transition fuels, warns biofuels leader



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Energy and Mobil have both trialled selling bioethanol blends or biodiesel from forecourts, but only Gull is doing it now. Photo: Jonathan Milne

It's no secret there are transport sectors that are hard to decarbonise, like long haul aviation, shipping and heavy trucking.

But the leader of a project at the decommissioned Marsden Point oil refinery, to produce biofuels from cow manure and other feedstock, has an additional concern.

Noor Begum is senior commercial vice president at Chicago-based Seadra Energy Inc, leading a consortium including Channel Infrastructure, Japanese renewables developer Renova, airlines Air NZ and Qantas, engineering firm Kent and financier ANZ NZ.

She says electrification will carry the majority of the burden for the transition, though biofuels can play a role in waste management and decarbonising "the more challenging" transport sectors.

"And to our concern, in parts of the world even the light vehicle electrification process isn't increasing as fast as we need it to, and sustainable fuels could help decrease emissions for those ICE cars being purchased today," she tells Newsroom.

Kiwi utes are kept running for 21.3 years. New Zealand passenger cars are on the road an average 19 years before being scrapped; by contrast, American cars stay registered for just 15 years, and Australia, Japanese and British cars for fewer than 14 years.

This country keeps its motor vehicles running far longer than other developed nations before scrapping them – which is both good and bad.

On the plus side, it's better not to scrap vehicles and other machinery prematurely, and incur the environmental impacts of dumping them and extracting the materials to build new replacements, with the greenhouse gas emissions that production entails.

On the negative side, older cars are more dangerous, more polluting, less fuel efficient, and less likely to use new technologies like electric battery engines.

"New Zealand itself has very long lifespans for vehicles, so any new or used car being imported into the country today will still need liquid fuels for the next five to eight years."

Begum says biofuels are vulnerable to increased geopolitical volatility. "Geopolitical stability ... equally affects the biofuels industry as it does other industries. One of the challenges we see on the horizon for the industry, which has historically been a very global, free-trade driven industry, is the increasing trade barriers being erected across the world."

Another big challenge is sourcing feedstocks to make biofuel from.

Newsroom reports this week that the Marsden Point consortium, led by Seadra, is now looking to use livestock effluent to produce sustainable aviation fuel, ethanol, biodiesel and fertiliser.

Channel Infrastructure has told investors it's documented key terms for

feedstock supply and product off-take in a heads of agreement, and these terms are progressing to final form.

The belching and farting of New Zealand's cows and sheep contributes to greenhouse gas emissions – but their faeces could now help solve the problem. Firms overseas have already patented processes to convert excrement from lactating dairy cattle to a combination of ethanol, methane and fertiliser.

Asked whether the new relationship with Ballance Agri-Nutrients would help Seadra build the requisite relationships in the Kiwi agricultural sector to progress an effluent-to-energy solution, Begum chooses her words carefully. "Ballance is a key partner in the project and will definitely help drive the relationship building in that sector," she says.

Last month, California-based startup Circularity Fuels boasted of passing a new milestone by completing the world's first end-to-end conversion of raw cow manure biogas into sustainable aviation fuel. The demonstration was carried out at a dairy farm near Madera, California, which houses more than 5000 cattle and generates biogas through manure digesters.

The challenge for New Zealand will be to collect the cow pats, given most of our cattle graze outside in paddocks rather than living indoors in sheds!

But there are solutions: the Madera farm covered manure-coated paddocks and anaerobic lagoons with geomembranes to capture biogas generated from the anaerobic environment. As the biogas was generated, the membrane inflated, serving as a storage area for the biogas.

Begum sees a longterm role for biofuel in transition for the most challenging transport sectors, especially longhaul aviation.

"While no one has a crystal ball, we believe biofuels will have a role to play longterm as the process to develop a new propulsion system for sectors like aviation is a multi-decade process spanning R&D, prototype, testing,

certification, serial production, and then finally uptake amongst the airlines."

Sustainability Council executive director Simon Terry says the Marsden Point bio-refinery project offers welcome potential for added fuel self-sufficiency, with its promise to manufacture up to 400 million litres of fuels – that's nearly 5 percent of New Zealand's petroleum demand.

But with the involvement of international air carriers Qantas and Air NZ, he questions whether the New Zealand domestic market will have access to all that biofuel.

"It would be important to know whether Qantas, for example, or any other commercial arrangements would have priority over 'domestic' use in crisis. The final scale will also be important, and what proportion is diesel and what sustainable aviation fuel, as diesel is the critical one."

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