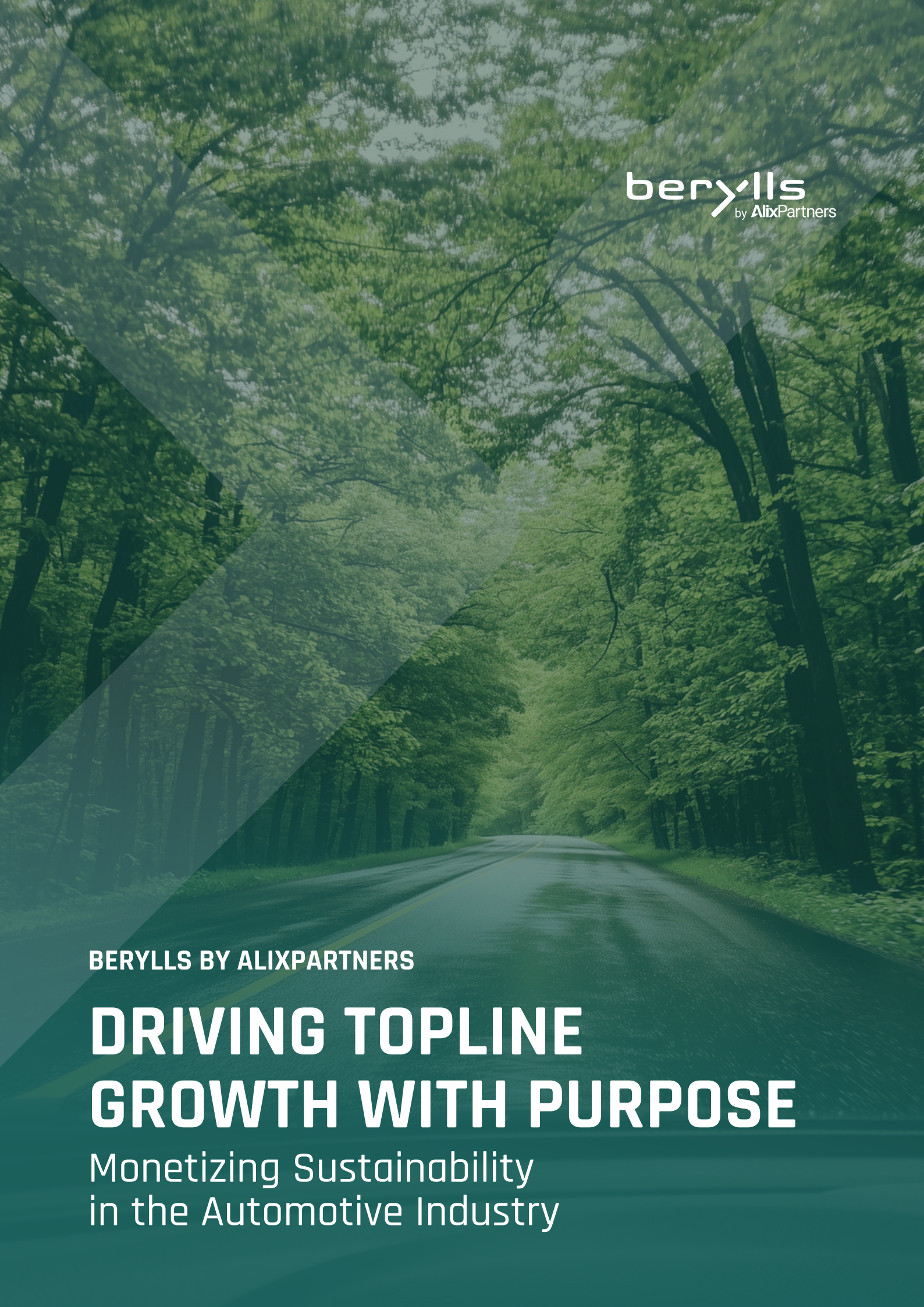

BERYLLS BY ALIXPARTNERS

DRIVING TOPLINE GROWTH WITH PURPOSE

Monetizing Sustainability in the Automotive Industry

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1

THE BUSINESS CASE FOR DEVELOPING FULLY SUSTAINABLE VEHICLES

Sustainability in the automotive industry involves reducing environmental impacts and improving resource efficiency to meet ESG regulations and satisfy growing consumer demand for eco-friendly vehicles and manufacturing practices.

