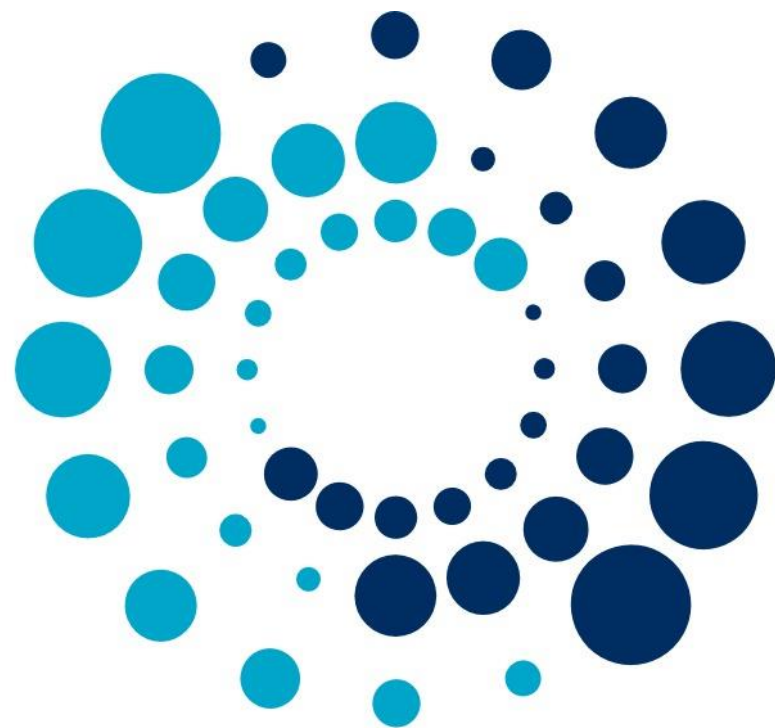




Jarmo Mättnikov
Ott Männik
Kaasasutajad

EasyHybrid

Team

- **Jarmo Mättnikov** – 15 aastat kogemust auto- ja transpordisektoris. Elektri- ja hübriidsõidukite pooldaja ning propageerija.
- **Meelis Merilo** – Süsteemiinsener. 15 aastat kogemust elektrisõidukite ehitamisel.
- **Jörg-Kristjan Vält** - Hübriidsõidukite mehaanikainsener. Kogemused inseneerias- ja autohoolduses.
- **Ott Männik** – Isesõitvate autode tarkvarainsener. Kogemused inseneerias ja tarkvara alal.



Probleem

- Kütusekulu ja heitgaasid.
- Euroopa linnade piirangud diiselautodele.
- Palju vanu sõidukeid, millele piirangud kehtivad.

