

Kas man jāzina par nākotnes mobilitāti?

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Moller Baltic
Import



Moller Baltic

Import

part of **Moller** Mobility Group 



Commercial
Vehicles



27 locations across Baltic States

- 18 Volkswagen Full Function Dealers
- 5 Volkswagen Service Partners
- 5 Audi Dealers
- 1 Audi Service Partner
- 5 Multi-brand Partners with other Volkswagen Group Brands



Topics

1. Why switching from ICE?
2. RAW materials – where and HOW does it start?
3. Life cycle analysis – breakeven point
4. Where do batteries end up afterwards
5. Questions & answers



An aerial photograph of a dramatic, winding mountain road carved into a steep, rocky cliffside. The road features several tight, hairpin turns and is bordered by a low stone wall. The surrounding landscape is rugged and mountainous, with patches of green vegetation. A blue vertical bar is positioned on the left side of the image, partially overlapping the text.

1. Why switching from ICE?



»» Where are we coming from?



	Golf 3	Golf 5	Golf 7
Displacement	1390 cm ³	1390 cm ³	1395 cm ³
Power	44 kW (60hp) /4700	90 kW (122hp) at 5000/min	92 kW (125hp) /5000-6000
Torque at 1/min	116 Nm / 2800-3200	200 Nm with 1500-4000/min	200 Nm at 1500-4000/min
Consumption (l/100km, combined)	6.8 l	5.9 l	5.2 l
CO₂-Emission (combined)	163 g/km	139 g/km	116 g/km
European emission standard	3	5	6

Systematic transition to e-mobility

Relating to Audi models for the global market



2025

Production start of the last new combustion engine model



2033

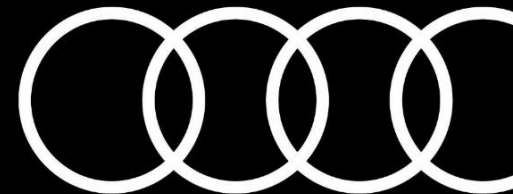
Production of combustion engines discontinues*



From 2026

Newly presented Audi models are exclusively electric models

*China is an exception



Why switching from ICE?

Responsibility is the answer



Sustainability targets by
EU

VOLKSWAGEN
GROUP

Sustainability goals from
OEM's

Möller
Mobility Group

MMG sustainability
and climate strategy



Child labour, forced labour, slavery

Disregard for occupational health and safety

Disregard for freedom of association

Unequal treatment in employment

The contracting/ use of private/ use of public Security forces in violation of human rights

Deprivation of decent wages

Non-environmental handling, collection, storage, disposal of waste

Production and use of persistent organic pollutants [Stockholm Convention]

Manufacture and use of mercury added products [Minamata Convention]

Export and import of hazardous waste [Basel Convention]

Harmful pollution of soil, water, air, noise emissions, and excessive water consumption

Unlawful eviction of land, forests and waters

Decarbonization

50.4% reduction targeted in production-related CO₂ emissions by 2030.

PRODUCTION

USE

END-OF-LIFE PHASE & OTHER

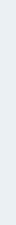
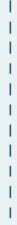
SUPPLY CHAIN

IN-HOUSE

FUEL SUPPLY

TAILPIPE
EMISSIONS

RECYCLING & OTHER



What is the electric vehicle?

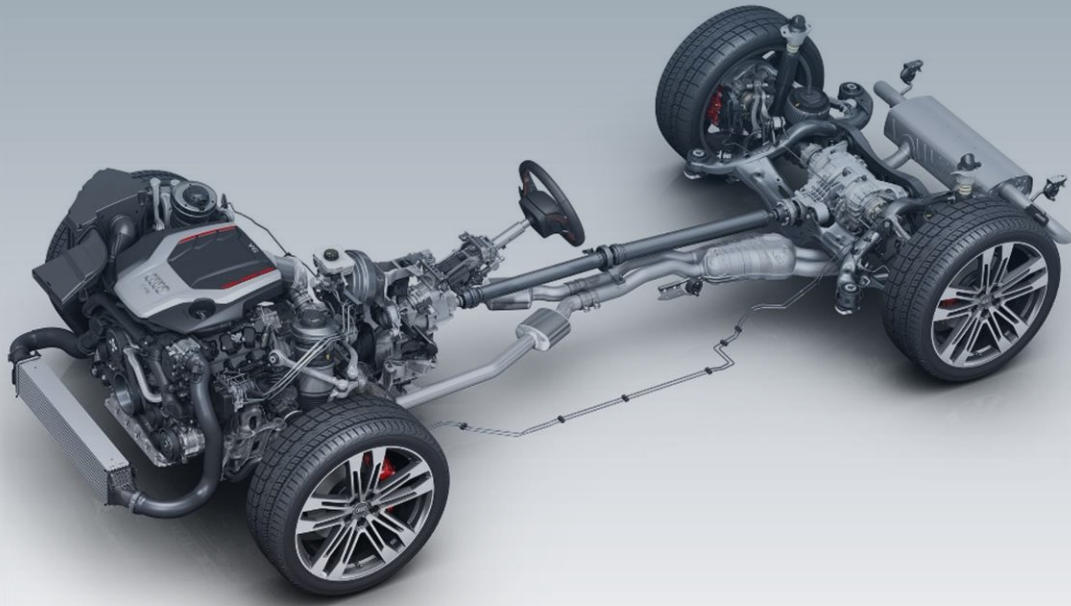




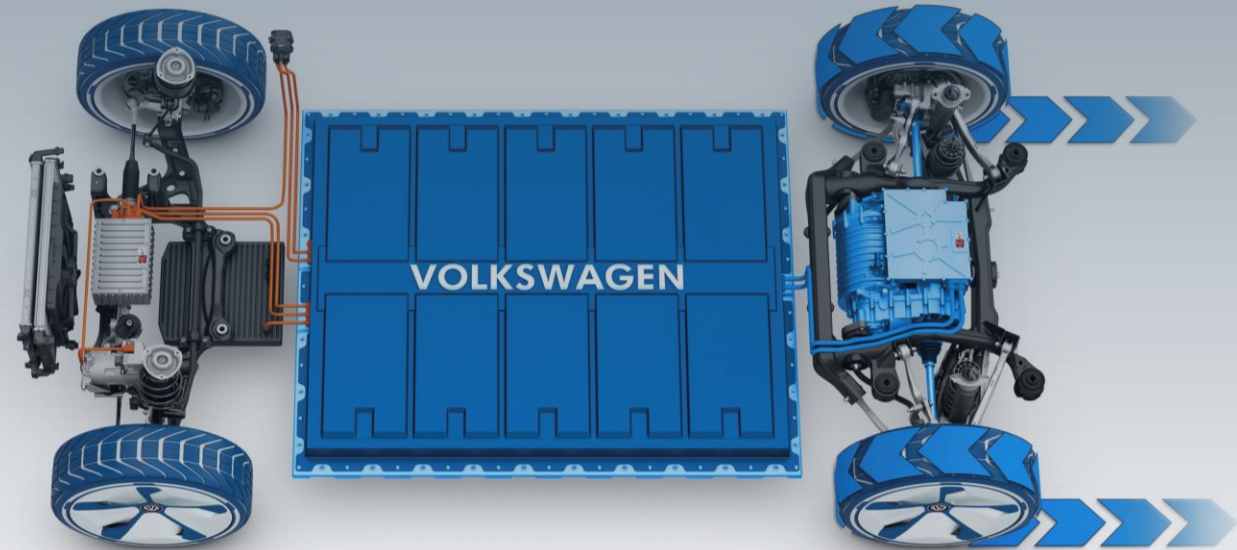
What is the electric vehicle?

