Proposal: A Registered High-Performance EUC Class in Denmark

Version 1 · 14.11.2026
https://sikkereuc.dk/forslag

Draft for discussion. The latest version and the community's votes are at sikkereuc.dk/forslag.

Draft for EUC Danmark and Færdselsstyrelsen. Author: Awesome Framebuf.

Summary

Since 17 January 2019, electric unicycles (EUCs) have been legal in Denmark under the trial scheme for self-balancing vehicles (BEK nr. 41 of 14/01/2019), but only with a motor capped at 20 km/h. Modern EUCs are far more capable, and riders who use them for real transport have no legal option. We propose a new, registered EUC class, modelled on how the speed pedelec trial scheme and the 45 km/h moped class work: registered, insured, plated, and ridden only by licensed adults.

The safety argument: power is headroom

An EUC balances by driving its motor. When the rider brakes hard or accelerates, the motor must deliver extra torque to keep the wheel under the rider. If the motor runs out of power, the wheel cuts out or tips over, and the rider falls. This is the most common serious EUC crash.

This means a low-powered, hard-capped EUC is not automatically safer. A wheel with a strong motor running at a modest speed has large reserves for emergency braking and for correcting wobble. A weak wheel at its limit has none.

The proposal therefore separates two things:

- The vehicle's capability: a minimum motor power, suggested at 3,000 W nominal, so the wheel always has a safety margin.
- The rider's legal speed: set by law and enforced like for any other road user, with speeding tickets for riders who exceed it.

Proposed rules for the class

- Rider: at least 18 years old. We propose a dedicated EUC certificate; whether the certificate, a driving licence or both are required is decided by community vote (see Rider requirements). Like the drone certificate, this is a special licence just for EUCs, not a car or motorbike licence. It requires a course on a closed, safe practice area covering emergency braking, wobble handling, seated riding, and riding in rain, darkness and other conditions, ending with a practical test.
- Registration: registered with Motorstyrelsen and fitted with a white number plate.
- Insurance: mandatory liability insurance, as for mopeds, covering damage to other people and property. Riders are encouraged to add accident insurance covering their own injuries, since most EUC falls only hurt the rider. We will invite Danish insurers to develop an EUC product, with lower premiums for certified riders, using the campaign's ride and incident data.
- Equipment: a fitted seat, front and rear lights, brake light, mandatory blinking turn indicators, a plate holder, and two warning signals: a loud electric horn for road traffic, so cars and others hear you in an emergency, and a softer bell for forests and paths, to warn walkers, dogs and animals without scaring them.

- Helmet: mandatory. We suggest a moped-approved helmet rather than only a cycle helmet. The helmet must also carry turn indicators and a brake light, linked to the wheel, because lights low on the wheel are hard for car drivers to see. Head height puts them in drivers' line of sight.
- Vehicle spec: minimum 3,000 W nominal motor power, with stated power and top speed shown on a type label for police checks.
- Legal speed: 45 km/h is only a starting suggestion. The community votes on the final road speed (30, 35, 40, 45, 50, 55, 60, 65, 70, 75 or 80 km/h), since an EUC is not a moped and can safely go faster. Whatever is chosen is enforced through ordinary speeding rules.
- Where to ride: on normal roads, not on cycle paths. Never on motorways (motorveje) or motor roads (motortrafikveje). Further road rules are proposed and voted on by the community.

Why a trial scheme

The 2019 trial schemes show that Denmark can legalise new vehicle types quickly when there is a clear proposal and public demand. A time-limited trial with data collection lets Færdselsstyrelsen evaluate crash rates and enforcement before anything becomes permanent.

What we ask for

1. That Færdselsstyrelsen and the Folketing's Transport Committee consider a trial scheme for a registered EUC class along the lines above.
2. A meeting with EUC Danmark to present riding demonstrations and safety data.
3. A clear answer on which requirements a vehicle and rider must meet to take part.

Open points for the group

- Should the legal speed start at 45 km/h, or should we argue for a higher tier straight away?
- Is 3,000 W the right minimum, or should it be tied to rider weight?
- Who in EUC Danmark wants to sign and join meetings?
- What should the legal road speed be? The site will hold a vote.
- Open suggestions box: anyone can propose a rule, everyone can see all suggestions and vote them up or down. The most supported suggestions go into the final proposal.
- Should the EUC certificate replace the driving licence requirement, or come on top of it?

Evidence: why more power means more safety

The core mechanic: a cutout happens when the wheel can no longer provide enough torque to keep balancing (555 EUCRiders). Reserve motor torque shrinks quickly as speed rises, which is why riders get thrown forward when they push a wheel near its limit (Electric Unicycle Forum). Modern, powerful wheels make overtorque cutouts extremely rare: a small modern wheel can climb a 40-degree incline with ease (Roger Fingas, Medium).

