

POWERTRAIN FORECASTS AND MARKET DRIVERS: PASSENGER CARS.

Dr. Johannes Schmid, BMW Group

EUROPE AT A STRATEGIC CROSSROADS.

THE DECARBONIZATION OF TRANSPORT IS ONE OF EUROPE'S GREATEST TRANSFORMATION CHALLENGES.



AT THE SAME TIME, INDUSTRY, CONSUMERS AND POLICYMAKERS ARE UNDER ENORMOUS ECONOMIC PRESSURE.



„THE GOAL IS CLEAR: CLIMATE NEUTRALITY IN TRANSPORT. THE QUESTION IS NO LONGER WHETHER WE ACHIEVE IT, BUT HOW WE ACHIEVE IT."



EUROPE MUST NOT EQUATE THE PATH TO CLIMATE NEUTRALITY WITH A SINGLE TECHNOLOGY.



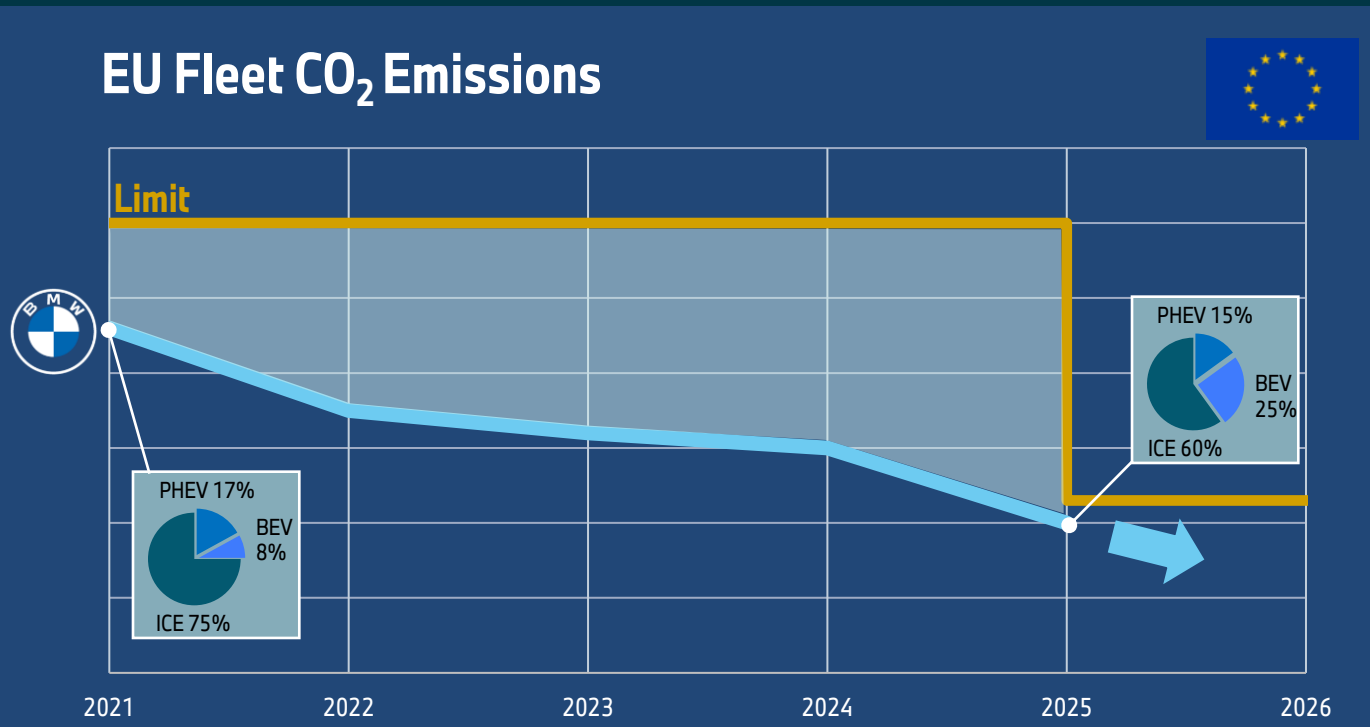
RESILIENCE IS CREATED THROUGH CHOICE, NOT THROUGH DEPENDENCY.