If we compare it to a combustion [ICE] vehicle.

Average ICE powertrain
1400 components

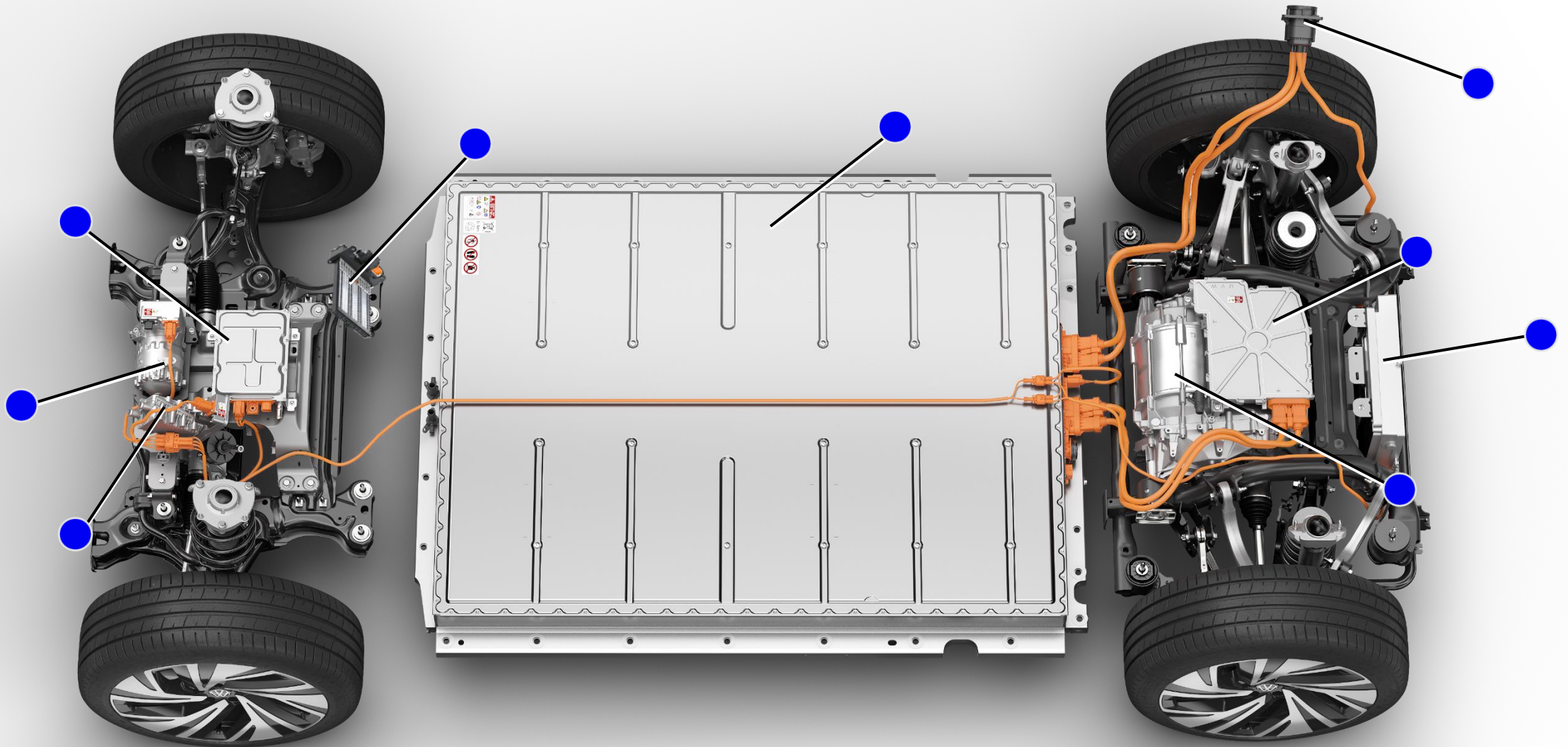


Average BEV powertrain
200 components





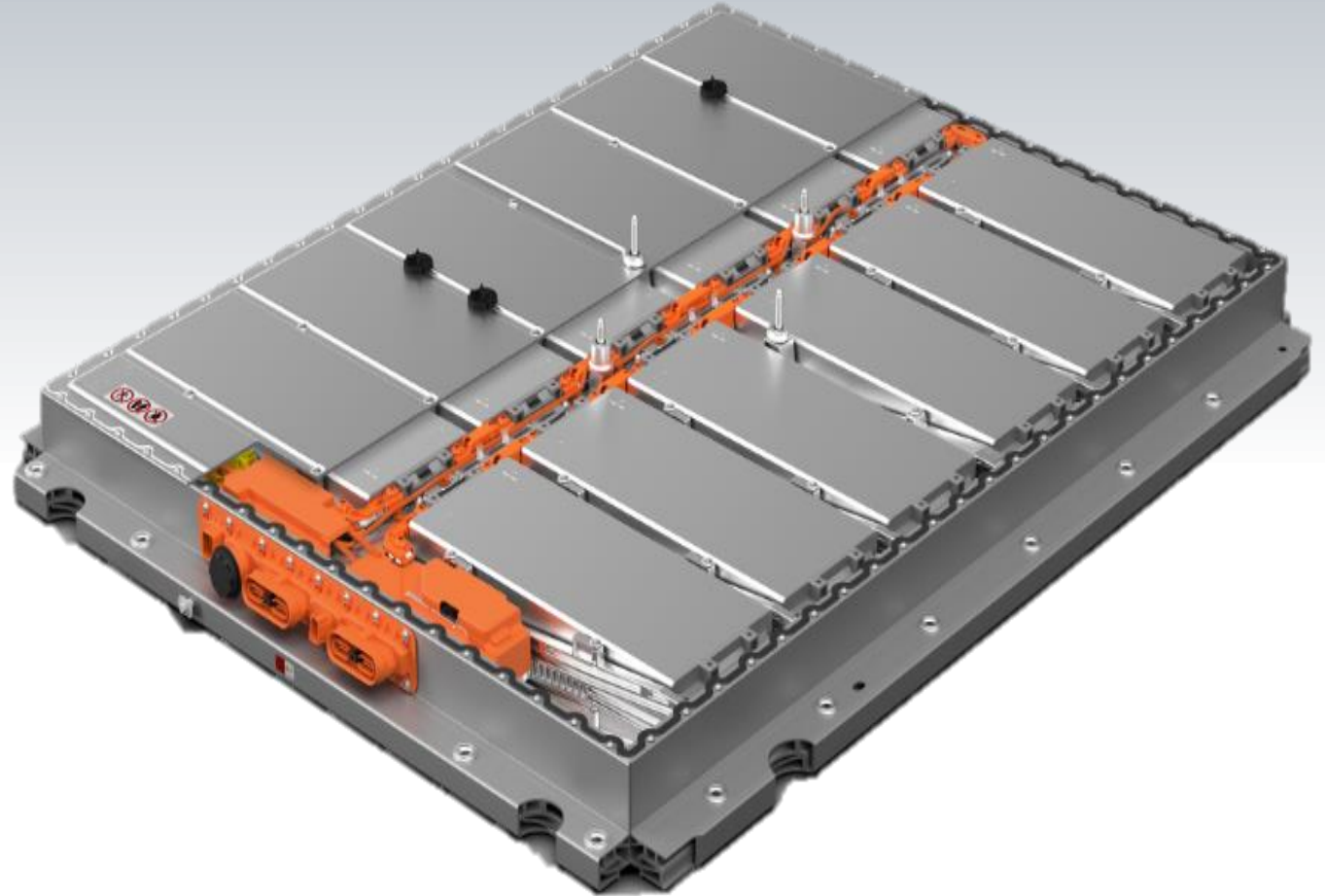
Overview of the HV system | MEB vehicle