Currently, most OEMs' sustainability efforts are focused on cost reductions and regulatory compliance, with investment primarily targeting electric vehicles (EVs), fuel efficiency improvements, and reducing emissions from traditional combustion engines. What is often missing is a comprehensive vision for topline growth delivered by sustainable product lines that appeal to environmentally conscious consumers.

The sustainability initiatives so far undertaken by OEMs also only represent a fraction of what a fully sustainable product and service offering requires. A fully sustainable car is designed with eco-friendly materials, powered by renewable energy sources, and produces zero to low emissions throughout its lifecycle. In addition, the vehicle's components must be reused or safely disposed of when they are no longer in use, without harming the environment.

No manufacturer has yet developed a fully sustainable car. However, many of the elements needed to make such a vehicle are already available. There are two increasingly urgent competitive reasons why OEMs should incorporate these materials and components into sustainability initiatives.

- **Building consumer trust:** Manufacturers often treat sustainability as a marketing tool rather than a genuine commitment to environmental stewardship, which risks eroding consumer trust amid accusations of greenwashing.

- **Turning green into gold:** Treating sustainability as a marketing measure also fails to capture the growing potential for monetizing sustainable products and services. Fully sustainable vehicle lines that integrate environmental considerations across the entire lifecycle can unlock new sources of revenue and profit from greater brand awareness and loyalty, and increased willingness by purchasers to pay more for truly "green" cars.

This Berylls by Alix Partners report examines how OEMs can move beyond superficial sustainability to monetize green vehicles and services. We provide a blueprint for OEMs to create value through sustainability, which is set to become a core driver of innovation and profitability in the automotive industry.

Sustainability is not a cost center. It is an enabler for profitability.

2

BEYOND EVS: DESIGNING A FULLY SUSTAINABLE VEHICLE

As discussed above, a fully sustainable car does not yet exist. However, it is possible to create a prototype by combining sustainable features that are already available, although not yet incorporated in a single vehicle (see Figure 1).