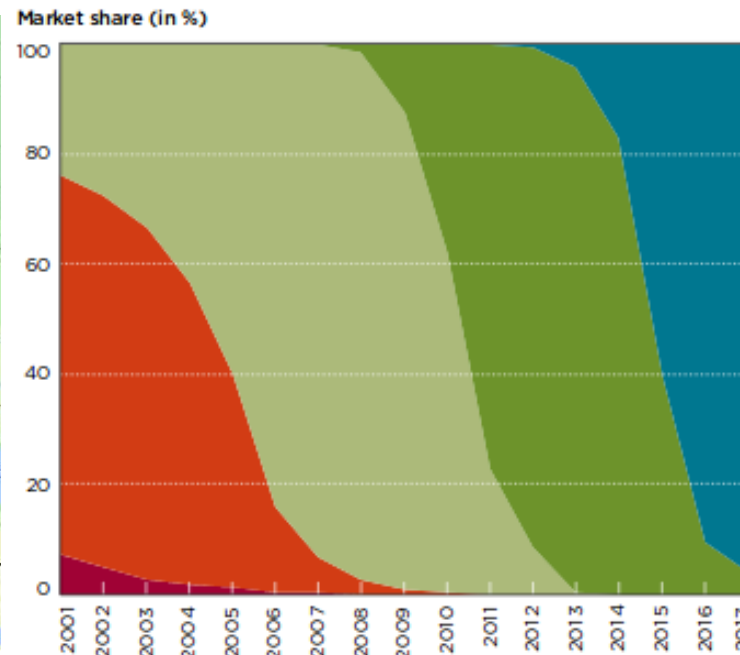


Fig. 6-1

Passenger cars:
Market share
emission standards



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Probleem

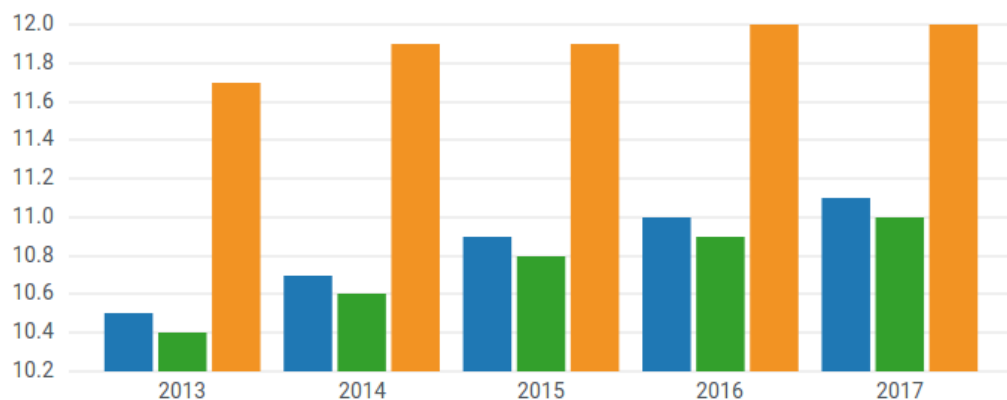
- Keskmiselt on Euroopas 11 aastat vanad autod.
- Kokku on sõidukeid 308 miljonit.

The EU motor vehicle fleet is getting older year-on-year. Passenger cars are now on average 11.1 years old, vans 11 years and heavy commercial vehicles 12 years.

Average age of the EU fleet by vehicle type

In years | 2013 – 2017

■ Passenger cars ■ Light commercial vehicles ■ Heavy commercial vehicles



Created with LocalFocus

Source: IHS Markit

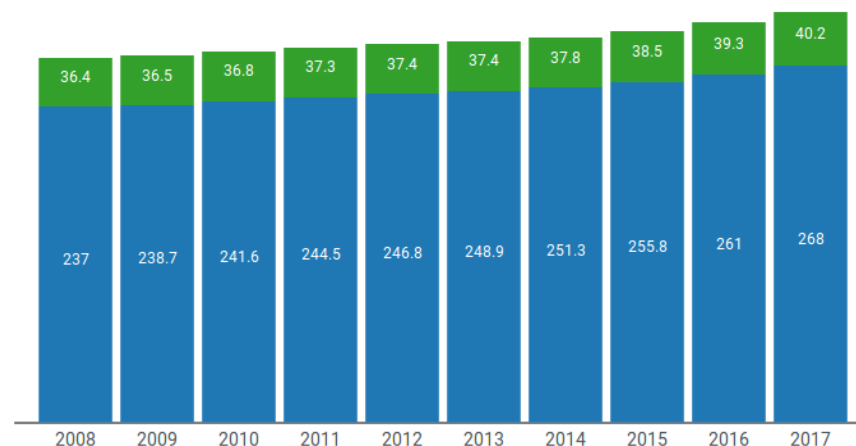


The European Union's motor vehicle fleet counts 268 million passenger cars and more than 40 million commercial vehicles.

EU vehicle fleet: size and distribution

In million units | 2008-2017

■ Passenger cars ■ Commercial vehicles



Created with LocalFocus

Source: EUROSTAT, IHS MARKIT



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WHO – World Health Organization



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



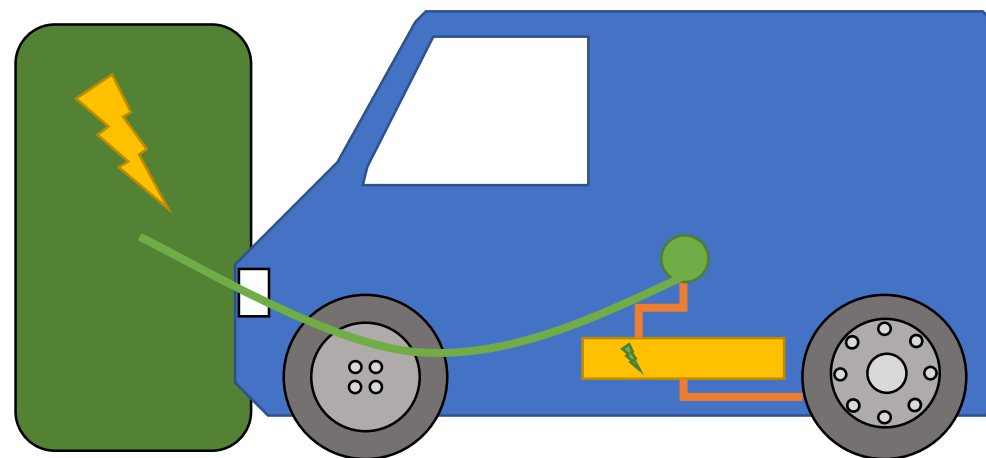
- „In 2017, worldwide material consumption reached **92.1 billion tons**, up from 87 billion in 2015 and a **254 per cent increase** from 27 billion in 1970, with the rate of extraction accelerating every year since 2000. This reflects the increased demand for natural resources that has defined the past decades, resulting in undue burden on environmental resources. Without urgent and concerted political action, it is projected that global resource extraction could grow to 190 billion tons by 2060.
- “