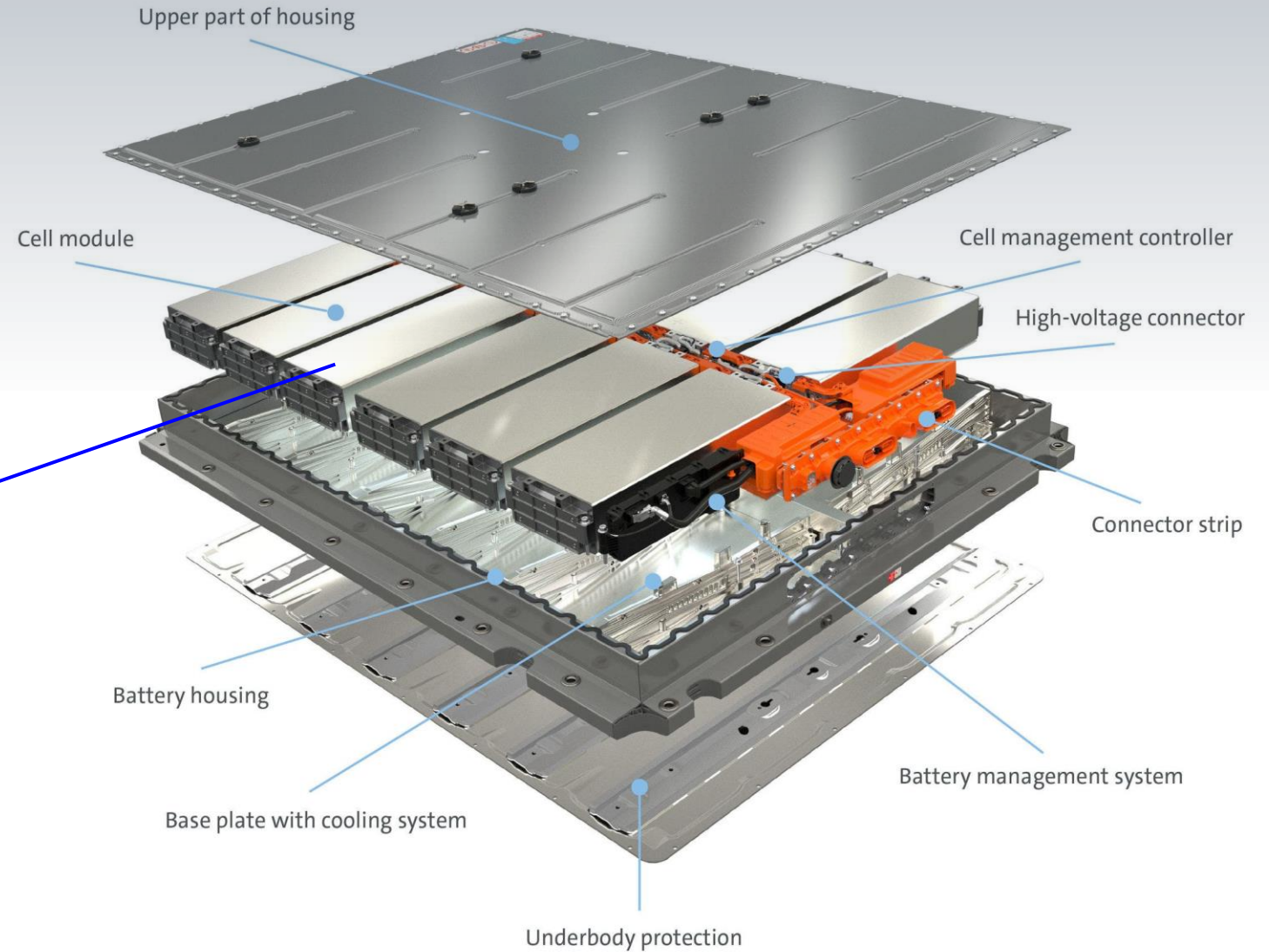
Modular battery

- Variable battery capacity
- High-power, high-energy density
- 100% repair level
- Highest level of safety
- 8 year / 160 000 km warranty
 - SoH >70% of initial capacity
- Fast high-power charging