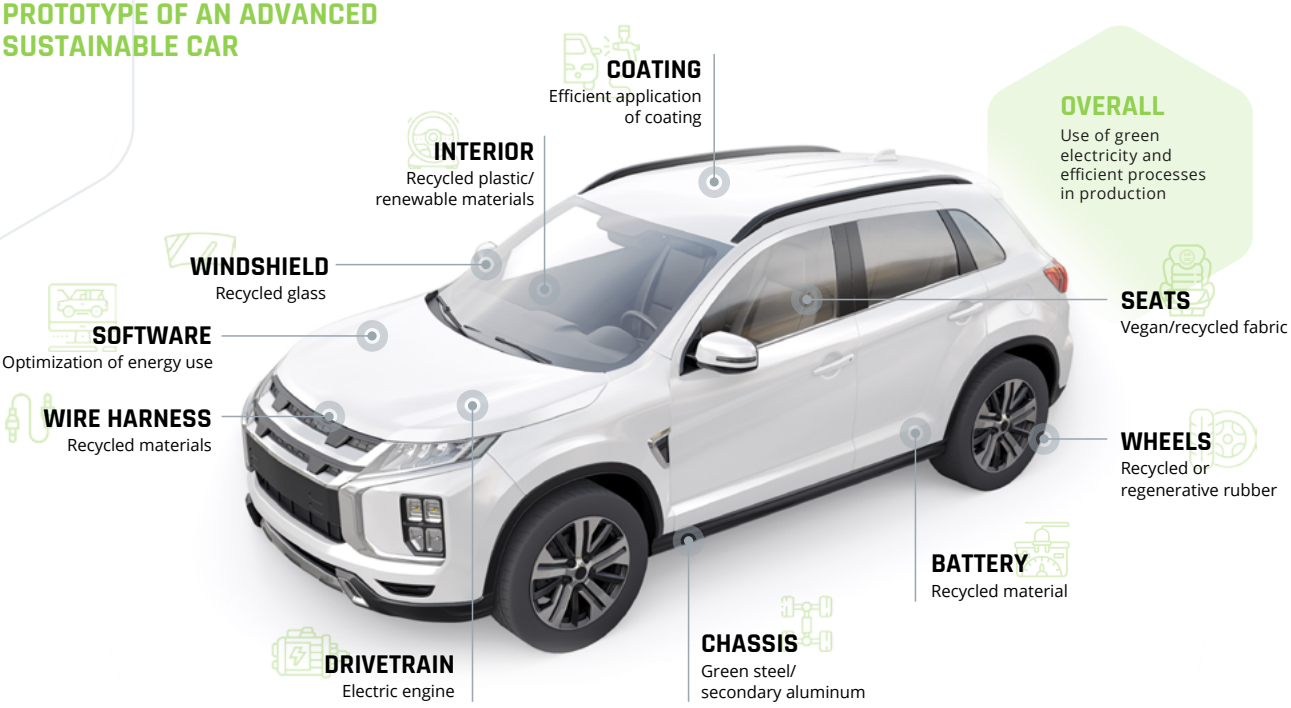
Electric vehicles (EVs) represent the most significant advancement toward sustainable automotive transportation because currently, the largest portion of a vehicle's emissions comes from fuel consumption during its lifecycle. However, this shifts dramatically when green energy is used to power EVs, reducing usage emissions to zero. In this scenario, the bulk of emissions shifts to the upstream value chain – vehicle production.

While production emissions cannot be eliminated, they can be reduced by:

- Using green steel or secondary aluminum for the chassis
- Using recycled glass for windshields and windows
- Incorporating recycled plastics and fabrics for a leather-free interior

These efforts are already in use but often in a fragmented way. Achieving a truly sustainable vehicle requires a fundamental change in vehicle design, sourcing, and production, making sustainability a key driver of topline growth by targeting the growing number of customers who want to buy sustainable vehicles and connected services.

FIGURE 1
PROTOTYPE OF AN ADVANCED SUSTAINABLE CAR



3

TURNING GREEN INTO GOLD: THE REVENUE POTENTIAL OF FULLY SUSTAINABLE CARS

Consider a hypothetical German premium OEM in 2030 that allows customers to select a sustainable line for its full range of BEV and PHEV vehicles. The sustainable line transforms selected components – meaning already existing and built-in parts – into sustainable variants. To address psychological purchase criteria that influence decision-making and willingness to pay, such as individual signalling needs, a visual differentiation between a regular vehicle and one equipped with the sustainable line is provided. An initial market sizing follows several central assumptions.

Sustainability that is charged to the end customer, is, and will remain, a premium and luxury phenomenon at first. For the largest demographic of car buyers, vehicle purchases primarily fulfil a utilitarian need: transportation. Therefore, the ability and willingness to pay for emotional and ideological features are likely limited to premium and luxury customers, which is why we have chosen a premium brand as a plausible illustration. For simplicity, we have not differentiated fleet or leasing customers from private purchasers, because the key factor is whether the buyer is willing to pay for additional sustainability.

Moreover, sustainability, in the context of vehicles, is inseparable from the (perceived) sustainability of powertrains. Comparing ICEs, BEVs, and PHEVs, an eco-conscious premium customer would clearly not choose ICEs, assuming other purchasing criteria do not significantly impact the decision. As a result, the fully sustainable car will be electrified. We further assume that, with the growing prevalence of climate protection concerns and the emergence of a younger, relatively wealthy generation of eco-conscious consumers with more discretionary income to spend, the prerequisites for “turning green into gold” are in place.

