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NAVIGATING A CHANGING ENVIRONMENT

Navigating a changing environment

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Navigating the politics of sustainability

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REVIEW OF UK & EU ROAD TRANSPORT POLICIES TO SUPPORT INDUSTRIAL STRATEGY FOR LOWER CARBON FUELS & PRODUCTS

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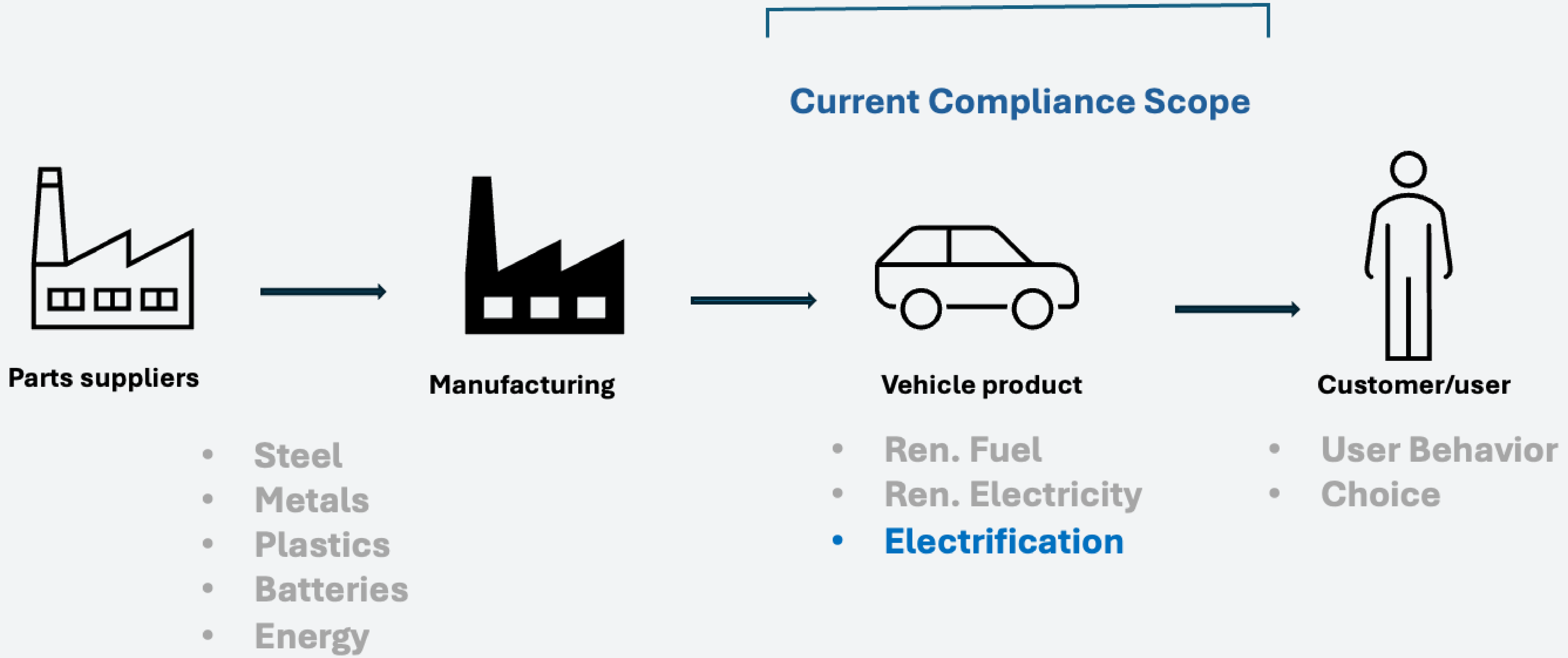
CURRENT UK & EU ROAD CO2 POLICY & INDUSTRIAL IMPACT

Current Policy Limitations: The UK & EU CO2 emission performance standards for cars and HDVs prioritize battery electric vehicles. Sustainable fuels used in internal combustion engines are treated as having the same CO2 impact as fossil fuels under this regulation. All other impacts of the car manufacture or use are out of scope.

Potential Industrial Impact: This policy approach is linked to signs of de-industrialization in strategic UK & EU sectors, including automotive manufacturing and suppliers, fuels/refining, steel, and metals.

Competitiveness & Economic Concerns: European manufacturers face significant compliance costs, potentially paying billions for credits to competitors (e.g., from the US and China) due to stringent targets and an effective carbon penalty far exceeding ETS prices (€500/tonne vs. ~€90/tonne).

CO2 IN VEHICLES:
NARROW COMPLIANCE ROUTES FOR 2035



WHICH UK & EU POLICIES RECOGNISE RENEWABLE FUELS?