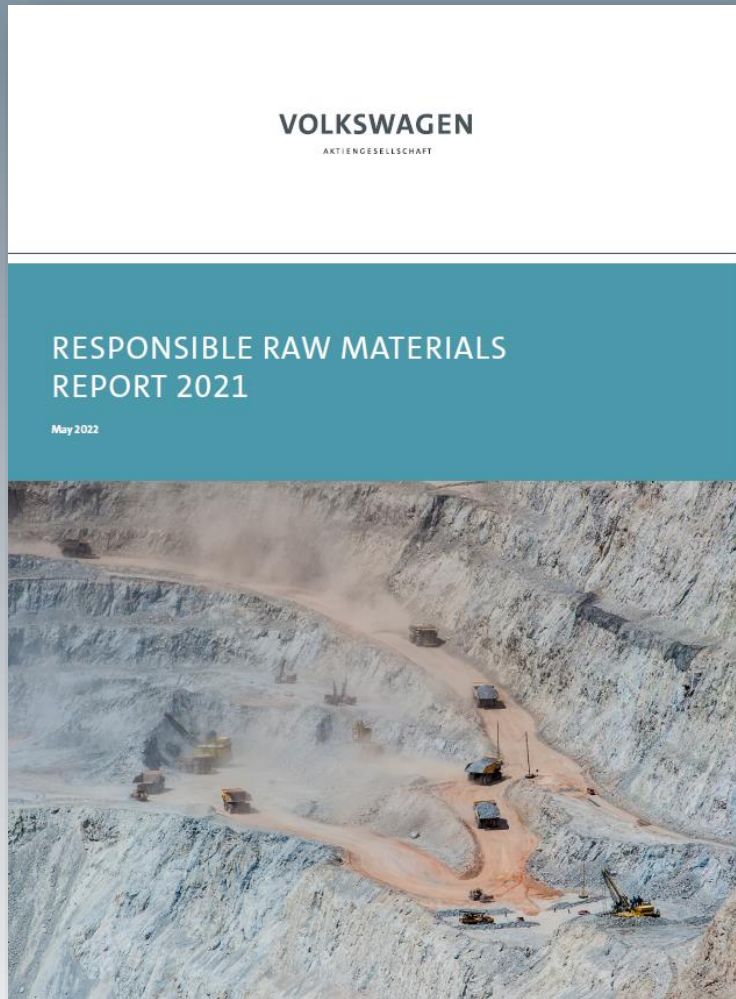
What's inside the housing?





2. RAW materials where and HOW does it start?

RAW material awareness



NICKEL

Ni
NICKEL

KEY APPLICATION

HV battery

OUR APPROACH: RISK IDENTIFICATION AND RISK ASSESSMENT RESULTS

The Volkswagen Group does not source any of the battery raw materials – lithium, cobalt, nickel or graphite – directly. Therefore, we work closely with battery cell producers to engage with the upstream sector, increase supply chain transparency and make sure that battery raw minerals are produced and sourced responsibly. Since 2020, we have incorporated binding requirements into all new battery supply contracts to disclose upstream information up to the mine. In 2021, we continued our direct engagement with battery cell producers to collect this data through supply chain mapping questionnaires, analyze and assess it to identify responsible sourcing risks.

Through media screening and review of sector studies, we are monitoring nickel-specific risks in the world's leading nickel producing countries, such as Brazil, China, Guatemala, Indonesia, Madagascar, Papua New Guinea and Russia.

We identified the following countries of origin in our nickel supply chain: Australia, Canada, Finland, Indonesia, New Caledonia and Papua New Guinea.

KEY MATERIAL-SPECIFIC RISKS

Child Labor	Modern Slavery	Systematic or widespread human rights abuses	Human rights abuses committed by public or private security forces	Support to non-state armed groups or public or private security forces	Risks to workers' occupational health and safety	Adverse environmental impacts	Infringement on labor rights	Discrimination and harassment	Threats to indigenous peoples and communities

VOLKSWAGEN

AKTIENGESELLSCHAFT

Nickel is one of the critical raw materials covered in the Drive Sustainability Raw Material Outlook, which provides data for risk identification and assessment of the material in our supply chains. In 2021, we began reviewing this data and will continue to assess it in 2022.

RISK MITIGATION ACTIONS TAKEN: FACTS AND FIGURES

We have been in direct dialogue with several major nickel mining companies and conducted 3 sustainability workshops to assess these companies' readiness against our responsible sourcing requirements. Our partners have been open to cooperation and information sharing, showing a high level of risk awareness and a good understanding of responsible sourcing topics. Resulting from our extensive risk assessment on nickel tailings treatment as well as deep sea mining, the Volkswagen Group as well as Scania have joined the Pledge against Deep Sea Mining in 2021. For more information, please see **Box 5** in this report or visit **No Deep Seabed Mining**.

OUTLOOK 2022

In 2022, we will continue implementing and expanding our supply chain mapping and audit program in close cooperation with our major battery suppliers. As new members of IRMA, we plan to progressively apply the standard within our EV battery supply chain throughout 2022.

Battery cell production



Volkswagen enters global battery business with “PowerCo”



Volkswagen Group and PowerCo SE launch site search for first gigafactory in North America



Sustainable and Affordable Batteries: PowerCo Develops „Gamechanger“ Technology for Cell Production



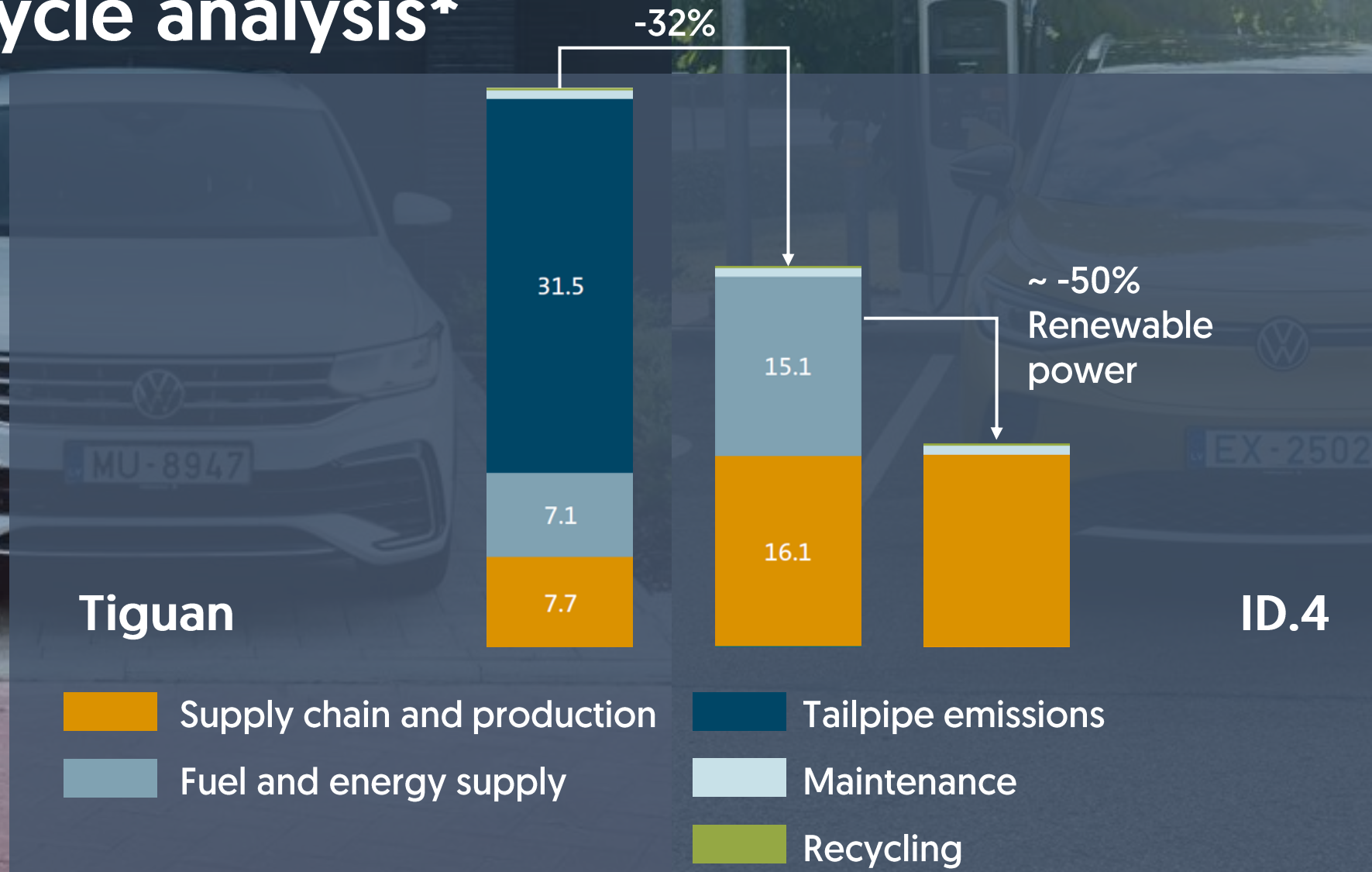
Batteries: deal on new EU rules for design, production and waste treatment