Starting from a 50% electrification share of global new car sales in 2030 (an assumption for the hypothetical OEM based on the EU’s 2035 CO_2 neutrality target for new passenger cars and light commercial vehicles) and the pricing of existing packages that primarily offer emotional value (e.g., cosmetic enhancements rather than bundled functional features), top-line potential can be modelled by modifying package prices and respective customer pick-rates.

Diving deeper into pick-rates and personas, a recent Harvard Business Review study (“How to Market Sustainable Products,” HBR, March – April 2024) categorized consumers into three groups: Greens, or "true believers," highly prioritize sustainability, actively seek it in their purchasing decisions, and are often willing to compromise on performance or cost to achieve it. Blues, or "agnostics," place moderate importance on sustainability, typically favouring sustainable options over alternatives if the price premium is reasonable or non-existent. Grays, or "disbelievers," place little to no value on sustainability and may even regard it with scepticism. With a fully sustainable offering, which neither enhances nor diminishes the product's primary attributes, such as the sustainable line, it is likely that target customers mainly fall into the category of “true believers”. While many consumers express an awareness of environmental issues, such as the “agnostics”, their actions often fail to align with these values, particularly when sustainable alternatives are significantly more expensive or demand greater effort.

Drawing on these findings, we assume that 2% to 5% of the OEM’s global customer base, representing “true believer” ⟶

consumers, would be willing to purchase fully sustainable vehicles at higher prices than less sustainable equivalents.

Regarding price ranges, comparable non-functional or semi-functional packages, such as the S-Line (Audi), AMG-Line (Mercedes-Benz), and the M-Sport Package (BMW), are priced between €2,500 and €4,000 for a mid-size premium vehicle in Germany. With similar emotional benefits offered by the sustainable line, conservative pricing could range between €2,000 and €5,000 for an average electrified premium vehicle.

Using this range, we project that, by 2030, the hypothetical OEM could realise between €46 million in annual profit in a worst-case scenario and €290 million in a best-case scenario from offering a sustainable line (see Figure 2).

The significant additional profit potential across the board demonstrates that monetizing sustainability is a viable and relevant option to boost the OEM's financial results. Especially in an era of industry-wide bottom-line optimization and ambitious cost-cutting targets, value-based top-line growth initiatives, built around a strong product base, should not be overlooked by OEMs.

Up to €290 million yearly profit potential*

*Refers to additional profit from new car sales; significant additional aftermarket profits from spare parts not included

FIGURE 2
ANNUAL ADDITIONAL PROFIT FROM FULLY SUSTAINABLE VEHICLES AT AN EXEMPLARY GERMAN PREMIUM OEM, 2030

Quelle: Berylls by AlixPartners; IHS

4 HOW TO MONETIZE SUSTAINABILITY USING THE TPMC APPROACH

To turn sustainability into a profitable business model, OEMs should adopt a structured, comprehensive methodology, which we call the "TPMC approach".

To generate real value, sustainability initiatives in the automotive market must be:

Tangibilized

» by transforming the concept into a physical or tangible form

Productized

» in a form that is ready to go to market

Monetized

» by generating revenue from the product or service

Commercialized

» by scaling up and expanding its market reach

We developed this approach through work with partners in manufacturing and technology, who have successfully tested it across a broad range of projects. TPMC can also guide OEMs and suppliers in the automotive industry in monetizing their sustainability efforts effectively. The first step, however, is to conduct a proper market segmentation.

Understanding target customer segments
Segmentation is often overlooked in sustainability marketing, especially in the automotive sector. Not all customers prioritize environmental responsibility, and willingness-to-pay varies across age, gender, and generational groups.

It is essential that OEMs identify those customer segments which are most receptive to sustainable vehicles, features and services offerings.

Key questions are:

» Who are the target customers for sustainable vehicles?

» Which sustainable options or services create most value for them?

» What is their willingness to pay for these options and services?

Generational and gender divides play significant roles in shaping green vehicle purchases. Younger millennial or Gen Z consumers tend to be more environmentally conscious, for example, while older generations are more likely to prioritize cost and reliability.

