

ASECAP DAYS



ISTANBUL 2023

Celebrating
50 YEARS
OF Successful
TOLL ROAD PROJECTS

ROAD USER CHARGING (RUC) TODAY AND TOMORROW

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Kapsch TrafficCom

Hosted by

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YAVUZ SULTAN SELIM BRIDGE
AND
NORTHERN RING MOTORWAY



The future of RUC

01

Why RUC?

Explains the grounds, why RUC's importance is growing.

02

How we see RUC today.

Conditions to be met on the way to implement the RUC.

03

How we see it tomorrow.

Countries and environment, where the RUC has the best potential.

Where RUC falls

RUC is not a toll. RUC is replacement of a shortfall in taxes levied on fossil fuels.

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What we see in the media today

Electric car sales see major rise in Belgium

Thursday, 20 April 2023



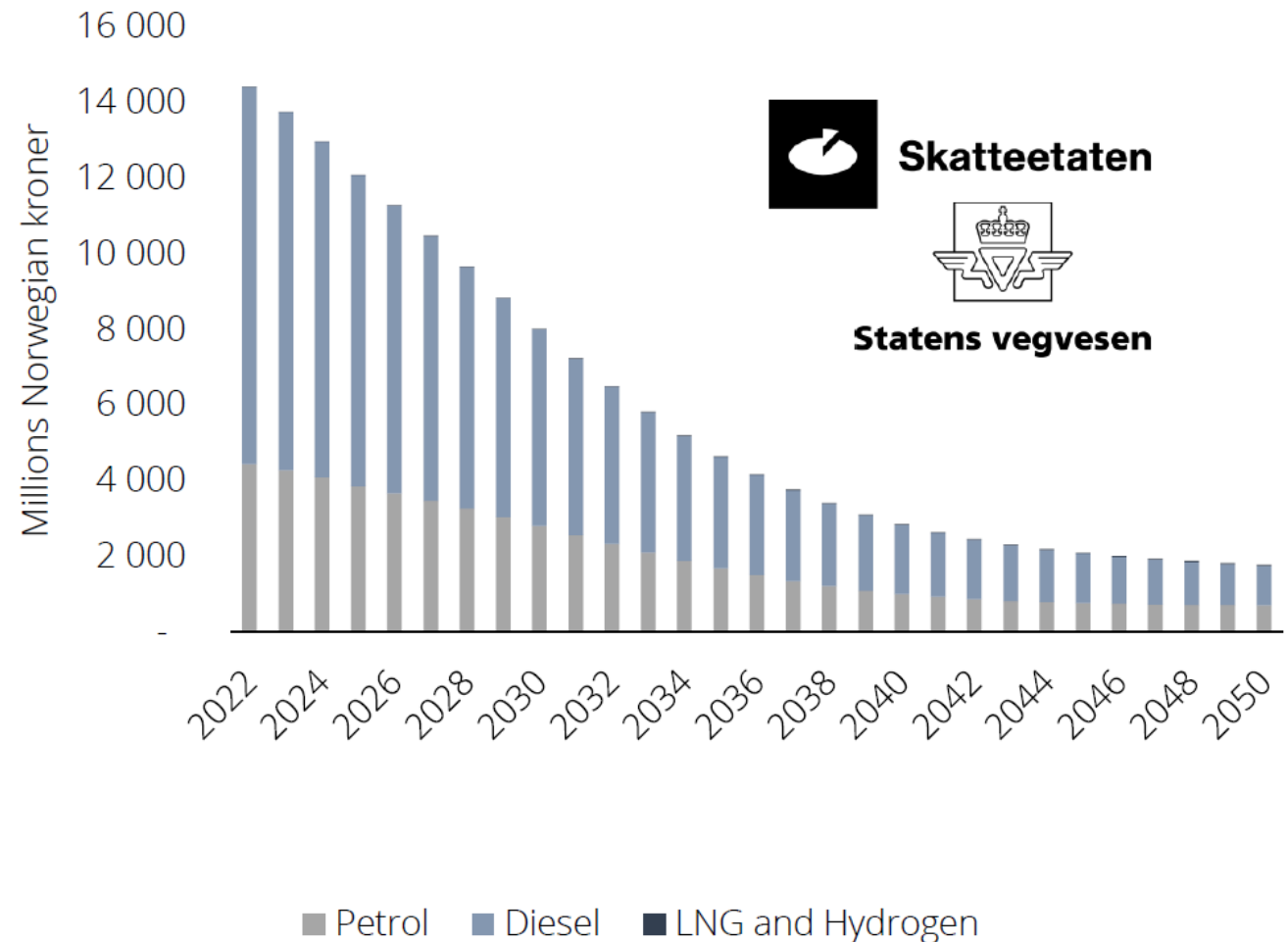
Credit: Michael Fousert on Unsplash

Electric cars as a proportion of newly-registered vehicles in Belgium is increasing rapidly. Accounting for almost one in three new vehicles in 2022, this has since risen to nearly four in ten in the first quarter of 2023.

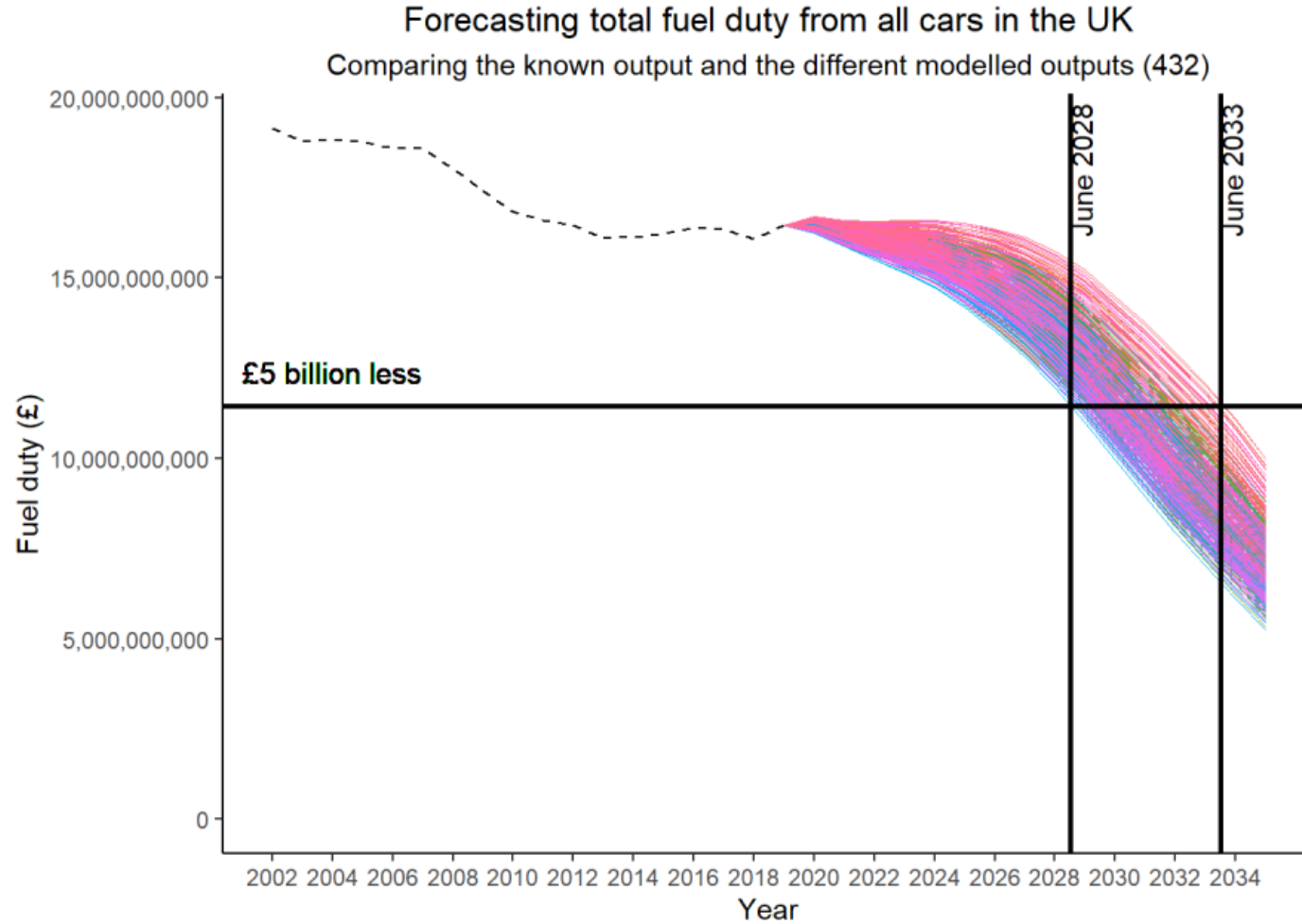
Conditions indicating the necessity of RUC