- Batteries to be easier to remove and replace
- Compulsory “digital battery passport”
- Consumer awareness
- Phase out of non-rechargeable portable batteries of general use by 2031
- According to the deal, a carbon footprint declaration and label will be obligatory for EV batteries

3. Life cycle analysis breakeven point



Life cycle analysis*



* Vehicle basis: Tiguan & ID.4: Production and use (200,000 km) in Europe; ID.4 (1st Edition): 498 km range; fuel and electricity supply (well to tank): EU fuels, energy mix EU27, consumption (tank to wheel): WLTP; BEV: 82 kWh NMC 622 lithium ion battery, one battery over lifetime; chart data quality: DQ 1.D = certified value.

4. Where do batteries end up afterwards



2nd life solutions

Audi charging hub in Nuremberg

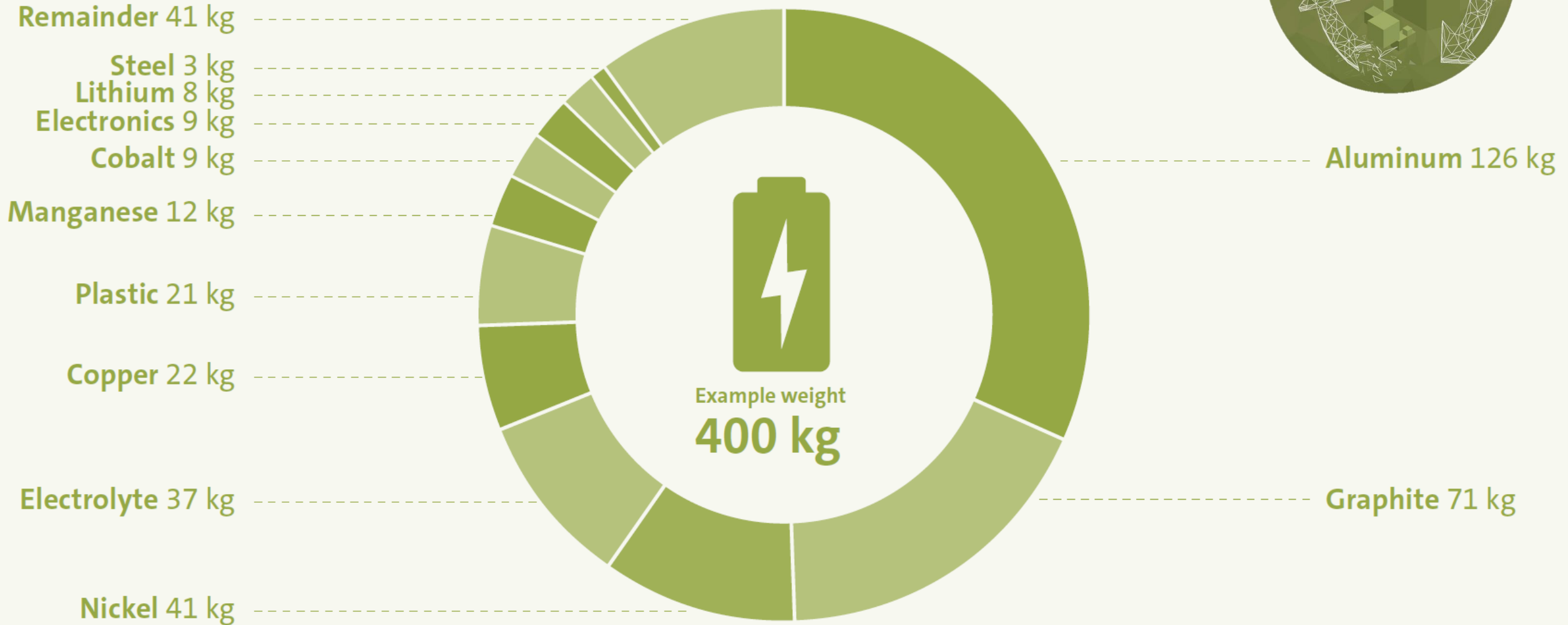


2nd life solutions

Volkswagen DC power-bank



Valuable materials in a battery

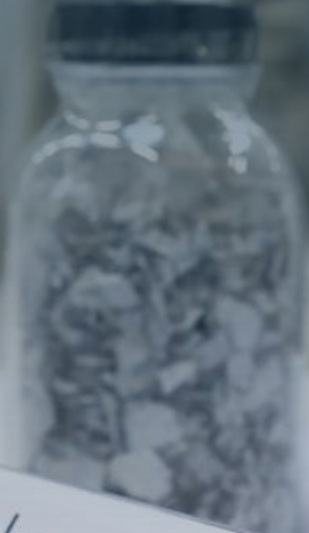


Recycling

Aluminium & Kupfer



Schwarzes Pulver
Kobalt - Lithium - Nickel - Mangan



Kunststoff



Is it always better to go for 2nd life solution?

