

# The **UAE** Strives For Clean Energy With Neutral Fuels



**K**arl Feilder is a pioneer of alternative fuels in the UAE, specifically biofuels, and CEO of Neutral Fuels in the UAE. The British-born entrepreneur has spent many years persuading UAE organisations to utilise fuel made from used cooking oil. His tireless work has won over McDonalds, the fast-food chain which now utilises its own used cooking oil to run its truck fleet, the Gulf Indian High School, and earlier this year, Feilder announced a major coup - Dubai Municipality has also committed

to running its fleet on his green fuel, making Dubai is the first city in the world to adopt biodiesel made 100% locally from 100% waste cooking oil for use in municipality vehicles.

Neutral Fuels runs the only biofuel production plant in the UAE, and Feilder is rightly proud of his unique fuel manufacturing licence, which he acquired in 2010.

‘The company produced its first batches of biofuel in 2010 when I drove to my first meetings in my

own 100% biodiesel powered Land Rover. Since then, Neutral Fuels has expanded production capacity almost tenfold and won many awards for both research and its commercial implementation,’ he said.

Biodiesel – which doesn't cost any more than traditional diesel – is the quickest and simplest method available for vehicle owners to decrease reliance on fossil fuels and reduce greenhouse gas emissions.

Biodiesel made from used vegetable cooking oil reduces CO<sub>2</sub> - carbon



Biofuel Plant Model For Dubai Municipality

with no impact to their fuel efficiency, and only positive impacts on their vehicle engines. By using better fuel management technology, we have also helped our customers keep track of their individual vehicle fuel consumption and in some cases assisted them to retrain their drivers which has further improved their fuel use efficiency."

Adopting biodiesel is the simplest, quickest way to significantly reduce your organisation's carbon footprint. 'Using 100% biodiesel, as many companies have already done over the last five years, will reduce your carbon footprint by more than 85%, with zero impact on fuel consumption, at the same price as regular petrodiesel. Many of our customers have chosen to use a 5% biodiesel / 95% petrodiesel blend known as B5 or 20% biodiesel / 80% petrodiesel blend known as B20. Independent tests have shown that this fuel has up to 60% better lubricity than regular petrodiesel and thus increases engine life," enthused the evangelist.

But he is positive, and with strong government backing - HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, is driving initiatives to promote fuel efficiency and create a truly sustainable city within the next three decades, under his UAE Vision 2021 and Dubai Integrated Energy Strategy 2030, which include the rational use of energy and fuel - he has every reason to be.

'I believe we have now moved from the classic 'early adopter phase' into the beginning of mass market adoption of biofuels in the UAE," he said. His company has recently taken steps into producing a liquid biofuel for furnaces and boilers, expanding the use and adoption of clean, green substitute fuels which significantly reduce the UAE's carbon footprint.

dioxide - the 'greenhouse gas' that is causing the temperature of the planet to rise and melting the ice caps. A move to clean biodiesel means less CO<sub>2</sub> being emitted into the atmosphere, which in turn means less global warming.

### LACK OF UNDERSTANDING

Given that biodiesel has proven environmental credentials, halves poisonous carbon monoxide emissions from exhaust pipes and brings better air quality, why on earth aren't more

people/corporates adopting biofuel?

'The greatest barrier to adoption is a lack of understanding and a fear of adopting 'new' technology," explains the engineer. 'Many fleet operators are understandably very cautious about making any changes to the type of fuel they use in their vehicles, and yet the whole of the UAE switched from 500ppm diesel to 10ppm diesel in July 2014 in the space of one week.

'All of our customers who change to biodiesel have done so painlessly,



Karl Feilder, CEO of Neutral Fuels in the UAE

‘Both biomethane and bioethanol are still at the very early stages of implementation in the UAE, but biodiesel and biofuel for furnaces is now fully commercialised,’ he said.

### INCREASING PRESSURE

‘There has never been a better time to use biodiesel, and since the recent hike in fuel prices we have doubled our sales volumes. Rather than being driven by the market price of fossil fuels, many customers are coming under increasing pressure from their customers and investors to demonstrate they have a viable carbon reduction policy. Adopting biofuels makes that very quick and easy – it is simply the fastest way to demonstrate a significant reduction in carbon footprint with zero financial impact.’

But why do we need to reduce CO<sub>2</sub> and how does biodiesel help this quest?

‘In 2006 the world was told clearly and calmly by the United Nations that climate change is real, is caused by human activity, and is causing serious damage to our living environment.

‘In many ways, it seems the damage we have all done to our planet was so bad that many simply could not believe it. Since then, the move to reduce carbon emissions – one of the biggest causes of climate change – has been painfully slow. This is understandable as governments and companies are slow to react to the huge changes required, and while our own government in the UAE has pioneered many exciting programmes and shown the world that we in the Middle East really do care about improving the situation, yet more must be done. As has been mentioned earlier, adopting biodiesel is the quickest, simplest, and cheapest way that any organisation can reduce its carbon footprint.’

