

Duurzaamheid in de logistiek

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COO



Waarom elektrisch vervoer



2025

Testprocedures energie & uitstoot (CO CO₂ NO_x)

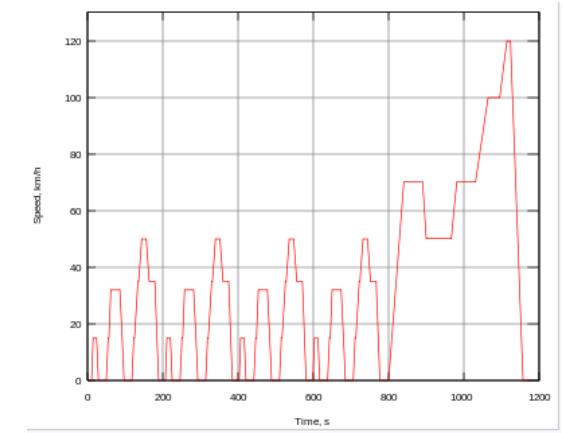
UDC Urban Driving Cycle

EUDC Extra-Urban Driving Cycle

NEDC New European Driving Cycle

WLTP Worldwide harmonized Light vehicles Test Procedures

RDE Real Driving Emissions



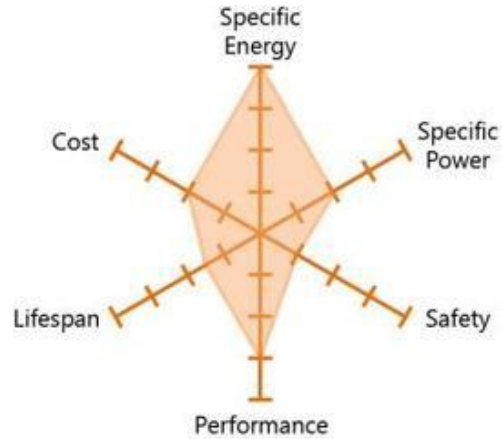
1970

2025

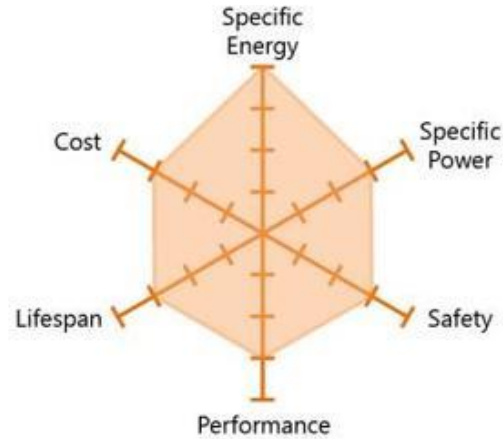
Energieopslag elektromobiliteit



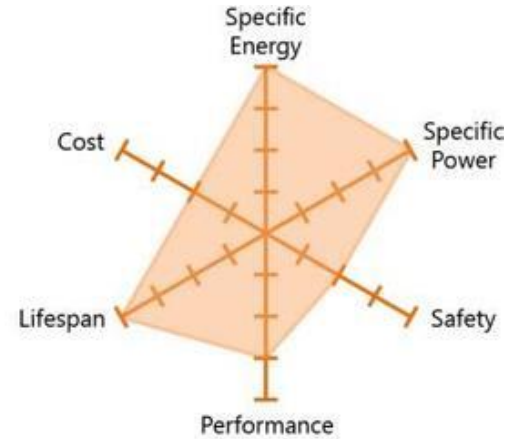
Li-Ion ≠ Li-Ion



Lithium cobalt (NCA)



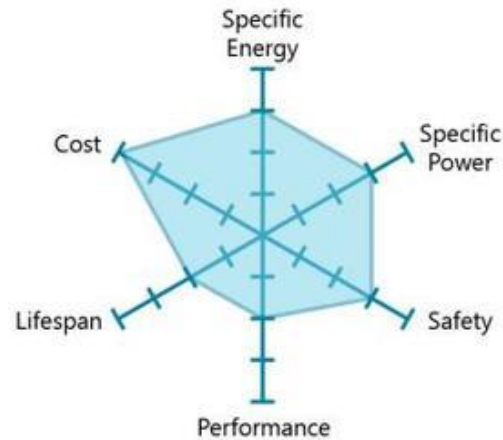
Lithium nickel manganese cobalt (NMC)