EasyHybrid lahendus

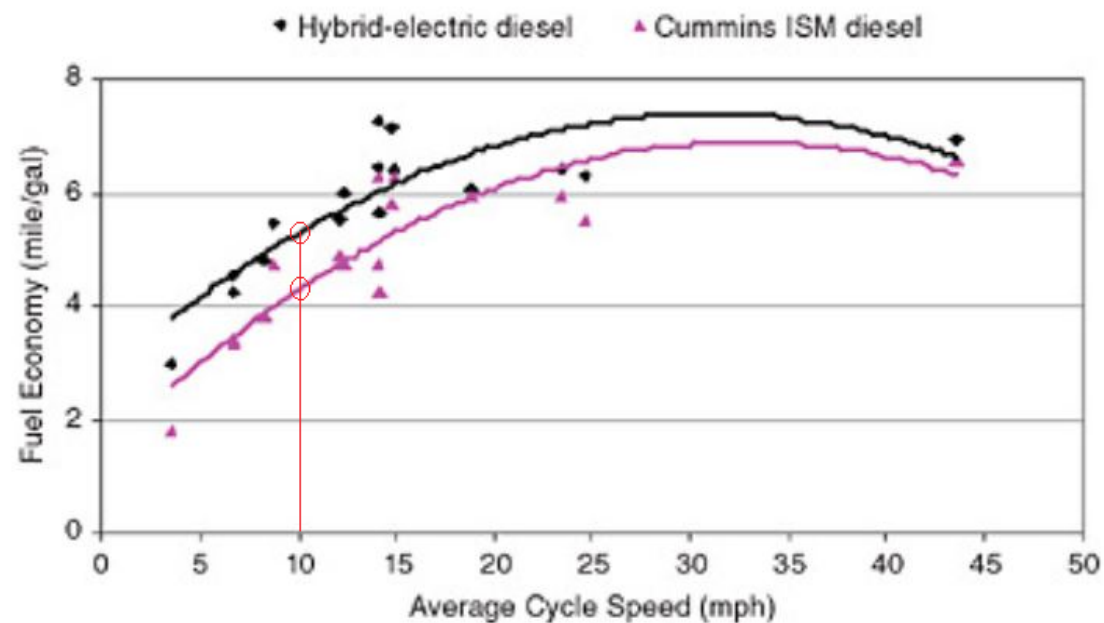
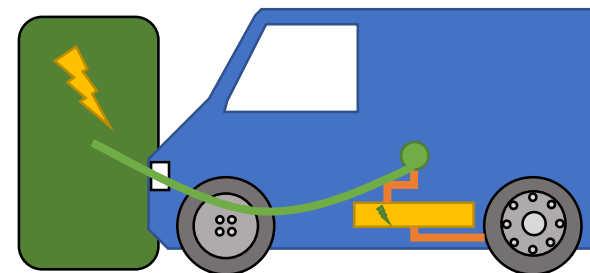
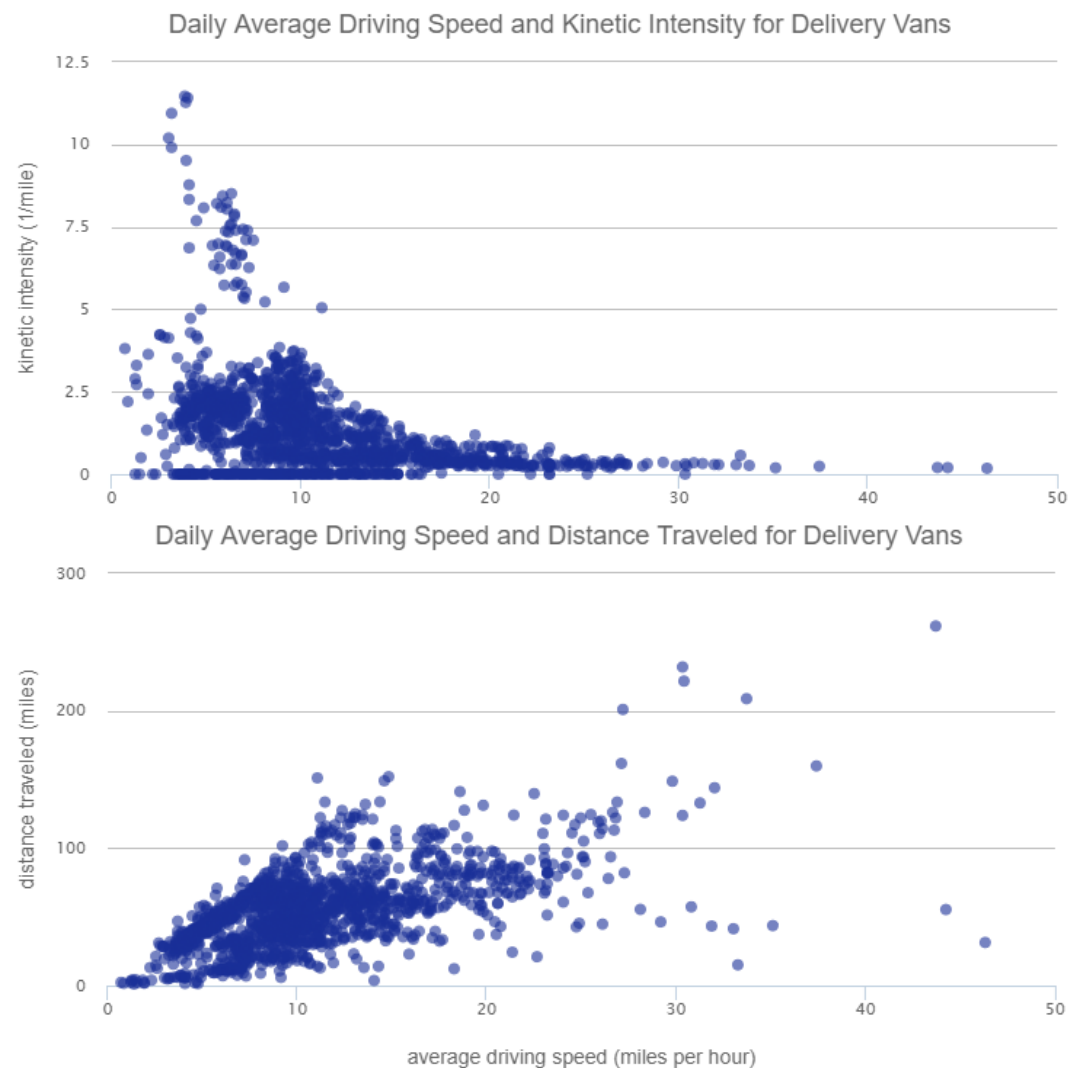
Rummumootoriga Plug-In Hübrid