And where does he see the UAE’s burgeoning biofuel industry in five or ten years?

‘I think it’s very likely that within five years all diesel sold in the UAE will include at least 5% biodiesel, which is already the case in more than 60 countries worldwide. This would decrease road transport-related carbon emissions of the UAE by about 2% overnight, decrease smog and air

pollution, and extend engine life. I also expect significant numbers of individual companies to adopt a 20% biodiesel / 80% petrodiesel blend as their normal fuel. Within ten years I expect bioethanol will be added to all petrol products and that companies who do not use any biofuels will be in the tiniest minority.’

Feilder’s UAE production facility is geared up to meet this growing demand.

‘Like many companies, we operate according to short and medium term capacity plans, based on our assessment of market conditions. At the start of 2015, we doubled our capacity to deal with the demand increase we expected this year, and so far we are tracking well,’ he explained, adding that his company has already purchased the equipment needed to adequately deal with anticipated demand in the first half of 2016. ‘But we remain flexible and expect to be able to react organically and with partnerships to any dramatic upscaling very quickly.’

### SIGNIFICANT CHANGES

As the Chairman of Neutral Group, Feilder also advises companies on carbon neutrality. The UAE has strong ideals of becoming a sustainable environment, but how close are we to that, and how do we compare to other countries?

‘I don’t believe it is really useful to compile a ‘league table’ of how countries are performing in terms of sustainability. We humans share one planet, and everyone, wherever they live, must make significant changes. Having said that, some countries have made significant changes and have massive government programmes to implement those changes, but each country is different and has different drivers.

‘In a high tax country it is

relatively easy to force change by manipulating the tax regime - in more entrepreneurial economies the drivers must come from the market not from central government. My personal belief is that companies which operate on a global scale will be forced by their competitors, customers, and investors to become sustainable faster than government policy can be enacted. It has been our experience advising some of the biggest companies in the world that they can achieve significant competitive advantage by using a sustainability focus to implement efficiency improvement.

‘Ultimately companies which are more efficient and have better use of their resources will be more competitive, which will force their competitors to be more efficient and sustainable and so the cycle will continue,’ he said. And what is the fuel pioneer’s dream? ‘In a few decades, I hope to have grandchildren. I want to look them in the eye, smile, and be proud to answer their question: ‘Grandfather - what did you do to save our planet from climate change?’ So far, so good, but we all have a lot more to do ...’

- Will Rankin



- Diesel engines in the UAE do not need to be adapted for biodiesel.
- Biodiesel has been extensively tested in the UAE in the last five years in a wide variety of vehicles covering millions of kilometers.
- Biodiesel is non-toxic, fully biodegradable, and safer to store than fossil diesel.
- Biodiesel is better for running diesel engines than fossil diesel due to its superior lubricity and higher cetane.
- Biodiesel is the most useful and most sensible thing you can do with used cooking oil.
- Diesel engines burn less fuel than a petrol engine performing the same work. Petrol engines are typically 25% efficient, while diesel engines can convert over 30% of the fuel energy into mechanical energy.
- Most modern diesel cars and trucks are capable of running on 100% pure biodiesel (known as B100) in all but the coldest of European winter temperatures. This is obviously not a problem in the UAE.
- Diesel motors run better, burn cleaner, emit less SOx and last longer on biodiesel fuel.
- Biodiesel from used cooking oil can result in an 84% reduction in carbon footprint compared with fossil diesel, without any modifications to the vehicle. (Source : UK Dept. of Transport report, January 2008.)
- Rudolph Diesel patented his engine in 1892 and his first working prototype ran on vegetable oil in 1897.

## Recognition

In February 2012, Neutral Fuels, jointly with McDonald’s UAE, won the 2011 Dubai Award for Sustainable Transport in the Environmental Protection category from the Dubai Road and Transport Authority (RTA). In April 2012, its client, Allied Keystone Logistics (UAE), was named Planet Champion in the Logistics Category of McDonald’s Global Best of Green 2012 Awards and won a Best of the Best Award for its UAE biodiesel initiative.

Another customer, the Gulf Indian High School of Dubai, has run its entire school bus fleet on 100% biodiesel since January 2013. Since then, the buses have used more than half a million litres of B100 (100% biodiesel). This represents a carbon saving of 1,380 tonnes of CO<sub>2</sub>e; the equivalent of 68,900 trees growing for one year. In 2013, Gulf Indian High School won the RTA award for Sustainable Transport due to its use of B100 biodiesel from Neutral Fuels.