The same principle in other vehicles:

- Emergency braking: on an EUC, braking is done by the motor. A stronger motor can brake harder without losing balance, just like better brakes on a car.
- Hills and heavy riders: a weak motor runs near its limit on a slope or with a heavy rider, leaving nothing for a sudden stop.
- Overtaking and traffic: in road traffic, the ability to accelerate out of danger is a known safety factor for motorcycles. A vehicle that can't keep up with traffic gets overtaken closely.
- Wobble: speed wobble is corrected by the motor responding quickly. Reserve power gives faster, firmer correction.

Video evidence: rider video on wobble, seated riding and powerful wheels. First entry for the site's video gallery.

An analogy for decision makers: a car with a 200 hp engine driven at 50 km/h is not more dangerous than one with 60 hp. It is safer, because it has reserves. The speed limit is set by law, not by the engine.

Open question: we have found rider-community sources and mechanical explanations, but no peer-reviewed crash studies yet. We should ask EUC Danmark members for ride logs and crash data, and look for academic studies before sending.

Video: https://www.youtube.com/watch?v=cepL_2-DMXU

Danish post for EUC Danmark

Hej alle! Jeg arbejder på et forslag til Færdselsstyrelsen og Folketingets Transportudvalg om en ny, registreret EUC-klasse i Danmark.

Idéen: EUC'er med nummerplade, forsikring, sæde, lys, blinklys og hjelm med blinklys og bremselys, så bilisterne kan se os i øjenhøjde, for kørere over 18 år med kørekort. Lovlig hastighed på 45 km/t som start, håndhævet med almindelige fartbøder.

Det vigtigste argument er sikkerhed, ikke fart. En EUC balancerer med motoren. Når motoren løber tør for kraft, sker der en cutout, og man ryger af. En kraftig motor (fx minimum 3.000 W) giver reserver til nødbremsning og til at rette wobble op. Det er ligesom en bil: en stærk motor ved 50 km/t er ikke farligere, den har bare reserver.

I dag er EUC'er kun lovlige op til 20 km/t i forsøgsordningen fra 2019. Det gør de kraftige, sikre hjul ulovlige.

Vil du være med? Skriv i kommentarerne, hvis du vil skrive under, deltage i møder, eller har data fra dine ture eller uheld, vi kan bruge. Jo flere vi er, jo stærkere står vi!

Road or cycle path: community vote

Denmark already treats 45 km/h vehicles two ways. A 45 km/h moped may not use cycle paths (scooterforsikring.dk). A speed pedelec, legally also a 45 km/h moped, must use the cycle path where one exists under its trial scheme (elcykeltest.dk). The community votes between three options:

1. Road only, like a 45 km/h moped. Simple to enforce, but puts riders among cars in city traffic.
2. Cycle path required where one exists, like speed pedelecs. Has a precedent, but busy city paths can be crowded.
3. Hybrid (rider's choice): cycle paths at a capped speed (for example 25 or 30 km/h) and the road at full class speed. Most flexible; the challenge is enforcing the lower cap on cycle paths.

Nature and forest riding

An EUC is not a car: it is light, quiet and can be ridden slowly on paths. Certified riders should therefore have two modes:

- Road mode: registered class rules, up to 45 km/h, on the road like a moped.
- Nature mode: the same rules as mountain bikes. Riding on forest roads and paved or gravel paths, and on marked MTB tracks where the landowner allows it, such as in state forests. No fixed speed limit, but speed must suit the conditions with special care for others' safety, as the traffic act requires in forests too. Below 10 km/h when passing walkers, dogs, horses or animals.

Tyres must suit the terrain: approved road tyres for road mode, and road or all-terrain tyres that do not damage paths in nature mode. Off-road tracks only where the landowner allows it.

Plate mounting

The plate belongs on the vehicle, not the rider: a plate on a helmet or vest moves with the person, so police could not link it to a specific registered wheel. Suggested solution: a small moped-size plate on a rigid bracket at the back of the seat, facing backwards, mounted above the wheel's own rear light so it never covers it. The seat mount follows the wheel as it leans, stays clear of the rider's legs, and can be a standard bracket made for each popular model. The helmet carries the extra indicators and brake light, not the plate.

Community vote: plate and rider ID. Option A: plate on the wheel only, with the personal EUC certificate checked like a driving licence. Option B: plate on the wheel plus a personal rider number on the back protector or helmet, linked to the certificate, for example as a flexible, bendable plate. Lending a plated wheel to someone without a certificate is illegal in both options, just as with a car.

Protective gear

Riding in road mode at class speeds requires full protection: a full-face helmet, a back protector, knee pads, elbow pads, wrist guards and sturdy closed shoes. No riding in shorts and sandals. The community votes on whether nature mode needs the same kit or a lighter set.

Review from four angles

Politicians. Strong: safety-first framing, certificate, insurance, plates, no motorways, real community data. Needs work: speeds above 45 km/h will meet resistance; EU type approval rules make national registration difficult, so we need a clear route for approving each wheel model; who runs and pays for the certificate course.

Non-riding Danes. Strong: helmet lights, indicators, horn and bell, slowing for walkers and dogs, riders paying for insurance. Needs work: fear of fast vehicles on cycle paths. Any cycle path option must show how children and older cyclists stay safe.