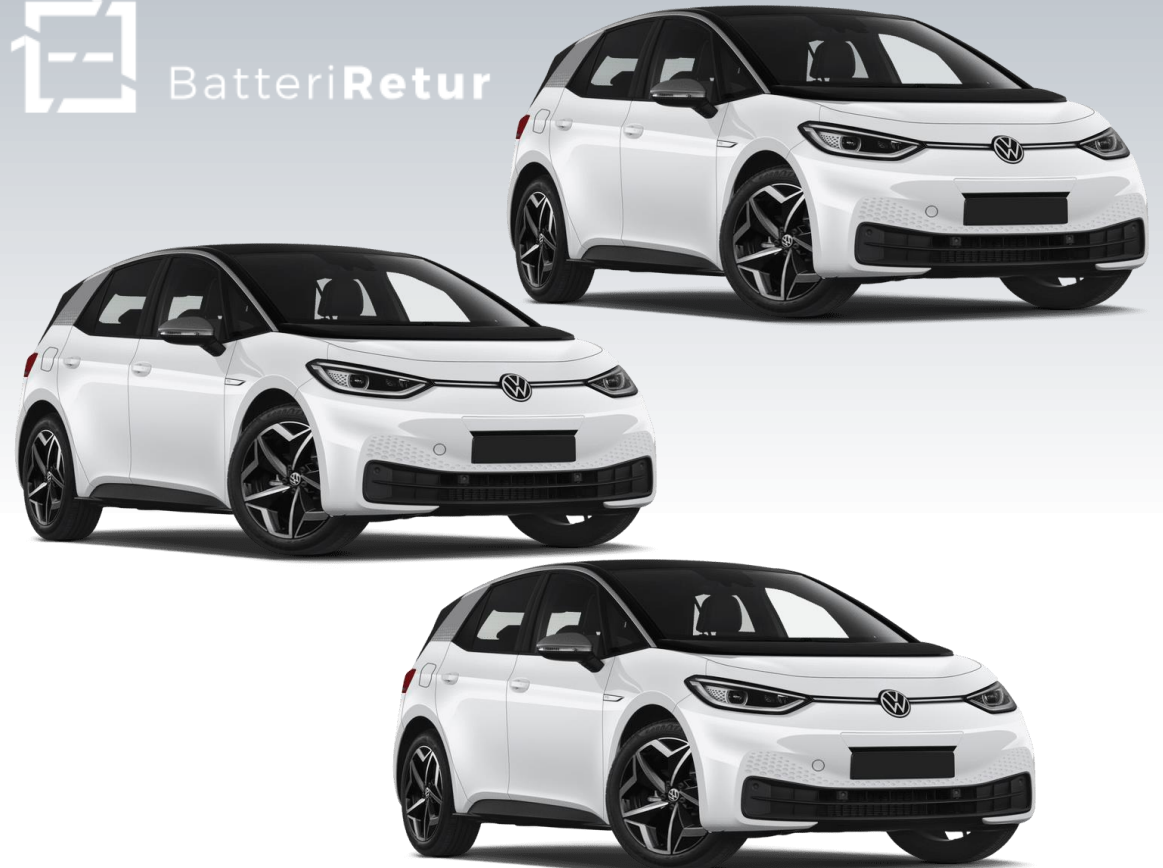
Brutto capacity - 35,8 kWh



Brutto capacity - 55 kWh



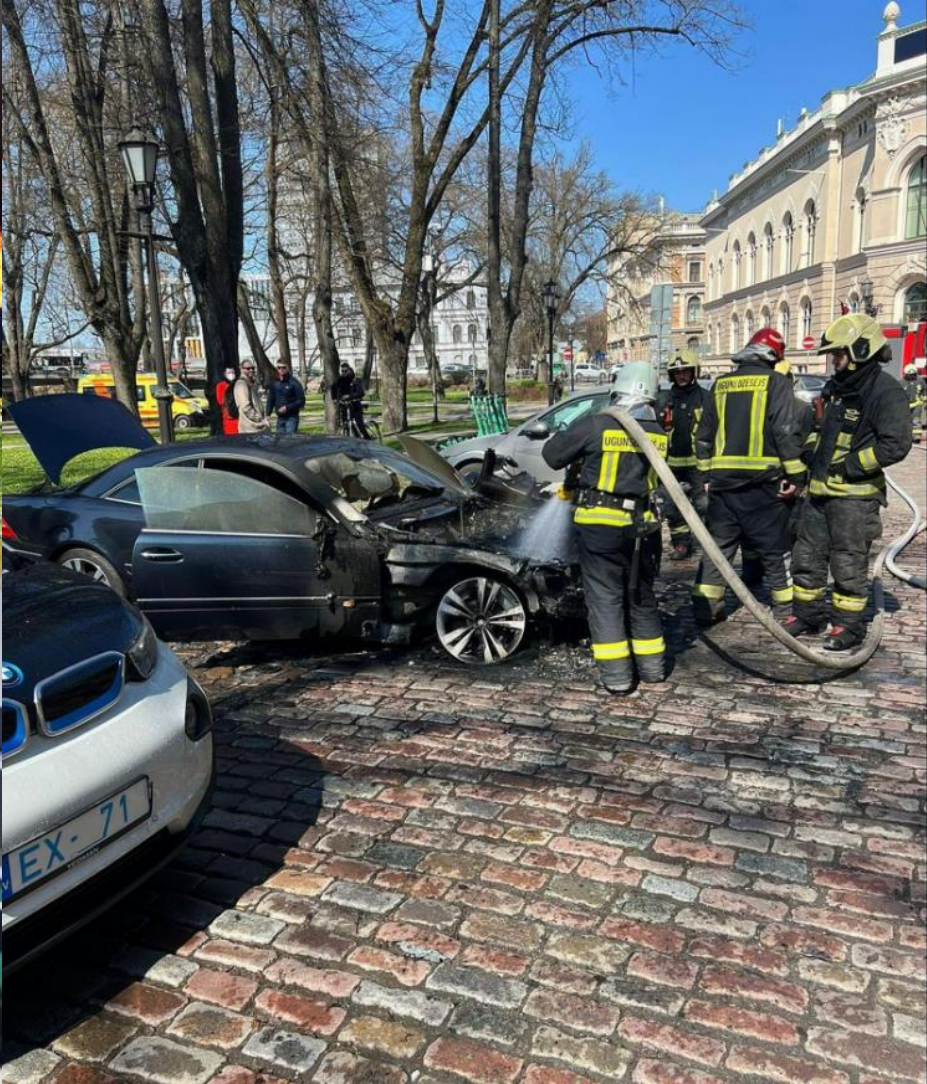
BatteriRetur



5. Questions & answers