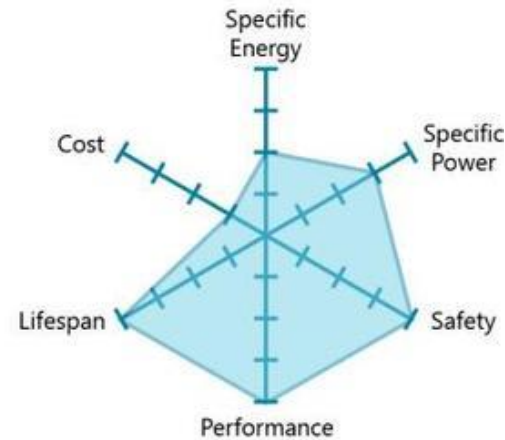
Lithium nickel cobalt aluminium (NCA)



Lithium iron phosphate (LFP)

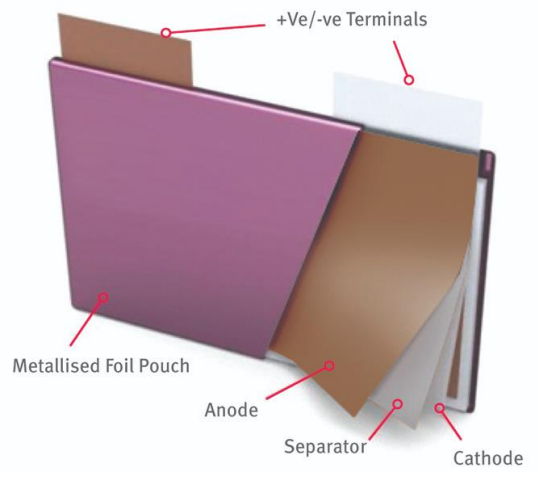
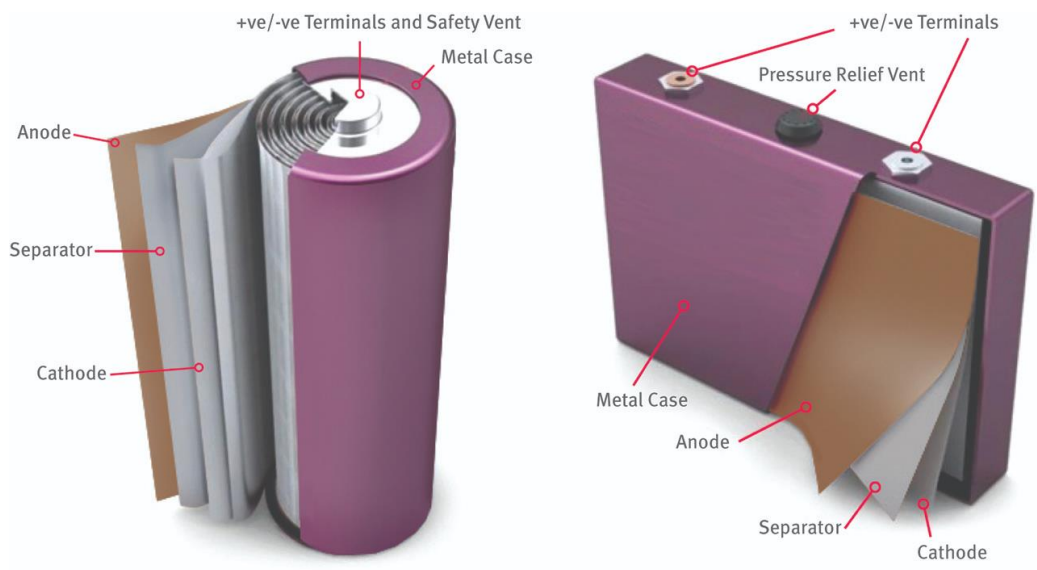