Emissions Trading Scheme ETS (Industrial)	YES	(as zero CO_2)
Emissions Trading Scheme (Road & Buildings)	YES	(as zero CO_2)
Renewable Energy Directive	YES	(LCA basis)
CO_2 in Cars/ & HDVs	NO	(treated as Fossil)
FuelEU Maritime	YES	(LCA basis)
RefuelEU Aviation & SAF Mandate	YES	(LCA basis)

SUSTAINABLE FUELS POTENTIAL: COMPLEMENTING ELECTRIFICATION

Strategic Need: Sustainable fuels offer a valuable pathway to decarbonize road transport alongside electrification.

Optimized Application: Utilizing sustainable fuels, especially in Plug-in Hybrid Electric Vehicles (PHEVs), can significantly enhance fleet-wide CO2.

Resource Availability: Advanced conversion technologies (e.g., gasification, Fischer-Tropsch) can unlock vast, currently underutilized EU and global biomass resources. Realizing this potential requires technology maturation and scale-up.

SUPPLY & INVESTMENT BARRIERS: TECHNOLOGY & POLICY

Feedstock Logistics & Technology Readiness: There is abundant low-quality biomass for advanced biofuels, but it needs progress in aggregation and conversion technologies, moving them from pilot/demonstration (TRL 6-7) to commercial scale (TRL 8-9).

Investment Climate & Policy Certainty: The fuels industry requires long-term policy signals and demand to justify investments needed to grow advanced biofuel or e-fuel production. The 2035 “ICE ban” detersinvestment.

Market Risk & Sector Interdependence: Historically, road, aviation, and maritime fuels (plus chemical feedstocks) are co-produced; removing the large road fuel market makes standalone SAF or marine fuel production less economically viable and efficient, jeopardizing refinery site transitions. A stable role in road transport (e.g., for PHEVs/HDVs) would significantly de-risk investments benefiting all sectors.

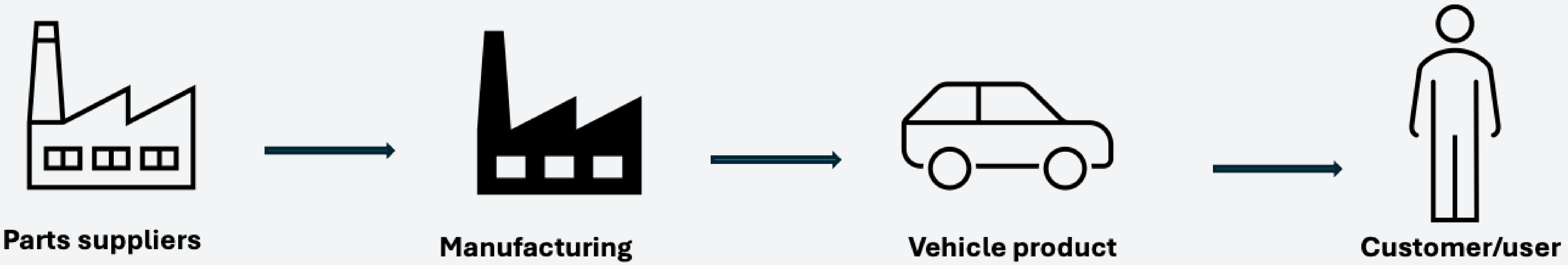
“There’s not enough biofuels” has become a self-fulfilling prophecy.

CO2 IN VEHICLES: NARROW COMPLIANCE ROUTES FOR 2035

Multiple Industries can benefit from investment support from high implied CO2 price

Potential Compliance Extension

Current Compliance Route



- Steel
- Metals
- Plastics
- Batteries
- Energy

- Ren. Fuel
- Ren. Electricity
- Electrification

- User Behavior
- Choice

BEYOND TAILPIPE EMISSIONS

Broaden Compliance Scope: Shift the regulatory focus beyond solely tailpipe emissions to encompass a wider range of decarbonization actions relevant to the vehicle lifecycle, providing flexibility.

Crediting Low-Carbon Materials: Introduce mechanisms allowing vehicle manufacturers to gain compliance credits for using materials with a lower embedded carbon footprint, such as green steel (saving ~1 tonne CO_2 per typical car) or low-carbon aluminum, plastics, and battery components. Given established supply chains, robust verification of carbon intensity is feasible. This would create much-needed demand pull for these green materials.

Recognizing Low-Carbon Fuels: Implement a system to credit the use of certified renewable and low-carbon fuels (biofuels, RFNBOs/e-fuels) towards vehicle CO_2 targets, similar to how their benefits are recognized under the RTFO/RED, ETS, and maritime/aviation regulations. This could involve obligating fuel suppliers or enabling vehicle manufacturers to claim credits for fuels used in their vehicles (e.g., PHEVs, HDVs).