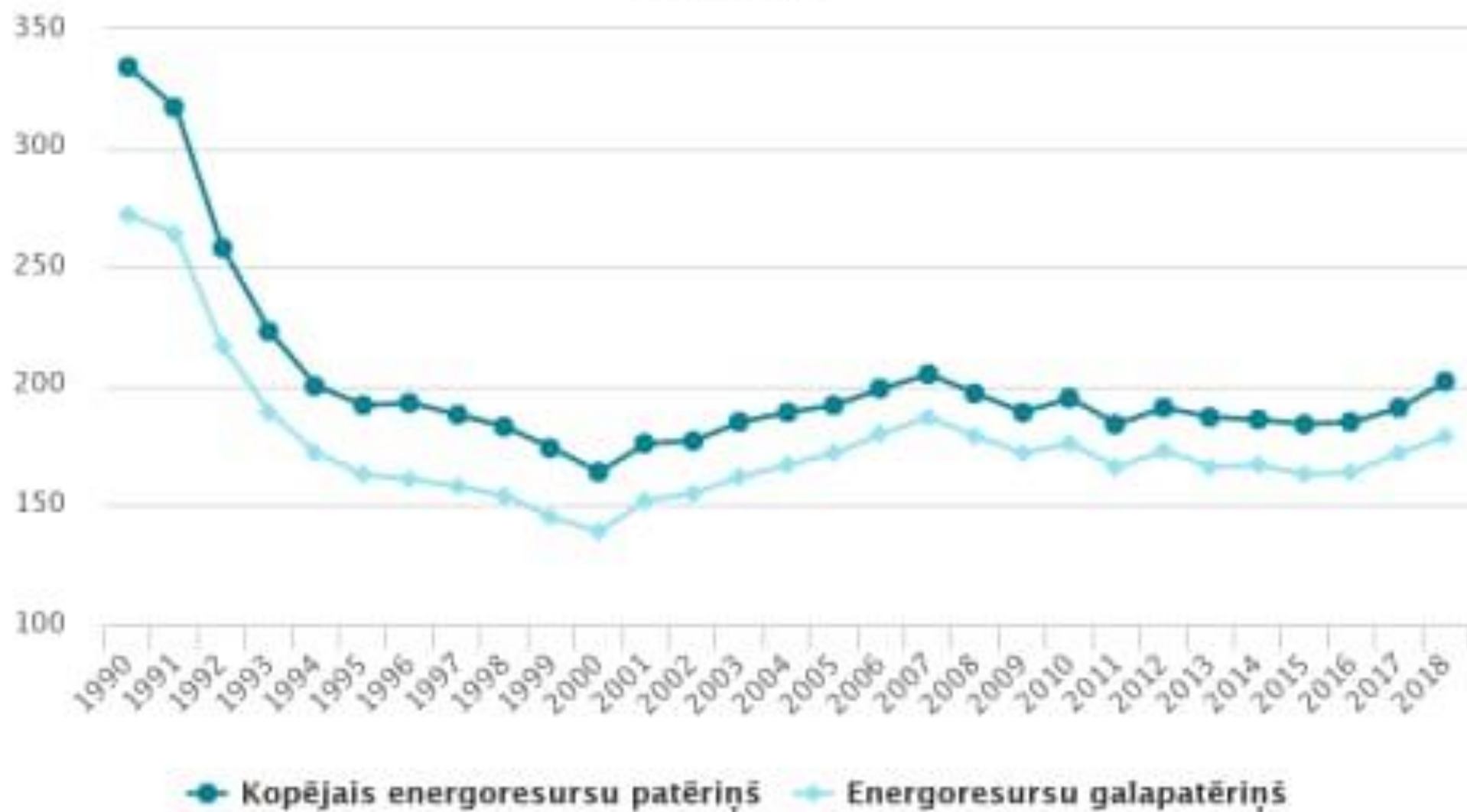


How safe is the battery?



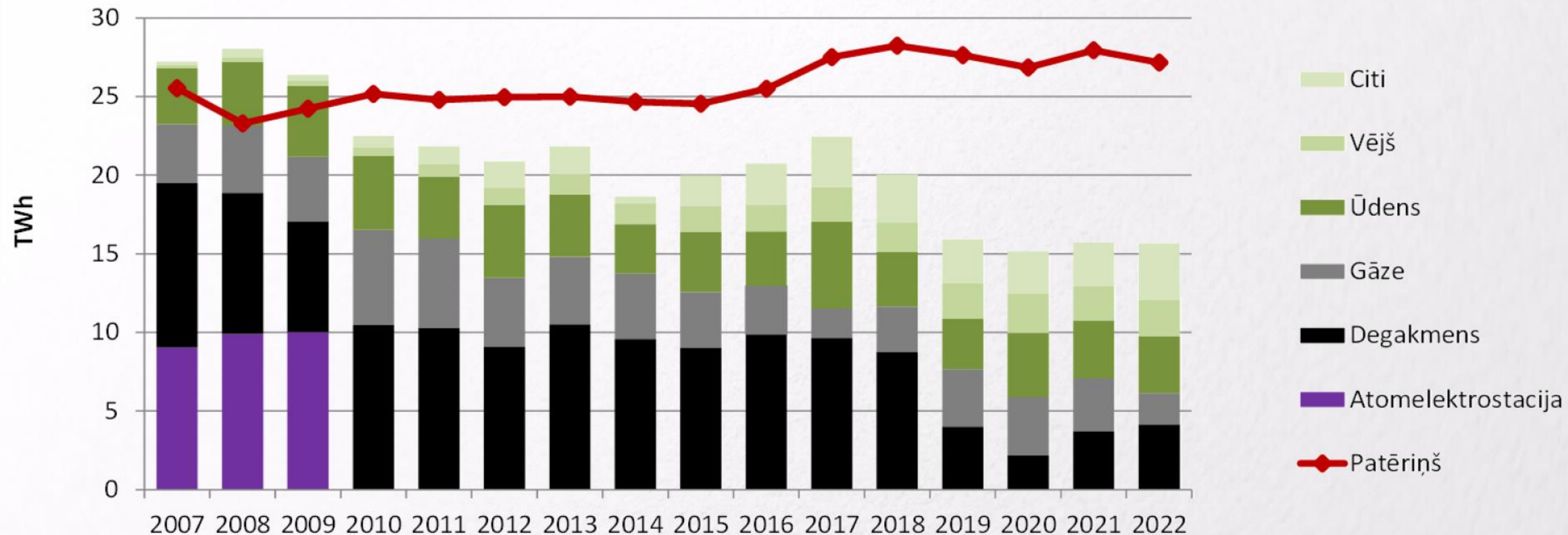
Energoresursu patēriņš Latvijā, 1990.-2018. gadā

(petadžouļos)