Lithium manganese spinel (LMO)

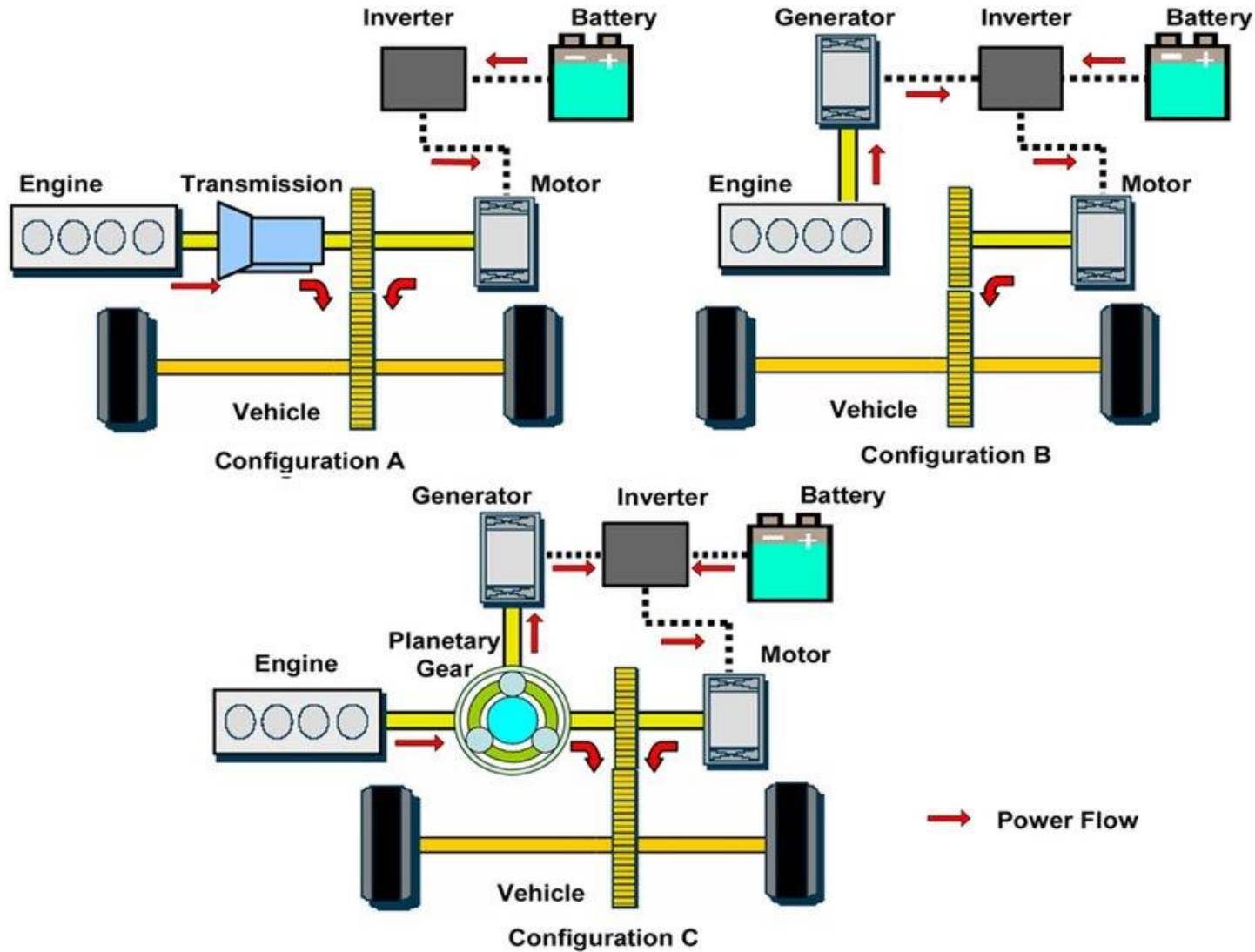


Lithium titanate (LTO)