Fleets and other B2B customers also require effective segmentation. Factors to consider include the customer's sustainability strategy, maturity level, and published sustainability scores.

Willingness-to-purchase and the green premium
Consumers' willingness to purchase green vehicles depends on factors such as environmental concerns, cultural standards, and the perceived effectiveness of their purchase decisions. The green premium - the additional cost consumers are willing to pay for

environmentally friendly vehicles - is becoming increasingly relevant. While some are prepared to pay this premium, others remain price-sensitive and need incentives.

Tangibilizing sustainability initiatives
Many OEMs struggle to make the impact of sustainability initiatives seem tangible, particularly regarding customer offerings. By defining clear metrics, claims, and outcomes, OEMs can demonstrate the customer value of these initiatives.

Productizing tangible offerings
After sustainability initiatives are made tangible, the next crucial step is to turn them into concrete offerings for the customer. This means converting services or features into clearly defined, marketable products with specific attributes. By doing so, OEMs can more effectively commercialize sustainability, attract new customer segments, and unlock additional revenue streams through green vehicle features.

Monetizing sustainability: choosing the right model
Monetizing sustainable automotive products and services requires aligning the strategy with the offering's value. The more innovative the solution, the more sophisticated the pricing model. Ways to monetize include:

- **Indirect monetization through competitive advantage:** Sustainability can increase market share by attracting consumers who prefer eco-conscious brands. It also enhances brand loyalty and public perception, indirectly supporting profitability.
- **Direct monetization via price premiums:** These include standalone features as optional add-ons, such as recycled windshields; bundled features, such as a sustainable interior package with recycled materials and vegan leather; and green product lines, similar to premium performance lines.
- **New Business Models, e.g. multi-cycle sales models:** Sales shift from one-off transactions to recurring services which increase the vehicle's utilization and thereby reduce the number of vehicles on the road. Vehicle-as-a-Service (VaaS) models also extend the vehicle's lifetime through refurbishment and retrofitting, before end-of-life recycling and remanufacturing. Our research indicates that VaaS models can be more profitable than traditional sales, with recurring revenue from subscriptions and services boosting lifetime value per vehicle.

Pricing Strategies
Different pricing strategies can be leveraged to maximize revenues from sustainability, depending on the monetization model chosen:

- **Value-based pricing:** Reflects the perceived value of sustainable vehicle features, based on willingness-to-pay and evolving regulations.
- **Dynamic pricing:** Adjusts prices based on regulatory environments and subsidies, responding flexibly to market conditions.
- **Tiered pricing:** Offers different levels of sustainability at various price points, allowing OEMs to cater to a broader audience.
- **Incentivized pricing:** Initial discounts or rebates can drive adoption of green features, supported by government tax breaks or incentives.

Commercializing sustainability
This involves taking sustainable vehicle features and models from development to market, ensuring successful adoption and scaling. It requires a comprehensive strategy that covers everything from launch planning and production processes to marketing and aftersales support. OEMs need to target eco-conscious markets, train internal teams about the benefits of sustainable products, and use marketing campaigns that highlight the environmental impact of their vehicles. A well-executed commercialization plan helps OEMs meet demand and position themselves as leaders in the green automotive market, ensuring long-term success.

DEEP DIVE | COMMERCIALIZING SUSTAINABILITY

Bringing a new sustainable line to market

LAUNCH PLANNING

- **Choice of markets:** Start with eco-conscious markets that are known for their strong focus on sustainability, such as the Nordic countries or Canada. Expand the launch based on initial feedback.
- **Backward planning:** Set launch dates and work backward to coordinate production, logistics, marketing, pricing, sales and dealer training.

PROCESS MANAGEMENT

- **Internal coordination:** Align departments on sustainability goals and provide comprehensive employee training.
- **Green production processes:** Ensure vehicles are produced with sustainable practices, sourcing responsibly and minimizing waste.

