

Who pays for green steel? How carmakers weigh the cost of cleaner materials

The steel industry accounts for 7-8 percent of global greenhouse gas emissions. The technology to make steel without fossil fuels already exists, but it comes at a higher cost. This study investigates why carmakers are not buying more of it, despite ambitious climate commitments.

Every passenger car contains around one tonne of steel. Most of that steel is produced today using coal, generating enormous carbon emissions. Alternatives exist: steel made with hydrogen and renewable electricity, or by melting recycled scrap in electric arc furnaces. Both are commonly called green steel, and both are already on the market – the first in limited volumes, the second at somewhat larger scale. The problem is that the price is significantly higher than for conventional steel, and supply remains scarce.

Outside experts often argue that the cost premium for green steel is so small it barely registers for the end consumer – less than one percent of the vehicle price. Carmakers disagree. Their reality looks different: customers are not willing to pay extra for this feature, and the additional cost lands directly on their own margins. In an industry already under pressure from electrification and global price competition, even a small extra expense is hard to justify internally.

The most striking finding is that the transition is not primarily held back by a lack of willingness to pay for green steel – but by a coordination failure. Steel producers cannot make the investments needed to scale up production without knowing that buyers will commit. Carmakers will not commit without knowing that prices are reasonable and volumes sufficient. Financiers will not fund projects without long-term agreements. Everyone is waiting for someone else to move first, and the market stays stuck. However, the study also shows that better coordination alone would not solve the problem: there is a fundamental cost gap between what green steel costs to produce at scale and what the automotive industry can actually absorb.

EU regulation plays a role, but not always in the expected way. Upcoming requirements on climate reporting and carbon tariffs on imported steel create incentives, but nothing currently forces carmakers to actually purchase green steel. The voluntary climate framework SBTi – which many companies have signed – functions more as a way of lending credibility to an ambition already held than as a direct driver of purchasing decisions, even if it currently drives some green steel demand from specific carmakers.

The conclusion is clear: the gap between climate ambition and actual purchasing cannot be closed through voluntary action alone. Mandatory requirements calibrated against the industry's real margin situation – not against what consumers might theoretically be willing to pay – are a necessary condition for moving the market forward.

The study is based on in-depth interviews with representatives from European automotive manufacturers, the steel industry, and independent experts.