- Vähendab kütusekulu kuni 30%.
- Saab paigaldada pea igale sõidukile.
- Vähendab heitgaase.
- Pidurdusenergia taaskasutus.
- Pikendab sõiduki eluiga.



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EasyHybrid lahendus - vajalikkus



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EasyHybrid sõidukipargi näitel

- Hübriidina kütusekulu vähenemine kuni 30%.
- Vähenenud heitgaasid.
- *Green image*

Table 1. Acceptable values of individual exhaust components in Euro standards (compression ignition, car category: M).

Standard	CO [g/km]	PM [g/km]	NO _x + THC [g/km]
EURO-1	3.16	0.14	0.70
EURO-2	1.00	0.08	0.56
EURO-3	0.64	0.05	0.30
EURO-4	0.50	0.009	0.23
EURO-5	0.50	0.005	0.70
EURO-6	0.50	0.0045	0.56



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Boonused sõidukipargile

- Sõidukipark muutub 4-veoliseks.
- Pidurdades saab energiat taaskasutada.
- Võimalus lisada päikesepaneele.
- Mittesõitvad sõidukid saavad kallima elektrihinna ajal elektrit võrku tagasi müüa.
- Potentsiaalsed maksusoodustused.



EasyHybrid preagu

2018 Kevad

- 2. Koht Volkswagen Startup Competitionil

2019 Sügis-
Talv

- Investorite otsimine

2020 Suvi

- Prototüüp valmis

2020 Sügis

- Prototüübi testimine ja valideerimine



EasyHybrid

Täname!



EasyHybrid