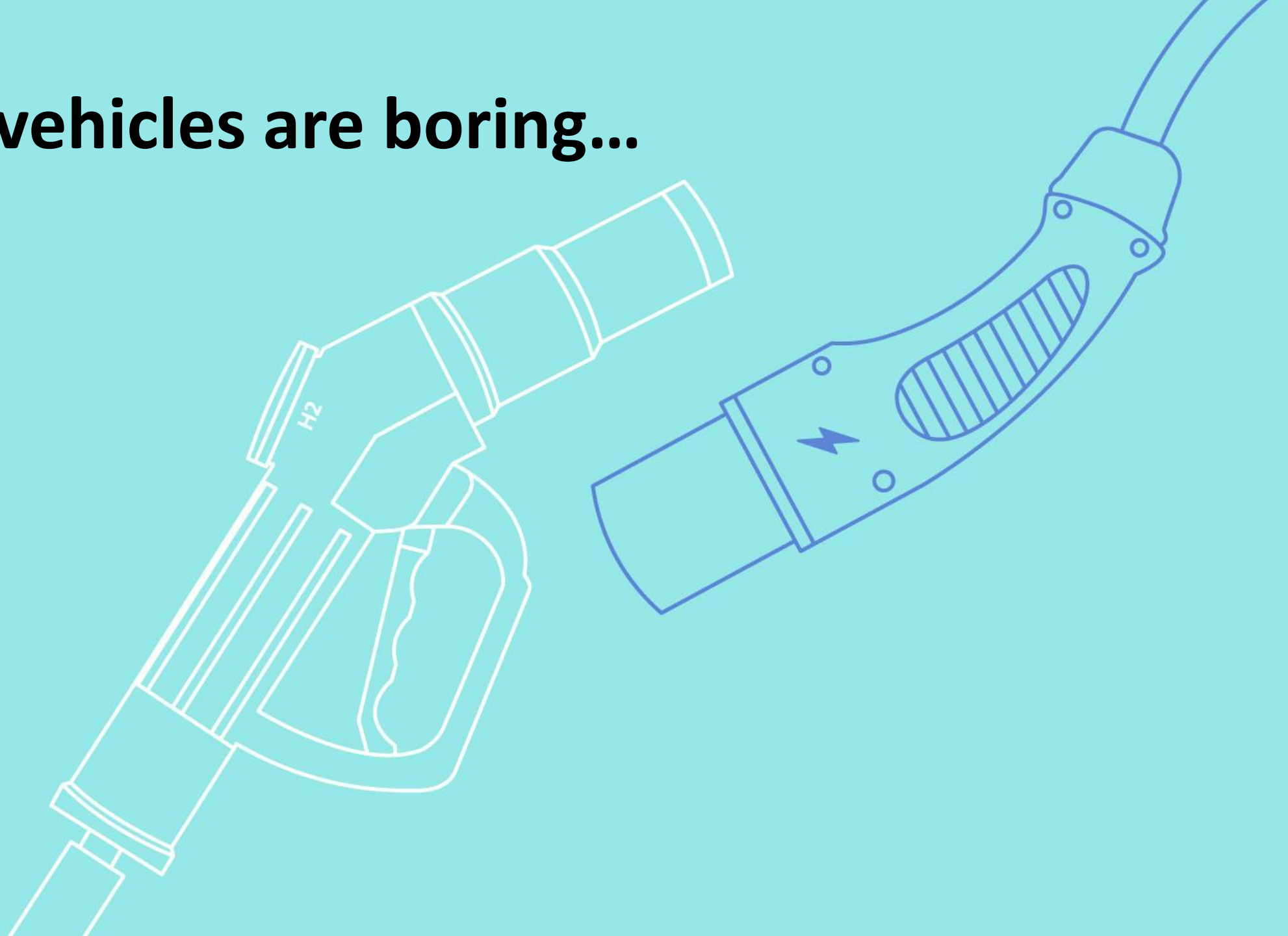


ĢENERĀCIJAS STRUKTŪRA

Elektroenerģijas ražošana un patēriņš Baltijā



Electric vehicles are boring...







ANSYS

BRIDGESTONE

CMG

BRIDGESTONE

R



Castrol

竞速未来
RACE THE FUTURE

BRIDGESTONE

ANSYS

BRIDGESTONE

Volkswagen

R

竞速未来

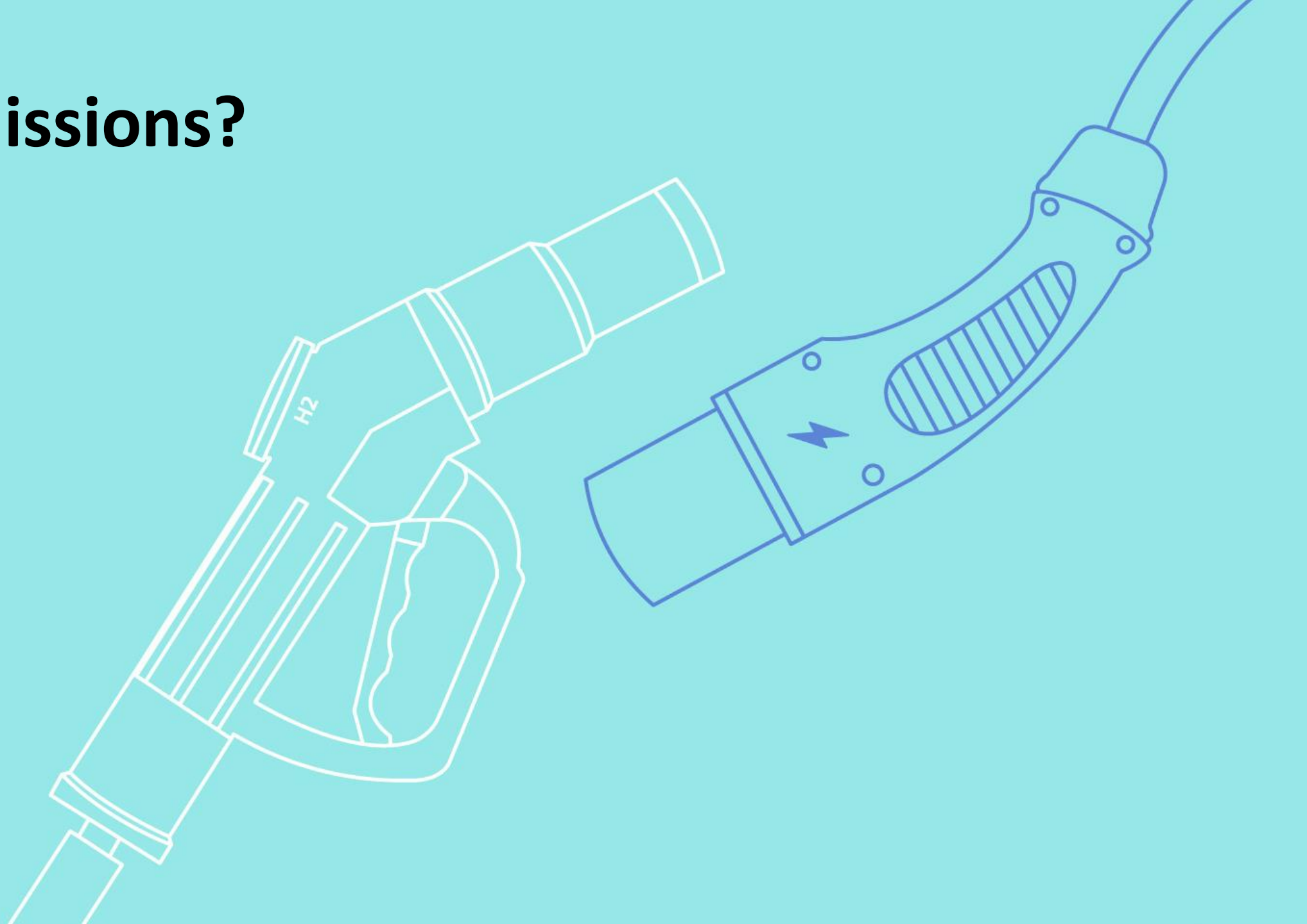
ANSYS

BRIDGESTONE

R



Zero emissions?





5. Questions & answers



Thank you!

