

'Cow Poop Bus' running on bio-methane breaks service bus land speed record



Michael Graham Richard (@Michael_GR)
Transportation / Public Transportation
June 9, 2015



Promo image Reading/BBC

A service bus from Reading, UK, converted to run on bio-methane broke a land-speed record for a service bus recently, hitting 76.785 MPH, which is about 20 MPH faster than a typical bus can go (the driver said that he unofficially went above 80 MPH, but that wasn't recorded as the official speed). Granted, that's not exactly a face-melting speed, but the stunt had more to do with the fuel than the speed; the bus was powered by cow poop.

I'm *not* a big fan of most **biofuels**. In fact, I think the internal combustion engine (ICE) is on the way out because it's inefficient and complex compared to electric motors, and it's limited to only a few kinds of fuels while electric motors are omnivorous and can munch on electricity from any source (and as the **grid becomes cleaner**, they become cleaner too).

But some biofuels can make sense. Not those made from food crops like corn, because they jack food prices up and agriculture requires a lot of water and energy, making environmental benefits slim, if any. But biofuels made from *waste* can make sense,

especially if that waste is methane, a powerful greenhouse gas that would otherwise go in the atmosphere and mess with its chemical and thermal balance.

Here's the math:

According to the EPA, agriculture accounts for around 9 percent of the United States' total greenhouse gas emissions. Of that, the majority is due to livestock, especially cattle, where methane is released into the atmosphere as the waste stews in fields and such places.

Compared to the 27 percent transportation contributes to the U.S.'s emissions problem, this might seem like a minor issue — but methane's effect is around 20 percent stronger than that of carbon dioxide; if you could remove the cow manure using methane digesters from most California dairies, it would equate to the equivalent of eliminating one million cars from the roads. And that's from just one state; there are around 88 million cattle on farms throughout the United States. What's more, Sustainable Conservation suggests the biogas produced from that methane in California alone could power more than 100,000 vehicles. ([source](#))

So capturing methane from the decomposition of waste (all kinds), either to burn directly in converted large vehicles that we can't electrify just yet, or in power plants, displacing fossil fuels, makes a ton of sense.



UPS/Promo image

I recently wrote a piece about **UPS deploying 'renewable biogas' in 400 of its vehicles**, and hopefully other big fleet operators will do the same. These trucks drive all day, every day, and require a lot of fuel. They're a low-hanging fruit for these types of alternative fuel conversions (and ultimately, to go all electric).



Youtube/Screen capture

As you can see, the bus was painted black and white like a Holstein Friesian cow. It normally carries passengers around Reading, a city West of London, UK.



Wikimedia/Public Domain

Via [BBC](#), [Yahoo News](#)

Related on TreeHugger.com:

- [It's official, Apple Maps will have transit directions in iOS 9](#)
- [UPS to experiment with renewable biogas in 400 vehicles](#)
- [Why is Bill Gates drinking poop-water? \(video\)](#)



Join the discussion...



WBrooke · a month ago

I agree with all the discussion about electrification of the vehicle fleet. Essentially it would make vehicles "fuel agnostic" since they would just accept whatever electrons come down the wires whether the electricity is generated from coal, natural gas or solar panels. Then the trick would be to clean up the electricity grid.

However, that scenario requires some breakthroughs in electricity storage, both at the vehicle scale and at the grid scale to allow greater integration of intermittent renewable sources.

The benefit of using bio-methane as a direct replacement of natural gas is that methane is already a great energy carrier and there is already an existing distribution network for natural gas.

2 ^ | ▾ · Reply · Share ›



Solomon Parker · a month ago

Nice. One point however on the source of methane. Cow manure is good. However, as has been noted many times, cows are bad for the environment. And in fact, though people think cow manure is a good source for methane, spoiled food is far better. Think about it, the cow has already taken a lot of energy from the manure. Food still has all its embodied energy. Every city has an enormous built in source of unused, wasted, and spoiled food that could be converted to methane, as well as the methane that comes from wastewater plants.

1 ^ | ▾ · Reply · Share ›