POWERTRAIN FORECASTS AND MARKET DRIVERS.

Regulation sets the direction...

...but customers, economics and infrastructure determine the success of drive train options.

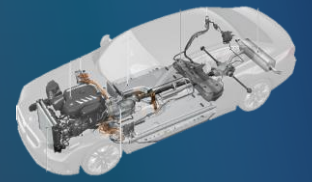
EU FLEET CO_2 TARGETS.
BMW PURSUES A HOLISTIC APPROACH TO ACHIEVING ITS CO_2 TARGETS.



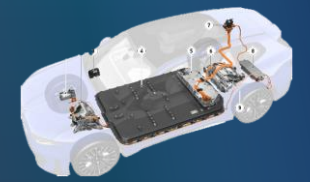
MHEV
Optimal combination of ICE and 48V energy recuperation system.



PHEV
Performance and efficiency in a highly effective way.

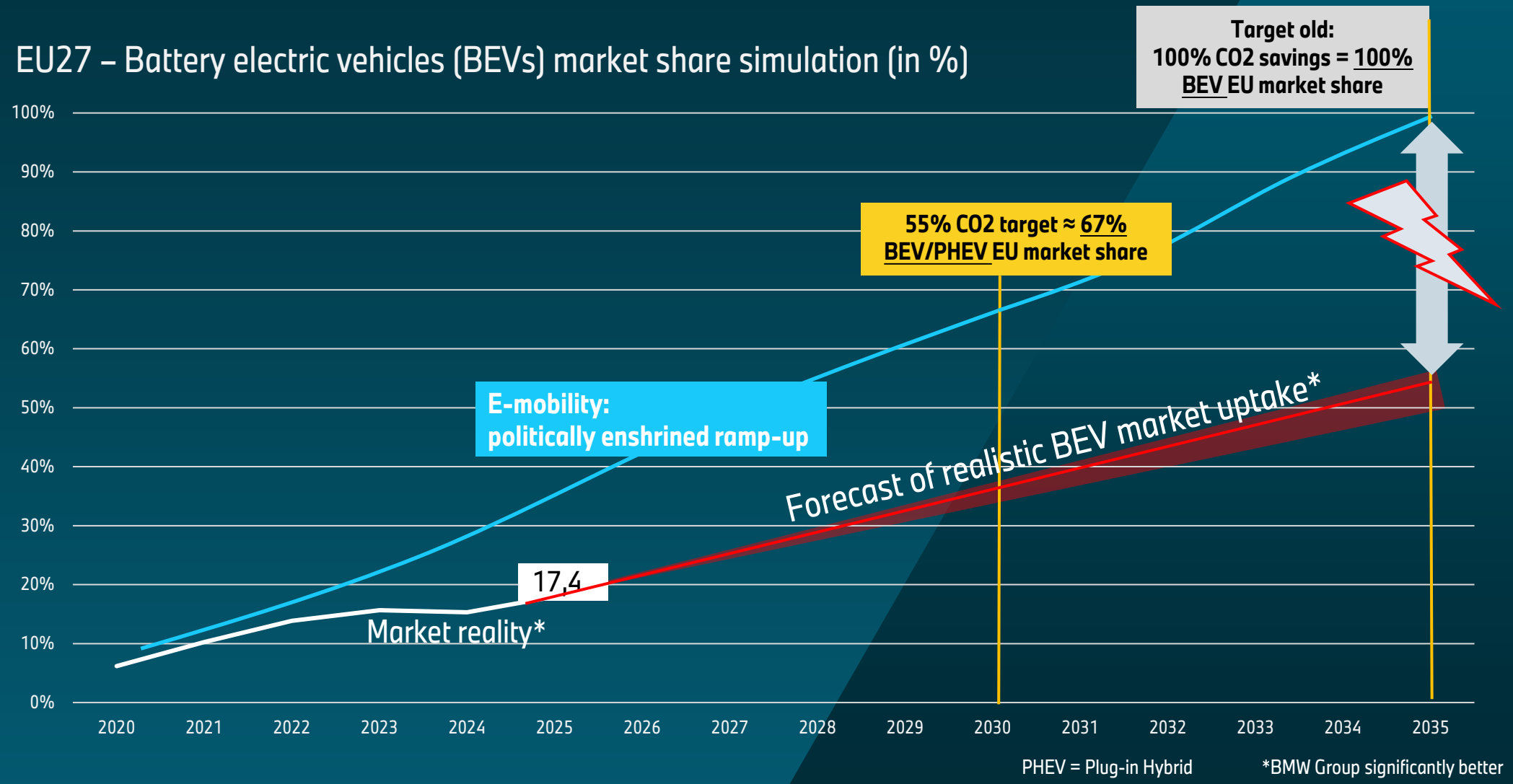


BEV
The sixth generation BMW electric drivetrain.



