VanMoof Electrified X2 e-bike review: a shareable obsession

Electric bikes are expensive. The simplest pedal-assist bikes, the ones with unsightly bolt-on batteries, start at around $1,000 and quickly climb well above $3,000 once a little finesse is applied to the design.

But what if an e-bike could be shared with the entire family to help justify the cost?

Imagine the value you'd extract from an e-bike used as a daily commuter during the week, and then handed off on the weekend or evenings to a teen for her away soccer matches, or an aging grandparent longing for a ride through the park.

To do that, you'd need a bike with broad visual appeal and a frame that can accommodate riders of all sizes. Something like the $2,598 Electrified X2 from Dutch bike maker VanMoof, a miniature e-bike that I've been testing with three generations of riders.

9 Verge Score

Good Stuff

- Shareable
- Practically theft-proof
- Compact design is cool, not embarrassing
- Choice of manual or automated controls

Bad Stuff

- The price is going up soon
- Non-removable battery
- Second gear “slack”
- That electronic bell

First, a question: have you ever tried a pedal-assisted e-bike?

Sharing the Electrified X2 with first timers reminded me just how magical a pedal assisted e-bike can be for people that have never ridden one. It’s akin to the first time you put on a VR headset. It’s a gee-whiz moment you’ll never forget because you’ve just looked into the future.

The Electrified X2 (black) next to the full-sized Electrified S2 (white).

In Europe, particularly in bike-obsessed cultures like The Netherlands and Denmark, electric pedal-assisted bikes have for years been the domain of the aged. Big, ugly e-bikes have allowed our parents and grandparents to remain active for longer while also helping them maintain their independence. You can’t put a price on that.

Commuters are now discovering the benefits of electrified personal travel as well. The best options include $1,399 e-boards, $1,599 scooters, $3,000 e-bikes, or $7,000 electric Vespas. Each has its own advantages and disadvantages and laws governing performance and road use. The e-bike strikes a good balance of price, convenience, safety, comfort, range, and familiarity to most people.

Pedal-assisted e-bikes greatly extend the radius of what is normally considered bikeable, allowing riders to arrive at work sweat-free while also promoting a healthier planet and

person. Many e-bike commuters have been able to replace, or at least reduce their need for cars and public transportation helping to offset the cost of the bike.

Thanks to elderly buyers and now commuters, e-bike sales are booming in general, and specifically at VanMoof. In April, the company announced its most successful pre-order period in its ten-year history, selling more than 11,000 of its Electrified S2 and X2 city bikes worth over $33 million. Better yet, buyers are replacing their legacy modes of transportation. “Almost 70 percent of people who purchased the S2 & X2 are now using the Electrified as their primary mode of transport,” said VanMoof co-founder Ties Carlier in April.

Unfortunately, VanMoof’s pre-order period is coming to a close. The price for the Electrified X2 jumps from $2,598 / €2,598 to $3,398 / €3,398 on June 1st. For that much money it’d better be a damn good bike.

The Electrified X2, available in black or white, can accommodate riders as small as 5 feet (155 cm) or as tall as 6 feet 5 inches (200 cm). The compact X-frame design, popular in Asia, also features 24-inch wheels instead of the larger 28-inch ones found on most city bikes. The X2 is small, but not embarrassingly so like a Brompton, with its itty bitty wheels and comically long handlebars and saddle post. The VanMoof doesn’t fold like a Brompton bicycle, however. That could cost you if you’re planning to take the X2 on public transport where folding bikes are often allowed to be carried on for free.

A non-removable 504Wh battery is housed in the down tube, and can be removed by any bike shop when it needs replacing. The 250W motor is housed in the front-wheel hub, producing a max speed of 25 km/h (15.5 mph) for European riders, or 32 km/h

(22 mph) for the US. (Fortunately, anyone can select the faster US setting after swiping away a warning message.) The motor’s not silent, so you can’t fake your super-human speed: it’s a little louder than that latest generation of Bosch mid-drive motors, but not as loud as the Mate X. I wish it was quieter.

The bike’s brains are also designed to be serviced. Both the X2, and larger S2, feature a removable “Smart Cartridge” in the top tube, containing the printed circuit board, radios, display, controller, etc. That way if VanMoof can’t remotely repair your bike with a software tweak you can always detach the cartridge yourself and send it in without shipping the entire bike.