DO WE NEED ANY SUSTAINABLE FUELS FOR ROAD SECTOR? CONSIDER THIS:

OPTIMISATION OF USE OF BATTERIES WHERE SUPPLY IS LIMITED

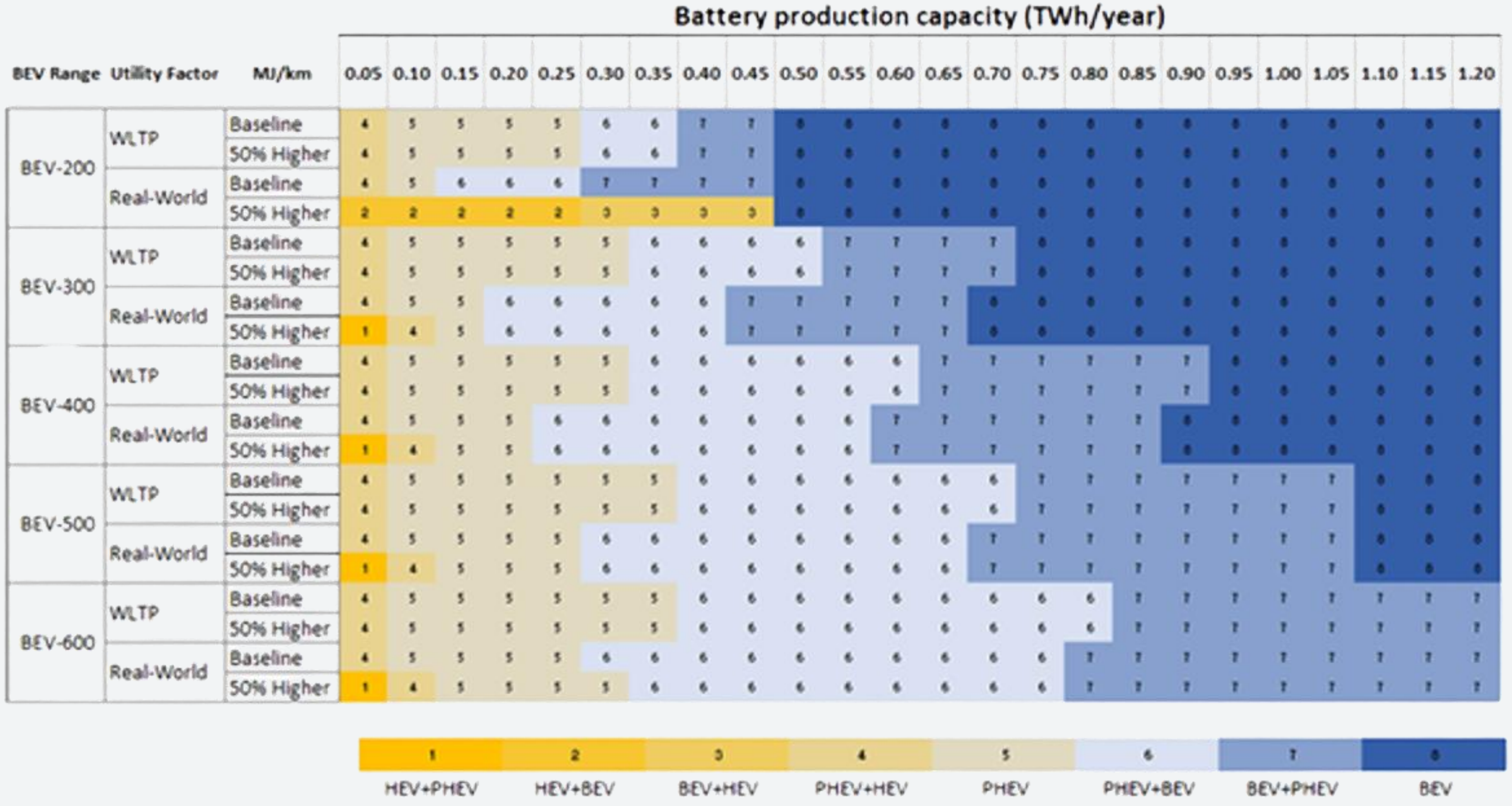


Fig. 14. The outline of the optimal level of vehicle electrification based on the vehicle sales mix, ignoring the market shares less than 5% (legend note: the first term in each combination, e.g. HEV in HEV+PHEV, represents the dominant option within each combination).

What do we do if we don't have enough batteries available?

Source: Concawe

- Making more of the fleet PHEVs is more effective than limited production of full BEVs
- Nudging plugging-in behaviour to achieve higher Utility Factor is key.
- Providing PHEVs exclusively with sustainable fuels would significantly improve fleet CO2

CONCLUSION & PATH FORWARD

Core Issue Diagnosis: The current UK & EU CO2 regulations for road vehicles, by focusing narrowly on tailpipe emissions and effectively excluding sustainable fuels, is creating industrial competitiveness challenges, hindering investment in key decarbonization pathways.

Proposed Solution Framework: Sustainable fuels represent a necessary complement to electrification for achieving deep decarbonization in transport.

Policy Recommendation: Evolve the road vehicle CO2 standards towards genuine technology neutrality before the planned phase-out targets take full effect, crediting use of low-carbon materials and sustainable fuels. Such reforms could stimulate investment across critical value chains (vehicles, fuels, materials), enhance UK & EU industrial resilience, and give industries and citizens more choice.