- Rise in sales of electric vehicles (e.g. in Norway more than 80% of new cars are EVs)
- Sales increase in fuel economy (hybrid) cars
- EU plans a ban on combustion engine vehicle sales from 2035
- State budgets are facing massive gaps in fuel excise collection

Fuel excise receipts shortfall in Norway



Fuel duty decline in the UK



*RAC Foundation, Doreen Lam, 2022

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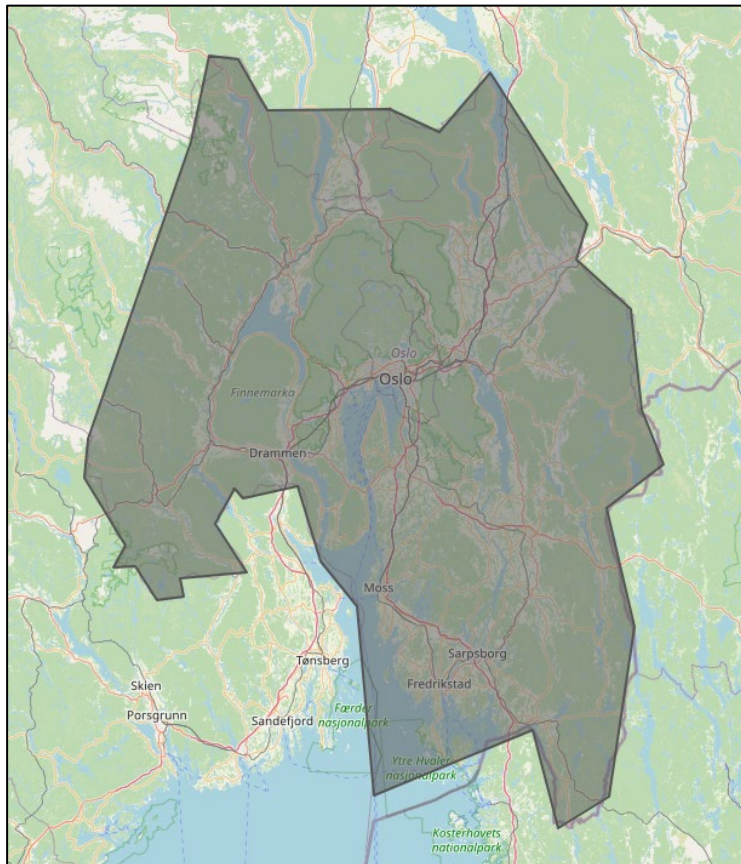
Where we are now

- RUC will be achieved in a phased approach
- RUC and toll collection will be separated from the start (legislation, technologies, ...etc.)
- A coordinated launch is preferred (e.g. device based or driven distance reporting for some time period, vehicle categories & tariffs)
- Combustion engine vehicles will likely pay fuel excise until their end
- Today, the technology is ready, unlike state authorities and public



Kapsch and our partners launched a RUC PoC in Norway in July 2022






JuztDrive



- Hardware agnostic android application for smartphones and tablets
- Deployed and tested throughout the greater Oslo area
- Mixture of real world and simulated vehicles over a period of four months
- Variable road user charges based on driven distance according to vehicle and road classification
- Account creation and user consent within the app

Our RUC solution was tested against real world conditions

Facts and figures:

-  >250 million positions matched
-  Stress tested against various challenging scenarios (lack of cellular reception, old/low quality devices etc.)
-  Precise and reliable in dense urban area with many long and complicated tunnels
-  Matched >2 million kilometres
-  GNSS location and associated data provided by approximately 15 different smartphone and tablet models

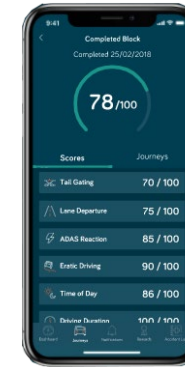


Present movement towards existing and non-traditional tolling (GNSS) devices

Dedicated tolling device



Smartphone



Telematics OBD dongle



Smart digital tachograph



Telematics black box

- We expect more and more domains to migrate to a centralised map matching and rating set-up, which could expand the use of third party devices
- Smartphones could become the short term device for light vehicle data generation and trip reporting

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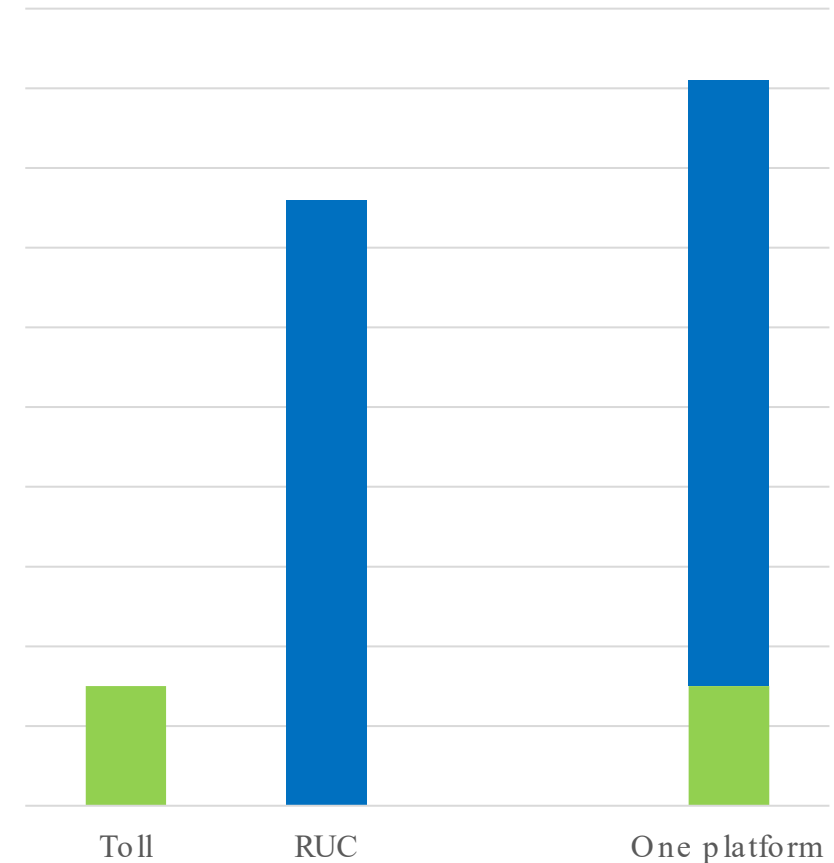
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What could we expect?

- As a last phase, RUC and toll collection will merge into one platform, but will be differentiated in billing
- RUC will be collected for all vehicles (with an alternative propulsion) at any road they will drive as fuel excise replacement
- Tolls will be collected on strategic roads determined by the road authorities
- Clean air zones, low emission zones and congestion charges could be part of the same technology platform

RUC and toll development



What could we expect?



- RUC collection should be revenue neutral and should not increase a tax burden on individuals when compared to present status
- All fees must be acceptable and thoroughly addressed to public, otherwise fuel excise and toll collection will be repelled
- New RUC fees shall differ according to the EV category (weight, size, power consumption in kWh/100km...etc)
- Transparent RUC vehicle categorization (pure EV, extended range EV, hybrid EV...)

THANK YOU

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