A very useful Boost button near the right grip can be pressed and held when you need an extra push off the starting line or up an incline. It’s addictive to use but will shorten your expected range. During my week of testing, using the boost button liberally and with the power set to its maximum 4 position, I was able to eke out about 60km (37 miles) per charge on mostly flat, but windy surfaces. VanMoof claims a range of 150km in eco mode, but that must be very tedious and slow. The battery on my test X2 fully charged in about four hours. It’ll charge from 0 to 50 percent in 80 minutes, says the company.

Although the battery’s not removable, the X2 easily fits through doors or into an elevator where it can be charged inside. The X2 is surprisingly heavy at nearly 42 pounds (19 kg); something to consider if you live in a five-story walk-up.

The Electrified X2 features a two-speed automatic transmission. I prefer it to 10-speed e-bikes, because shifting in a flat city like Amsterdam is a bore. I might feel differently if I lived in hilly San Francisco. What I don't like is the sensation of slack in the chain when the bike shifts into second gear at around 10 mph (17 km/h). If you stop peddling at that speed, or above, you're essentially freewheeling for about half-a-revolution of the crank before you feel resistance on the pedals again. It's unnerving at first, and annoying after that, but not as annoying as a 10-speed shifter would be if fitted to an X2.

Even with the motor off, I found the VanMoof surprisingly easy to propel forward with my leg strength alone, something that's good know if you ever run down your battery.

One of the trademark design flourishes of VanMoof bikes is the extended top tube with integrated front and rear lighting. It's still just as impressive on the X2 as it was on the company's first bikes from ten years ago. The front light produces 40 Lux (that's bright!) while the rear light is designed for a wide angle of visibility. The lights can be set to on, off, or automatic, with the latter being my set-it-and-forget-it preference.

The X2, like the Electrified S2, comes with a whole host of gadgety tech. Chief amongst them is the display, 166 LEDs seamlessly integrated right into the aluminum of the top tube. It's such a lovely piece of engineering that the display alone might persuade you to buy a VanMoof. It can be difficult to see in direct sunlight, but otherwise shows the bike's battery level, speed, and other useful data, in addition to whether

it’s locked or not.

The X2 features a built-in “Stealth Lock,” a locking pin that you kick to secure the rear wheel and arm the theft defense system (more on that later). The trick is to align the tick marks on the rear hub with the opposing tick mark on the chain-guard before giving the pin a kick. The display confirms the maneuver with a locking and power-off animation (and a sound if you’re anti-social enough to leave those turned on). It’s satisfying to kick the lock into place, but aligning things so that the hub assembly doesn’t block the locking pin can be fiddly.

Of course, Amsterdam isn’t like Tokyo, so I also carried a second chain lock (wrapped around the saddle post) to lock the X2 to a bike rack (tree trunk or lamp post) when not in use. Yes, I felt comfortable leaving it outside overnight because the X2 was designed to make thieves move on to easier targets.

For example, if someone jostles your X2 after the Stealth Lock is engaged, a sinister animated skull appears on the display, an alarm sounds, and the front and rear lights begin to flash. It sounds a bit gimmicky, and it does feel that way sometimes when you accidentally trigger the alarm on a crowded sidewalk, but theft protection is VanMoof’s calling card.

If movement continues for more than a minute, the alarm will sound continuously. If it’s not disarmed within two minutes the X2 goes into theft mode: S.O.S. appears on the display, the bike starts broadcasting its location to VanMoof, and the motor and all smart functionality is disabled. That’s when VanMoof’s Bike Hunters get involved.

You can sign up for VanMoof’s aptly named Peace of Mind service for €100 / $100 a year, or less if you commit to three years. If your bike is ever stolen, VanMoof’s Bike Hunters have two weeks to recover it else they’ll replace your bike for free. You can even request a loaner bike while the hunt is

on if you live nearby a VanMoof store in Amsterdam, Berlin, London, New York, Paris, Taipei, or Tokyo. In my opinion, VanMoof's theft protection goes a long way in making owners of the company's expensive e-bikes feel ok about leaving their bikes outside in cities where small apartments are the rule and organized bike theft is a scourge.