CHANNEL STRATEGY

- **Current channels:** Leverage existing sales channels, with adjustments for sustainability features where needed.
- **Direct-to-consumer sales (DTC):** For eco-conscious consumers, a DTC model may be more effective, offering customizable green options online

DEMAND GENERATION

- **Marketing:** Tailor campaigns to highlight the vehicle's sustainability features and integrate them into the customer journey.
- **Influencer engagement:** Communicate with sustainability advocates to build credibility and reach new audiences.

AFTERSALES PREPARATION

- **Service readiness:** Train service teams to maintain sustainable vehicle features and promote green repair practices.
- **Customer support:** Equip teams to address questions about sustainable vehicle features and technologies.

CONTINUOUS IMPROVEMENT

- **Monitoring:** Track the financial and environmental impacts of sustainable vehicle offerings.
- **Customer feedback:** Use ongoing feedback to refine product offerings and ensure they meet evolving consumer needs.

5

HOW PRICING TEAMS CAN SELL FULLY SUSTAINABLE VEHICLES EFFECTIVELY

New sustainable offerings have implications for pricing teams that we have carefully evaluated during our research and work with clients. The key considerations are:

Shift toward value-based pricing
Pricing teams need to move from traditional cost-plus pricing to value-based pricing. This requires understanding the perceived value of sustainability features from the customer's perspective, including long-term savings, environmental impact, and social responsibility. Teams should develop a customer-centric mindset, focusing on how much consumers are willing to pay for sustainable attributes rather than simply covering costs and adding a margin.

Enhanced analytical skills for complex pricing models
Sustainable vehicles often have more complex cost structures because they use premium materials and incorporate advanced technology. Pricing teams must improve their analytical skills to deal with these complexities. For example, electric vehicles (EVs) can cost up to 45% more to manufacture than traditional combustion engine cars due to expensive battery technology and lightweight materials such as aluminum and carbon fiber. Pricing teams need to consider both initial production costs and lifecycle costs in their pricing models.

Dynamic pricing strategies
It is critical for pricing teams to consider market shifts to maintain competitiveness. For example, many governments offer incentives such as EV tax credits, while demand can also be affected by regulatory changes. To keep pace with market-moving events, teams require skills in advanced data analytics and scenario modeling, and a deep understanding of cost structures related to sustainable practices.

Collaboration across functions
Pricing decisions for sustainable products will increasingly require close collaboration with other departments such as product development, marketing and sustainability teams to align pricing strategies with product features, brand messaging, and regulatory requirements.

Customer education and communication
Pricing teams must work closely with marketing and sales teams to ensure that the value proposition of sustainable vehicles is clearly communicated to customers. This includes justifying premium prices by highlighting benefits such as lower total cost of ownership, reduced environmental impact, and compliance with future regulations.

6 ACT NOW TO MONETIZE SUSTAINABILITY

The automotive industry is currently navigating multiple significant challenges, including a struggling Chinese market (from a Western perspective), slow adoption of battery electric vehicles (BEVs), and mounting cost pressures. These crises have understandably diverted senior management's attention, pushing sustainability further down the priority list.

However, we believe that periods of declining OEM profits present a unique opportunity to explore new revenue streams and profit pools. NOW is the time for the automotive industry to take decisive action to enhance both economic and ecological sustainability.

Given the extended product development cycles typical in the automotive sector, companies that prioritize integrating sustainability into innovative products and services today will gain a competitive advantage. By doing so, they position themselves to capitalize on these initiatives and monetize sustainability in the future, far ahead of their competitors.

If you would like to engage in discussions on how you can leverage sustainability for top-line growth, do not hesitate to contact us!

info@berylls.com

Thorsten Lips
Partner
thorsten.lips@berylls.com

Tobias Detzler
Project Manager
tobias.detzler@berylls.com

Arndt Heller-Andor
Senior Consultant
arndt.heller-andor@berylls.com

Stephan Liozu
Sustainable Pricing Expert
sliozu@gmail.com

by AlixPartners

Maximilianstraße 34 | 80539 München | +49 89 710 410 40-0

info@berylls.com | www.berylls.com