EUC riders. Strong: legal speed, nature riding, a vote on the rules. Needs work: cost and effort of seat, plate, course and insurance may put off casual riders. Suggested answer: a two-tier system, where uncertified riders keep today's 20 km/h trial scheme rules.

Police. Strong: plates identify riders; a type label shows motor power and top speed. Needs work: speed rules must be checkable. A lower cap on cycle paths needs a tamper-proof speed mode or ride log in the firmware. Plate position must be standard (see Plate mounting).

Biggest open questions: the type approval route, the two-tier system, and speed enforcement.

Foreign riders and visitors

In several countries, such as Germany, riding an EUC on public roads is not allowed at all, and riding without the required insurance can be a criminal offence. A Danish class can become a model for other countries.

- Residents from abroad: can take the full EUC certificate and register a wheel like anyone living in Denmark.
- Visitor permit: a short course (half a day to one day) at an approved training site, covering the Danish rules, emergency braking and a practical test. It gives a temporary EUC permit, for example valid up to 3 months.
- Temporary plate and insurance: visitors get a temporary plate and short-term liability insurance, sold with the course, so every wheel on Danish roads is identifiable and insured.
- International data: visitors and riders worldwide can join the site, vote (counted separately from Danish voters) and add their data and reports, giving the proposal a larger evidence base.

Only Danish-eligible voters count toward the borgerforslag and the Danish vote results. International riders are counted separately and add evidence, not votes. The site says this clearly.

Worldwide community strategy

The Danish proposal is the pilot; riders worldwide supply the evidence.

- Ride log import: riders upload trip data exported from apps like EUC World and WheelLog (distance, speed, power use, alarms). This gives millions of real kilometres and shows how often wheels run near their power limit.

- Global incident database: one shared wobble and incident form in several languages, with open, anonymised data anyone can use.
- Country ambassadors: a lead ambassador and optional co-ambassadors per country link local Facebook groups, forums and clubs, translates updates and shares the campaign.
- Manufacturers and shops: ask wheel makers and dealers to share safety data, support the seat and plate bracket standard, and promote the campaign.
- "Kilometres for Denmark": a yearly worldwide ride event where logged kilometres are added to the database and shared online.
- Template for other countries: once Denmark adopts a class, the full proposal, data and site are offered as an open template other countries can copy.

Why Denmark is the right place

Denmark is known as a cycling nation with careful, strict traffic rules, and it has legalised new vehicles step by step through trial schemes before: speed pedelecs from 1 July 2018 and e-scooters, self-balancing vehicles and electric skateboards from 17 January 2019. A strict, data-driven Danish model is credible: if it works here, other countries can trust it.

Precedents: how Denmark has done this before

Denmark legalises new vehicles step by step: a trial scheme first, then rules adjusted from the data. The EUC class would follow the same path.

Date	Step
1 July 2018	Trial scheme for speed pedelecs (45 km/h e-bikes) on cycle paths
October 2018	Shared e-scooters appear in Copenhagen and are removed within days because they are illegal
December 2018	Parliament changes the traffic act to allow trial schemes for small electric vehicles
17 January 2019	Trial schemes start for e-scooters, self-balancing vehicles (including EUCs) and electric skateboards, max 20 km/h
1 January 2022	Helmet becomes mandatory on these vehicles
Next	Trial scheme for a registered, certified EUC class

Roadmap

Each phase starts when the previous goal is reached, not on a fixed date.

Phase	What happens	Goal to move on
1. Launch	sikkereuc.dk goes live with the draft, voting, rider registry and wobble reports	Site live and shared in EUC Danmark

Phase	What happens	Goal to move on
2. Community	Riders vote on each point, upload videos and reports, group rides and help map grow	500 registered riders and 100 incident or wobble reports
3. Final proposal	Proposal rewritten from the votes and data, certificate course outlined	Majority support on each point
4. Partners	Approach insurers, driving schools for the course, and MPs on the Transport Committee	At least one insurer interested
5. Political ally	A party or MP promises in advance to table the proposal once it has 50,000 supporters	Written commitment from at least one party
6. Pledges	Pledge list grows: supporters, opponents and estimated reach	50,000+ confirmed pledges from Danish voters
7. Borgerforslag submitted	Proposal created on borgerforslag.dk and everyone emailed at once; the 180-day clock starts	Proposal published
8. 50,000 supporters	Campaign gathers MitID support	50,000 supporters within 180 days
9. Folketing	Tabled as a beslutningsforslag, handled by the Transport Committee, voted on (or ended with a report, beretning)	Proposal adopted
10. Trial scheme	Ministry and Færdselsstyrelsen write the rules; certificate course starts; first registered wheels	Trial scheme in force
11. Evaluation and permanent law	Trial data evaluated; class made permanent	Permanent EUC class

Target numbers in phases 2 and 4 are starting suggestions for the community to adjust.

Sources

- 555 EUCRiders: EUC risks and margins
- Electric Unicycle Forum: What is a cutout
- Roger Fingas: Beginner's guide to EUCs
- Færdselsstyrelsen: self-balancing vehicles trial scheme