There's also a VanMoof app, for those who prefer to lock / unlock their bikes that way. I do not. Instead, I used the app to set all my preferences, and then used the Multifunction button next to the left hand-grip to unlock the X2. It's a pretty neat trick: you press and hold the button, wait for the beep, and then tap in your code. If it's 1-2-1, for example, you tap once, then twice, then once more. You then see a padlock open on the display and you have five seconds to roll the bike in order for the locking pin to release.

The app also has options that let you unlock the bike when you're nearby. It worked fine the few times I tested it. But personally, I don't trust Bluetooth for such an operation. The app also shows your bike's location, which can be helpful when searching for your bike in the massive bicycle parking structures dotted around some European cities.

The Multi-function button turns into a bell when the bike is unlocked. Unfortunately, it's a good idea executed poorly. It doesn't sound like the bells found on most city bikes – it sounds like a series of tones rather than a warning, and nobody reacts as a result. That can be dangerous for you and for those around you. If you buy a VanMoof you'll want to buy a mechanical bell too.

As a city bike, a carrier is critical for trips to the market and what not. The front carrier on the X2, is as compact as the bike itself. It's big enough to haul a small shoulder bag or rigid briefcase, for example, held in place with two bungees fitted with balls that slide into grooves at the back of the carrier. Fortunately, Vanmoof also sells two other

hauling options for the X2: an attractive $79 / €69 bamboo-clad basket capable of holding up to 22 pounds (10 kgs) of goods, or a rather dull, but likely more useful, $59 / €59 rear carrier capable of supporting 33 pounds (15 kgs).

Riding the X2 feels like riding a full-sized city bike. I did some long-distance testing with two riders: myself at 6 feet 0 inches (183cm), and my wife at 5 feet 4 inches (163 cm). We adjusted the seat using the VanMoof-supplied Allen key, but left the handlebar height unchanged (it can be raised with spacers). She tested it on her regular 22-mile (34-km) commute back and forth to work while I tested it on a couple of 18.6-mile (30-km) shots around town. The X2 put us in a relaxed, mostly upright biking position that requires a bit more forward lean than say a traditional “oma fiets” design. But it was still comfortable even after 40-minutes of non-stop riding.

My teenaged sons (the tallest measuring 6 feet 2 inches / 188 cm) probably enjoyed riding the X2 more than anyone. It was the effortless speed and visual design that hooked them. My 10-year-old daughter could pedal fine, but she wasn’t quite tall enough (4 feet 9 inches / 145 cm) to bring the bike to a gracefully stop. (She needs to grow another 3 inches, accordion to the X2 spec sheet.) She said the X2 was “nice” and asked if we could “keep it.”

I also gave the VanMoof to a 73-year-old grandmother with a bad knee. She loved it. She, like many Europeans over 65, already rides an electric bike, and has been for the past five

years. She was sold on the X2's looks, although she felt it was perhaps more suitable to a younger crowd. She was very surprised by how lightweight it felt to ride, remarking on it repeatedly, and how easy it was to roll in and out of her house compared to the five-year-old Victoria tank-of-an-electric bike she normally rides. She said she still prefers her full-sized e-bike though, because it "feels sturdier" and fits the two child seats needed for her grandkids – the X2 fits one. Yes, three-on-a-bike is not unusual in The Netherlands, even with septuagenarians at the handlebars.

I came away from my week of testing with a revelation. E-bikes should be shared. Why would I buy a "man's bike" with a straight top-tube that makes the bike too tall for half my family to ride, when I could buy a shorter x-frame bike that everyone can use. I grew up with a shared family car, so why not a shared family e-bike? Especially one that approaches the price of a used automobile.

The Electrified X2 is an extraordinarily impressive e-bike that's suitable for sharing thanks to its ability to accommodate such a vast range of rider heights. I thought I'd be put off by its relatively diminutive size, but in a big, densely congested city, its smaller size is a real advantage. And, for whatever it's worth, doesn't make me feel like a dork like I thought it might.

The X2 currently lists for $2,598 / €2,598 and is worth every bit of that in my opinion, especially for families, or any shared housing situation that can maximize its use. Yes, you can get cheaper pedal assisted e-bikes, but not with such sophisticated engineering, thoughtful design, long list of useful features, and proven commitment to service.

Unfortunately, the price jumps to $3,398 / €3,398 on June 1st. So if you've thought about buying a VanMoof Electrified X2, or its larger sibling, the S2, now is the time to do it.

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