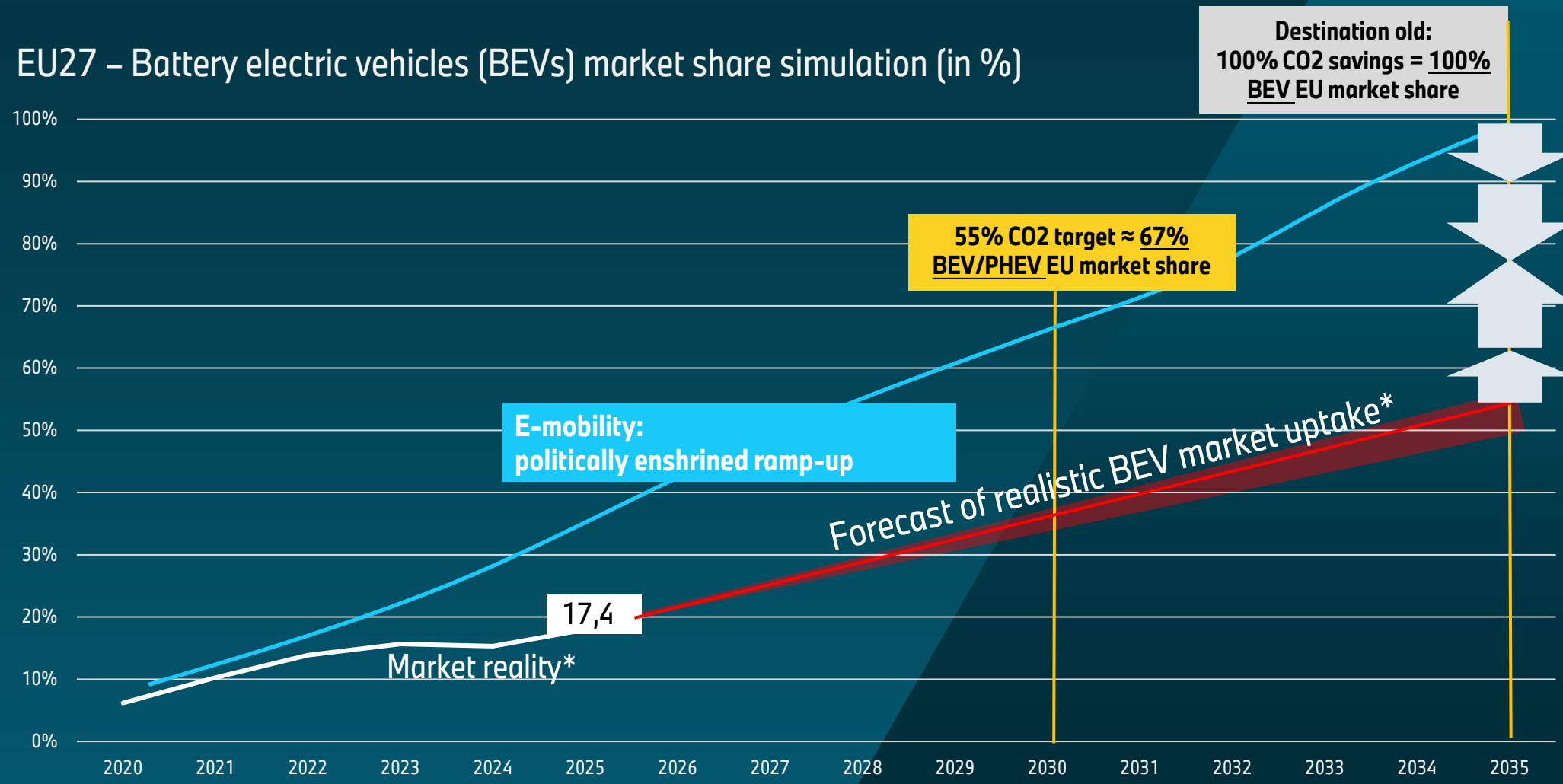
Through the continuous optimization of all drivetrain technologies, BMW has consistently outperformed the stringent EU fleet CO_2 targets.

