

Why ultra-light urban vehicles like Luvly offer the only viable future for electric cars

Electric cars are getting smaller - a lot smaller. Although the majority of U.S. cars now sold (namely SUVs and pickups) are reportedly the same size as WW2 tanks, a legion of light, sustainable vehicle manufacturers are helping accelerate the great downsize.

Temps de lecture : minute

26 January 2023

One of these is Stockholm-based Luvly, who make very cute, ultra-light vehicles for urban use. They call these 'LUVs', which they officially launched at the end of last year, and so I caught up with founder Håkan Lutz to discuss what makes them so luvly. We covered their community-centred approach, why they are the IKEA of car manufacturers - and what their light urban vehicle borrows from Formula 1.

Håkan begins by telling me that founding Luvly was 'a reaction to the brutal inefficiencies in the use of cars'. Indeed - driving large polluting vehicles at low speeds, for short distances around urban centres to commute, is not using these vehicles for what they are built for and increasingly at odds with a greener future.

Smaller cars, smaller egos

Unlike other electric car manufacturers, however, who might say something similar - Håkan is eager to zoom out and get at the root cause. 'We're on the brink of a potential catastrophe - and that's not

because cars are big, but because we have an intercommunal view of each other as competitors and not fellow citizens and human beings’.

What he’s getting at is the symbolic value of cars; something so ingrained that we often overlook it. Owning a car is both a practical decision as well as a wider statement about our identity – and this is what Luvly is trying to tackle. They don’t only want cars to get smaller, but egos as well: if we can collectively unlearn the car as such a prominent status symbol, perhaps we can downsize, right-size and economise. This is an ambition that goes much further than the current, mainstream transition to electric vehicles, which involves swapping the combustion engine for a similarly heavy battery. LUVs crucially require far less energy and cost to run and produce than a plug-in car. They are also a lot cheaper; a brand new LUV will set you back €10,000 – about the third of a Nissan Leaf, and less than a quarter of a new Tesla, even after the significant recent price reductions.

It is difficult to overemphasise the importance of the car to both the economy and society. The first Model T that rolled off Henry Ford’s production line at the beginning of the 20th century set in motion ‘mass culture’ – and brokered the connection between consumption and a notion of individualised freedom that defined Western society in the post WW2 years (often referred to as ‘Fordism’). By the 1950’s in the US, car production and ownership was not only widely understood as the driving force for the whole economy, but a promise: a promise of not just getting by – like previous generations – but of having autonomy and mobility.

With this in mind, Håkan’s own relationship with cars might not be what you expect. He tells me that ‘he loves cars’ and is a self-identifying ‘car freak’ – he won’t even tell me how many cars he owns, but emphasises this gives him an insight into just what cars can mean to people. Asked if he uses his cars, he wistfully replies: ‘I just look at them’.

For me, this is where Luvly gets interesting. They get cars – but they also get why they're bad. Håkan goes onto say that arguably 'Luvly are prolonging a private transportation system that may be obsolete' – the implication being that public transport should rule the roost, and that privately owned vehicles have no place in contemporary life, especially in urban areas. Håkan's point is therefore to allow cars to signify something different – not (in his own words) 'how big and strong I am', but the values of positive communal living, including consideration, temperance, and taking responsibility for your neighbours. (I think this is ambitious and to be applauded, but I involuntarily imagine Håkan as *Mr Incredible squeezed into his small vehicle*, having left his supercar days behind him).

The Luvly offering

So what did Luvly come up with? Well to start with, Håkan wants to differentiate his offering from a typical electric car, telling me 'when you look at the numbers, electric cars are really bad'. He points out that even if the tailpipe emissions are zero, the sheer weight of many EVs make the tyre emissions notable. Taking a holistic view of the emissions electric vehicles produce (production and use) – he makes the case you have to run an ICE car a long way before it starts polluting more than an electric car. (I skimmed the stats and the *typical break-even point in carbon emissions for EVs* was about 15,000 to 20,000 miles – possibly less than Håkan was suggesting; with LUVs, however, this is likely to be much higher)

One of the most impressive aspects of the Luvly's design relates to its relatively small emissions. Compared with electric cars, energy consumption from LUV production, shipping, and distribution is up to 80% lower. How do they achieve that? First off, all Luvly vehicle parts are recyclable and can be made from renewable materials. But crucially it's also got to do with their flatpicking distribution technique, and their ultra-light sandwich composites.

Luvly has patented a platform that simplifies the construction of 3D composite sandwich structures, enabling a more affordable means of production without compromising on the LUVs overall lightness and strength. LUVs weight under 400kg, with a top speed of 90kmh and range of 100km - check them out more [here](#).

These composite sandwich structures are nothing new, but their use in consumer vehicles is pretty innovative - they've been used to build Formula 1 cars in the 1980's, but it's only because Luvly has figured out a way of fixing them to the vehicle's load-bearing structures cheaply and efficiently that gave them the breakthrough. Interestingly, this chassis also affords a high degree of safety when driving a LUV - a consideration Håkan thinks has generally been neglected in the wider micromobility market. I tend to agree: most ultra-light EVs look like toys or [motorbikes with a roof](#).

Finally, the less glamorous but ever-important logistical innovation. For Luvly, this comes in the form of flat packing the cars when shipping them - another crucial area for saving on emissions, given they take up so little space. I foolishly asked if they arrive at your door and you assemble them as you would an IKEA sofa: obviously not, they are sent to local assembling centres from where they will be delivered to you.

We finish by looking forward, and I ask if cars will go the way of the subscription economy. Håkan concedes that 'it's an unavoidable development', but then we get into LUV's various use cases beyond consumers - last mile delivery, civic institutions etc. The future looks bright for Luvly, who also aim to be fundamentally flexible and customisable in their offering. How luvly.

