The ObNOxious Truth

Colin Matthews, Low Carbon Vehicles & Fuels Advisor at JouleVert Ltd revisits a burning issue...

So here we are a year on and what have we discovered? A year may be a long time in Politics but in the heady world of the Fleet manager perspectives can change fast.

The UK now faces infraction proceedings from the EU due to our failure to control NOx emissions in our cities with the strong possibility that the fines will be passed down to the Cities that are in breach. Is this is the same EU that sets the standards (with the vehicle manufacturers) for our tailpipe emissions but leaves the testing procedure in the hands of the Motor Industry! The industry self certifies, wouldn't it be great if we self-certified our tax payments to Government, I bet the outcome would be very similar….

In the last year cities like Sheffield and Brighton & Hove have done some real life tailpipe emission testing in their urban environments in very well controlled procedures. The results show, surprise surprise, the level of NOx out of the tailpipe is significantly higher than the EU standards that the vehicles supposedly meet. Why is this? Well if you look at how Selective Catalytic Reduction (SCR) works the answer is obvious and true. SCR requires a set temperature for the 'reaction' with Urea to take place, this in turn means the engine needs to be 'worked' to get the exhaust gas temperatures up but in stop start urban traffic this does not happen thus the NOx passes straight through and into the local air. The Sheffield results show that a Euro V bus puts out more NOx than a Euro III. Where does that leave the poor Public Sector Fleet manager trying to find a way through the CO_2 and NOx conundrum?

The retrofit SCR suppliers know this issue and are fitting additional means of raising the exhaust temperatures such as burning fuel in the exhaust just before the catalyst but at the expense of increased fuel use and more CO_2. We have examples of fleets having to drive vehicles up and down motorways to burn off the Particulate traps as well. This all smacks of the sticky tape solution when what is needed is a series of significant steps to help us all be able to see reality and make the right decisions based on facts and truth.

Firstly we need much better real life drive cycle testing, not the current flat road low acceleration testing that is done for cars or, worse still, the engine out commercial vehicle engine testing that removes gearbox and axle factors. Forward thinking private sector companies such as Tesco and First Group have instigated their own drive cycles at places like Millbrook that mimic their typical fleet operations and as a result they can clearly see which technologies perform in their business fleets and have a clear financial picture of each one. First have offered their drive cycle to Government to use to assess bus technologies, it has proper mapped bus stops across urban, inter urban and rural route with all the energy (doors opening and kneeling) taken into account in the energy balance. Much more accurate that the current MLTB 159 cycle. I hope DfT take up the offer so that value for money is delivered to taxpayers for any grants awarded, though a number of the technology providers don't like that idea.

Secondly we need incentive programmes that drive the maximisation of emission savings (both AQ and CO_2) by having simple 0-100% scales so incremental improvements in technology get automatically rewarded rather that the traditional bandings which result in developing to the lowest threshold point.

Finally we need a true technology neutral approach where perverse incentives don't exist (like Hydrogen and electricity paying no fuel duty but Biomethane does or assessment on Tank to wheel emissions and ignoring the fuel source impacts).

How does the Local Authority take this forward? Well the more forward thinking ones have been working with the likes of JouleVert to understand the options on their doorstep that Natural gas/Biomethane provides. By assessing the grid network and user profiling then cohesive Private Haulage, Bus Operator and Public Fleet opportunities to share a CNG station facility that brings instant volume fuel savings are in the pipeline.

Gas performs no matter how you drive it and at some 40% cheaper than diesel delivers on economics, CO_2, and Air Quality emissions with much less maintenance headaches. There are third party investors ready to build and operate the stations for the fleets so the fleets just buy 'through the nozzle' and can get on with what they are best at – running a vehicle efficiently and effectively. Government has finally given a leg up for Natural Gas with the 10 year duty differential freeze and with indigenous shale close at hand the medium term solution is there to be seized. Nobody ever got sacked for buying diesel was the old adage, that may not be the case in the future.