REGULATORY MEETS MARKET REALITY.



REGULATORY MEETS MARKET REALITY.

EU27 – Battery electric vehicles (BEVs) market share simulation (in %)



BMW position as a solution:

- new target -90%
- Steel/Aluminum/ renewable Fuels
- CNF-only (VEEF) & PHEV
- push eMobility

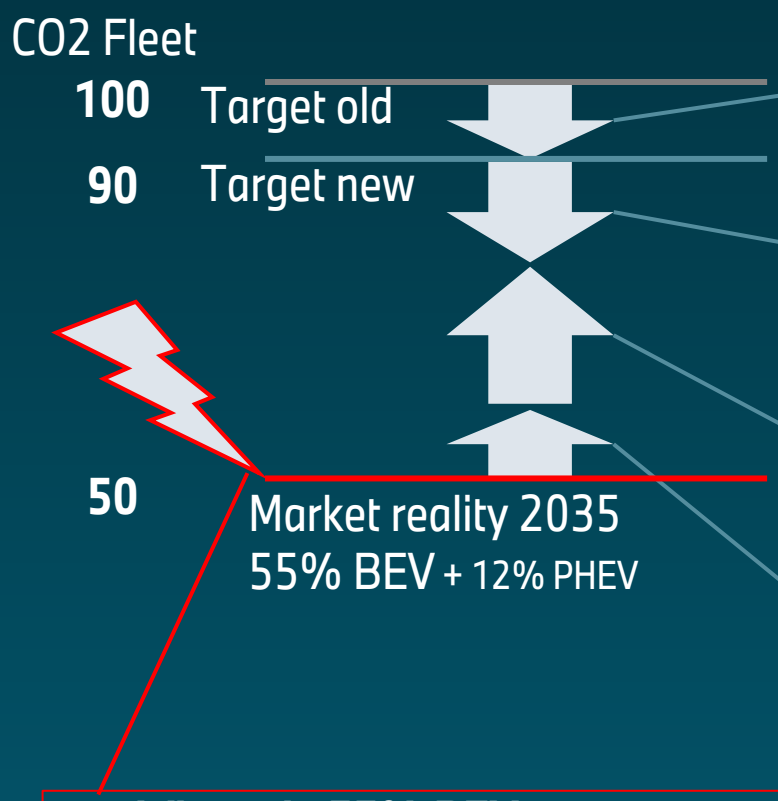
CNF-only vehicle = vehicle that is demonstrably powered only by renewable fuels

VEEF = Vehicles running exclusively on eligible fuels

PHEV = Plug-in Hybrid

*BMW Group significantly better

DEEPDIVE: BMW POSITION AS A SOLUTION.



BMW position as a solution:

New target : -90% without compensation
(offset by more renewable fuels in the existing fleet by increasing the REDIII GHG target from -14.5 to -18%).

Eligibility of green steel, aluminium and renewable fuels
Immediate and pragmatic crediting of CO2-reduced materials (e.g. green steel) & renewable fuels creates demand instead of restrictive compensation logic in the COM proposal.

CNF-only vehicles (VEEF) (approx. 10-20% volume)
Vehicles that are verifiably powered only by renewable fuels (CNF) must be recognised as 0g/km vehicles.

PHEV: Suspend Utility Factor 2

Incentive eMob
Maintenance benefits for eMobility.

? **Why only 55% BEV**
fragmentation of EU countries. Many will stay lower than 15% BEV in the long term.
Pressure causes counter-reaction: Massive aging of the stock threatens housing situation and grid expansion decides.
In 2035, half of the customers will not be able to charge easily/cheaply.