Bouwwormen

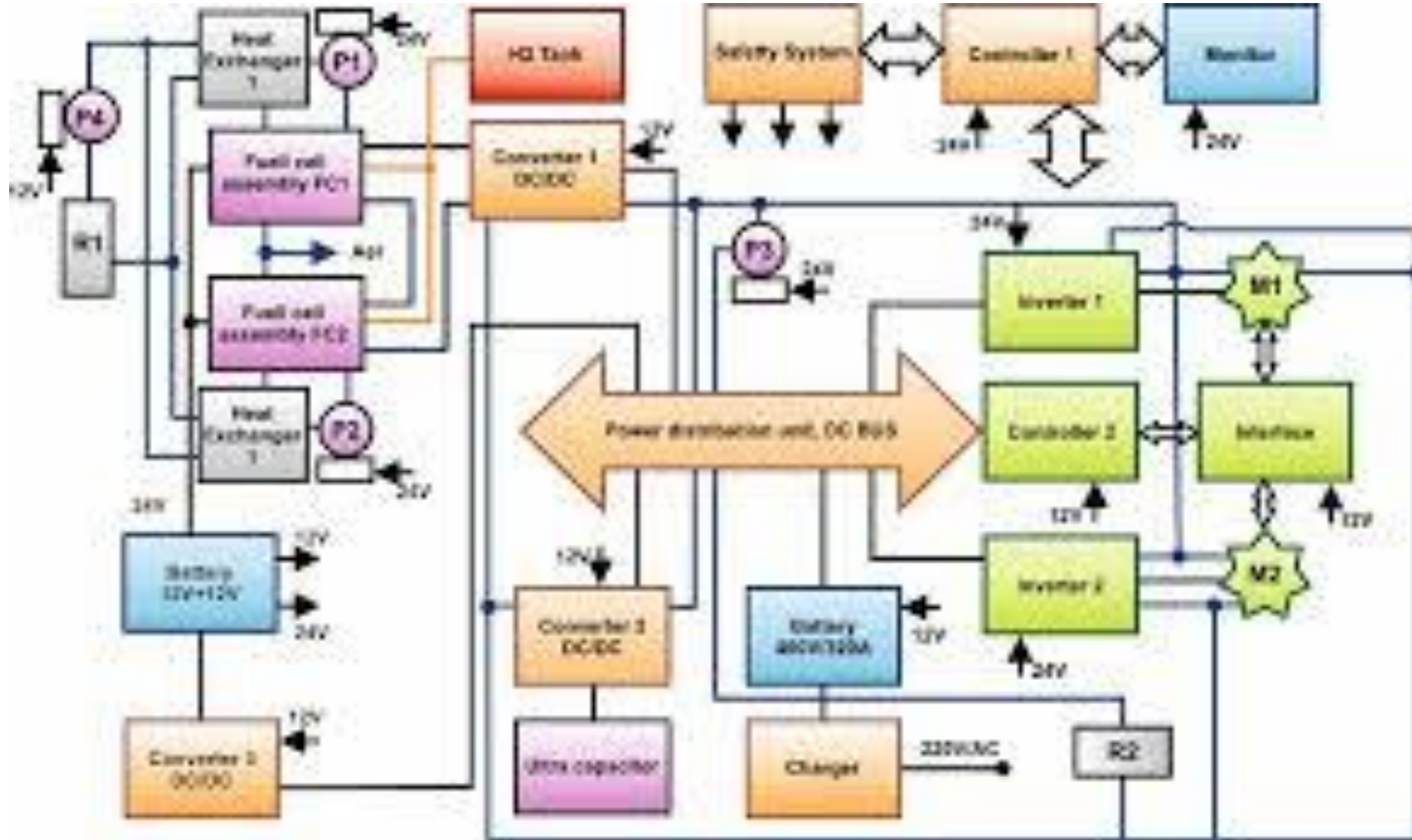


Hybride



- A) Parallel hybrid
- B) Serieel hybride
- C) Combinatie parallel / serieel

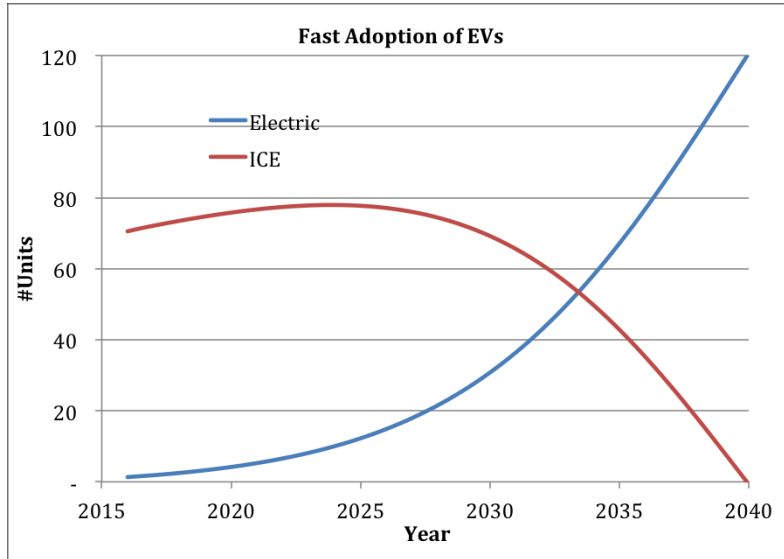
Waterstof / Fuel cell



Trends aandrijving

