

Letter to the Editor

I don't share the enthusiasm – or the alarm – of Rich Jefferson's article on the outlook for vehicle electrification. I get it about not being a dinosaur, but we need to keep electrification in perspective.

Plug-in vehicles comprised 2.5% of the US passenger vehicle market last year. It was 3.1% in Europe and 5.5% in China – the "world's largest EV market". But the Chinese government halved the federal subsidy (and eliminated local subsidies) for EV buyers in June. The result – EV sales decreased for the first time. China has spent \$58 billion to subsidize the EV industry. How many countries can do that?

Vehicle electrification is a good thing. But it's too early to presuppose the demise of the internal combustion engine (ICE). The majority of electric vehicles will be hybrids, containing ICEs. Vehicle production last year was around 100 million units. It is forecast to reach 130 million in 2030. If less than 30% of the market is pure battery electric (BEV), more engines will be produced in 2030 than in 2019 – or in 1999.

Legislators only consider tailpipe emissions. But society should judge the life cycle. Do EVs really "win by a landslide"? Are EVs really cleaner "even when the electricity is produced by coal"? That result came from a biased study conducted by Transport & Environment in Europe. Jefferson rightly notes that the weight of an average ICE vehicle is 4,000 lbs. But Transport & Environment used a 2,650 lb micro car. They chose the best case – small cars have small batteries – and still they had to fudge it. They gave no credit for stop-start technology, and they attributed 163 grams of CO₂ per kilometer to the micro car, even though the fleet average in Europe is 120 g/km. Surely micro cars pollute less than the fleet average?

How about commercial vehicles? The average tractor weighs 15 tons, with a payload of 15 tons and 200 gallons of diesel. To get the equivalent of 200 gallons of diesel, you need more than 10 tons of batteries. As Scania said: "great if you're hauling potato chips". Diesel will continue to dominate heavy duty. If you're over 30 years old, you don't need to worry about it.

Development isn't easy. The timelines for battery density and price parity continue to be pushed out. Last month, Honda said that pure BEVs won't be viable before 2030; they'll focus on hybrids until then. GM said it will focus on BEVs and optimised ICE's and forget about the "stuff in the middle". ICE's still have a lot of life.

Nokia, Kodak and buggy makers? How about the lost billions that the Obama administration prematurely invested in battery making? How about Blue Indy, the EV company in Indianapolis that folded last month? Or Dyson, who stopped his EV venture because "you can't make a viable business case for electric vehicles." In business, it can be equally dangerous to be too eager too early.

The article quotes Benjamin Franklin's "*ounce of prevention is worth a pound of cure*". Another quote from American journalist H.L. Mencken comes to mind: "*For every complex problem, there is a solution that is clear, simple, and wrong*".

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