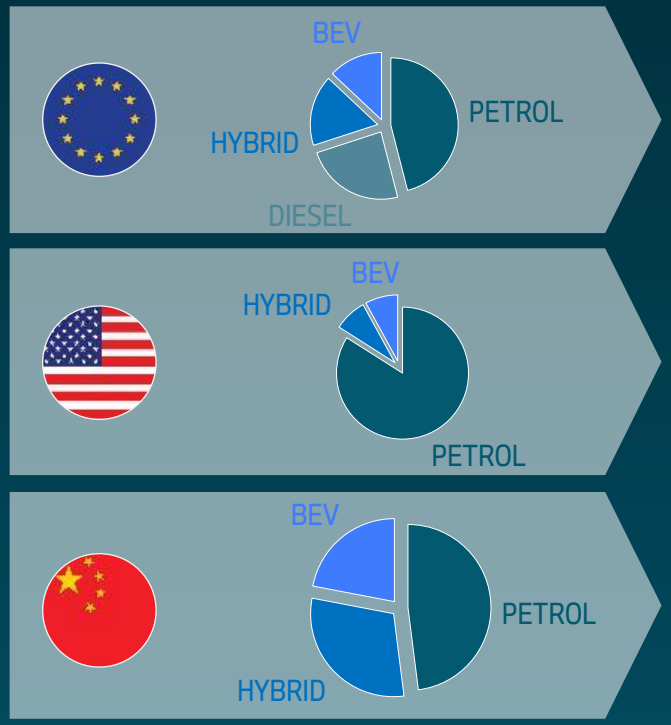
POWERTRAIN FORECASTS AND MARKET DRIVERS.

The customer chooses the car...
... not regulation.

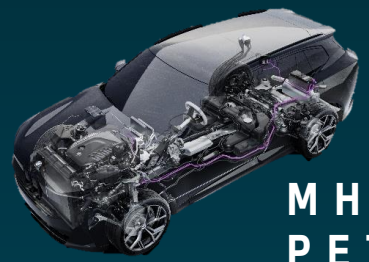
Technology openness therefore provides the needed resilience against different market-development scenarios.

TECHNOLOGY-OPEN APPROACH: THE NEW BMW X5 AS AN EXAMPLE.

Current Powertrain Mix in the Premium SUV Segment1



Available Powertrains in the New BMW X5

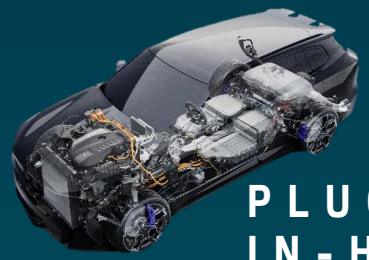


MHEV PETROL

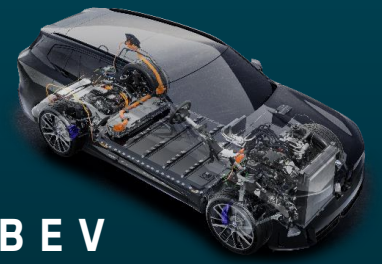


MHEV DIESEL





PLUG-IN-HYBRID



BEV



FCEV

A technology-open approach is BMW's response to regional customer demand and regulatory requirements.

[1] Modeling based on data from ACEA, CPCA & ICCT

NESTE MY (HVO) - A HIGH-QUALITY DIESEL SUBSTITUTE WITH UP TO 90% CO2 REDUCTION IN THE OVERALL BALANCE.



Every gram CO2 counts: All BMW models are approved for E20, E25, B10 and XTL – already for several years.

BMW is investigating the conversion of additional plants worldwide for gasoline and diesel alternatives.

CO_2 IMPACT OF RENEWABLE FUELS IN THE EXISTING FLEET.