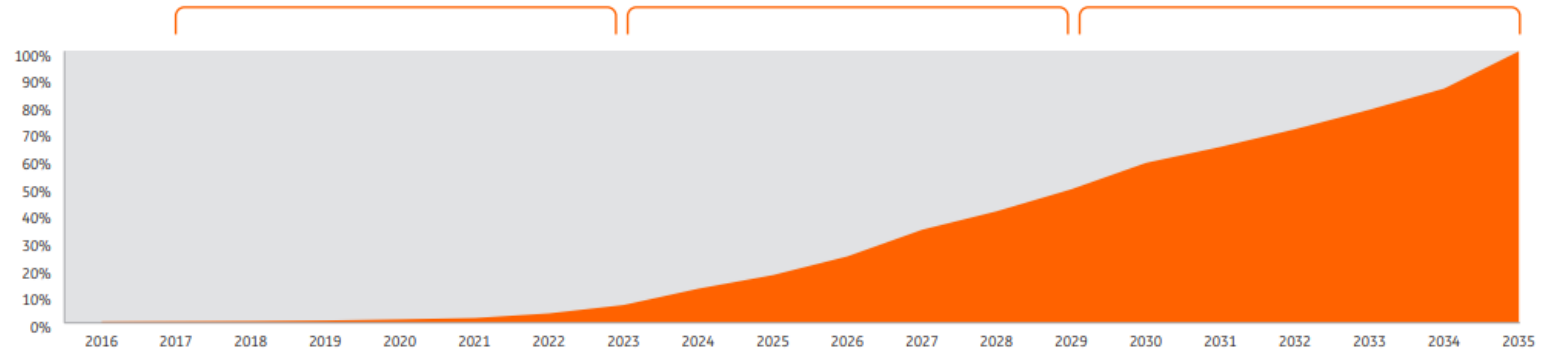
Termijn	Stad / last-mile	Streek	(Inter-) nationaal
Kort	Hybride + BEV	ICE + Hybride	ICE (Diesel)
Midden	BEV	Hybride + BEV	ICE + H2
Lang	BEV	BEV	H2

Hoe snel rijden we 100% ZE ?