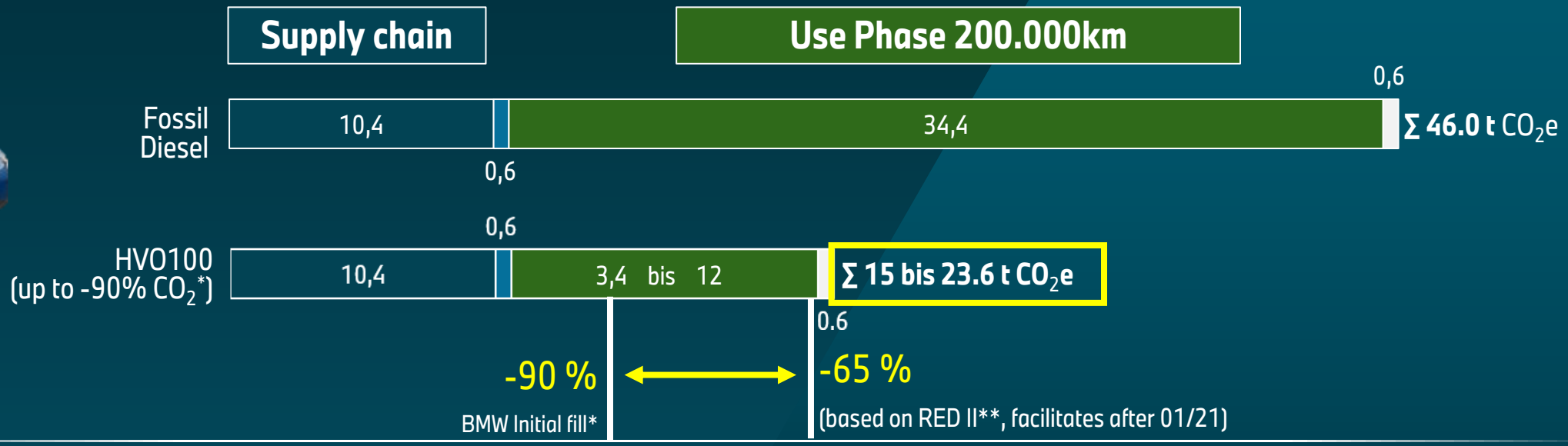
520d



Diesel

157g/km CO_2

Current EU Legislation



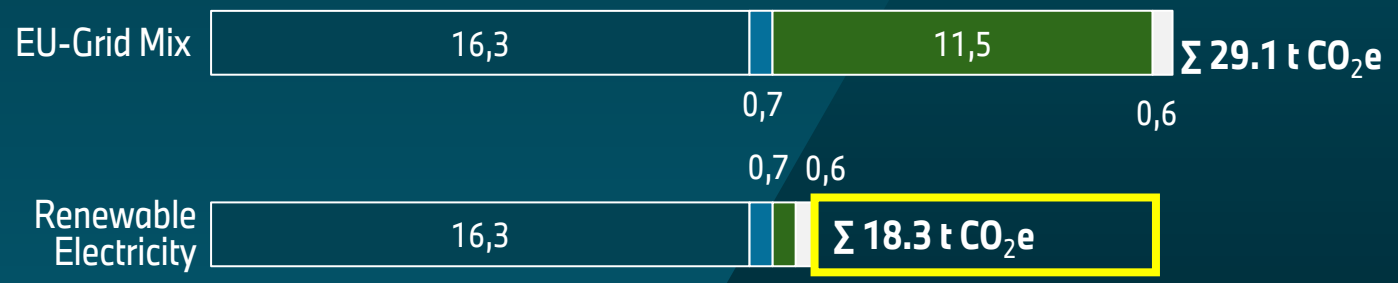
i5 40e



Battery

0 g/km CO_2

Current EU Legislation



- Raw Materials / Supply Chain
- Production (BMW Group)
- Fuel / Energy Consumption (incl. Production)
- Recycling

With renewable fuels, a comparable CO_2 footprint to a BEV can be achieved across the entire vehicle lifecycle.

* The "-90% CO_2" classification is based on exclusive refuelling with HVO100. CO_2 figures according to WLTP vehicle footprint data: 520d Touring (03/2024), i5 40e (07/2023). Source: BMW Vehicle Footprint. RED = Renewable Energy Directive.

BMW POSITION: TECHNOLOGY-OPENNESS AS RISK MANAGEMENT.

Can we predict the future of drive trains options in 2035+?

✓ … **NO!**

But

BEV will be the dominant option though **not even close to 100**%.

We need other options to reduce CO2:

✓ … CO2 reduced materials (e.g. green steel/aluminium).

✓ … renewable fuels.

✓ … VEEF.

✓ … PHEV and FCEV.




THANK YOU.