Bron: ING Economics Department

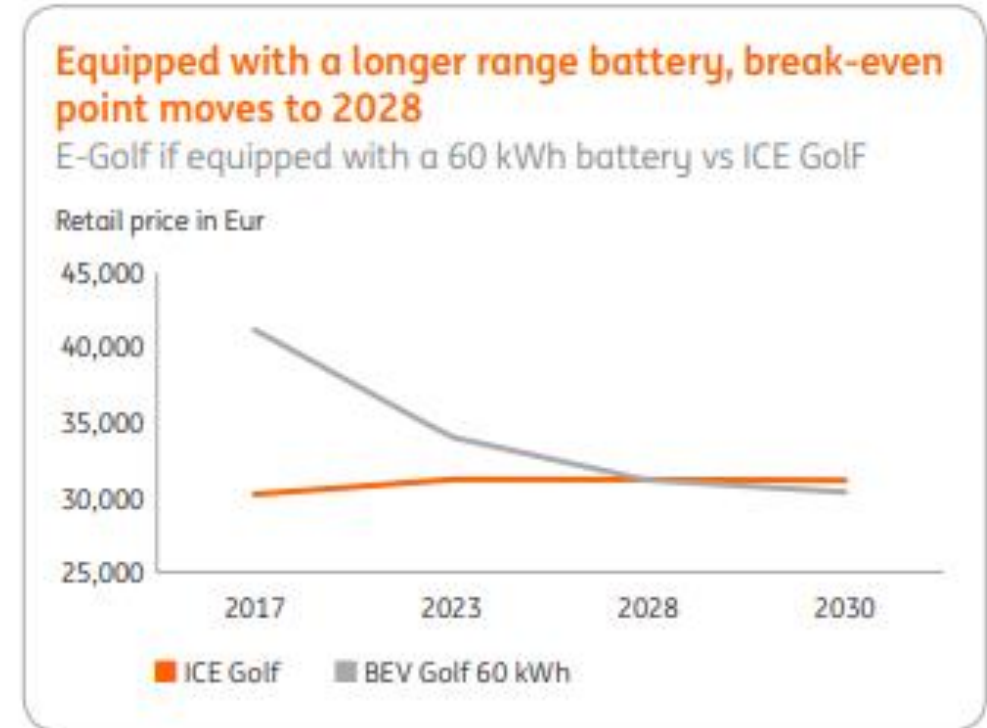
Market share of BEVs in Europe rises to 100% in 2035
 share of BEV in European new passenger car registrations



6 year platform lifecycle

- Government supported market to stimulate transition to electric vehicles.
- Premium (niche) BEVs gaining in upper segments. Key products create first 'volume' BEV s.
- (Ultra) fast charging roll-out.
- Next gen batteries increase energy density, lower BEV cost.
- Economies of scale for BEV.
- High range BEVs reach total cost of ownership parity with ICE.
- BEVs become the rational choice.
- R&D fully focussed on BEV development.
- BEV purchase price and TCO below ICE.
- New platforms / models increasingly 'BEV only'.
- Phase-out of ICE.
- BEV dominant in European new car sales.

Wanneer break-even ?



* e-Golf compared with TSI 125hp DSG 5dr. Comfortline. ICE price corrected for extra equipment e-Golf (nav pro, LED light, media control / usb, climatronic, driving profiles). ICE added 1,000 euro for expected emission regulations costs from 2021. Forecasted battery pack cost based on Bloomberg New Energy Finance. Calculated with 10% margin and 19% VAT into German retail price.

Wanneer investeren ?

Nu (in BEV voor stads & streek vervoer)
Maar wat dan met:

- Subsidies (denk ook aan b.v.DTKI, MIT)
- Voordelen aanbestedingen etc.
- Levensduur batterijen, voortgang technologie
- Laden

**Kunnen wij vandaag al
bijdragen aan de
verduurzaming van de
logistiek ?**



YES we can!

Achtergrond informatie

Podcasts

<http://thisweekincleantech.com/>

<https://avidtp.com/about/podcasts/>

Handige sites

<https://batteryuniversity.com/>

<https://www.mountox.com/>

<https://doetdoet.nl/>

<https://zerauto.nl/>

<https://smartemobility.nl/home>

<https://urbanmobilitysystems.nl/>