NYU STERN

Center for
Sustainable Business

Investing in Sustainable Sourcing in the Auto Industry: Proposed Benefits & Monetization Methods

November 2025



© 2025, New York University. Leonard N. Stern School of Business, Center for Sustainable Business. All rights reserved.

Disclaimer

DISCLAIMER: This tool is provided by NYU Stern Center for Sustainable Business for informational and educational purposes only. It is not to be used for commercial use except through prior written agreement. While every effort has been made to ensure the accuracy and reliability of the data and calculations contained within this tool, NYU Stern Center for Sustainable Business makes no warranties, express or implied, regarding its completeness, accuracy, or fitness for a particular purpose. Users assume full responsibility for any decisions made based on the outputs of this tool. New York University and its affiliates, faculty, staff, and students shall not be liable for any direct, indirect, incidental, or consequential damages arising from the use of this tool. This tool is provided “as is” and may be subject to updates or modifications without notice. Users must cite NYU Stern CSB when using the tool and references to ROSI™ materials. Users should verify all results independently and consult with appropriate professionals before relying on the data and results provided. By using this tool, you acknowledge and agree to these terms.

ROSI™ Framework

Return on Sustainability Investment (ROSI™) Framework



By embedding ESG risk and opportunities within core business strategy, the return on sustainable investment can be quantified, delivering the possibility of both financial value and positive societal impact.

Overview of Auto Industry Framework

NYU Stern CSB is developing a ROSI™ framework for the auto industry with publicly available monetization tools to help the industry understand where and how sustainability can unlock financial value.

Based on research, experience, and engagement with industry leaders, we have identified the following sustainability strategies* used by the industry to include in the framework:

- Mitigate & Adapt to Climate Change
- Waste Management
- Water Management
- Chemical Management
- Support Electrification Ecosystem
- Circularity
- Cyber Security
- Sustainable Sourcing
- Driver Safety
- Supplier and Employee Well-Being

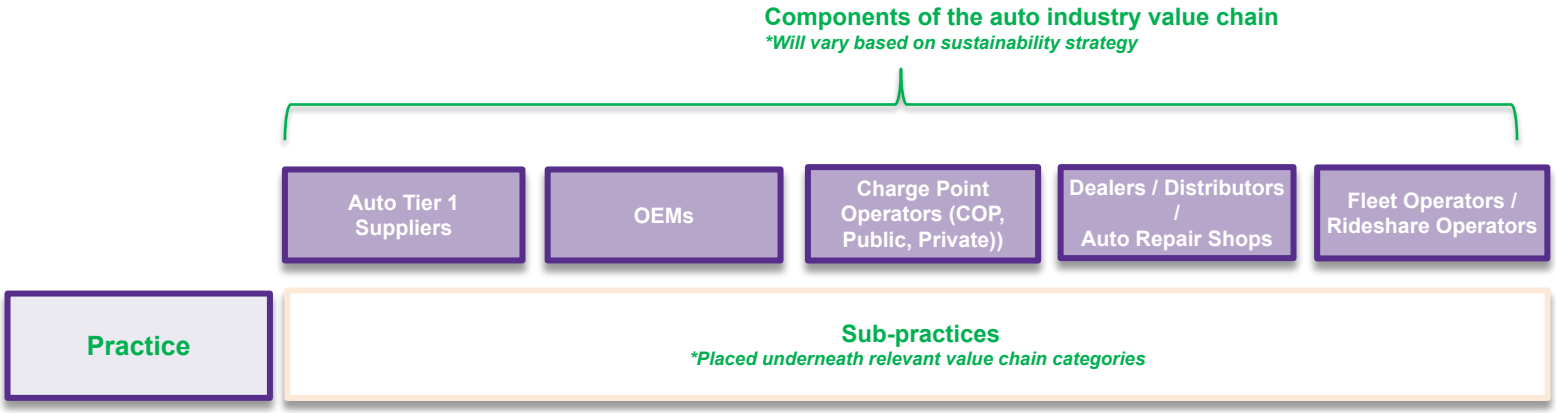
Identified Sustainability Practices and Sub-Practices

Framework Layout

Through our research, we identified key sustainability practices and sub-practices that auto industry value chains are using to achieve their sustainability goals.

- **Each practice is broken into sub-practices, which are mapped to the relevant components of the value chain (and excluded where not applicable).**
- **Benefits are mapped to sub practices, with some benefits appearing across multiple practices.**
- **Specific compliance or enforcement policies are not listed in this framework, except for the new Cross Border Adjustment Mechanism regulations.**

The diagram below illustrates the framework applied for each strategy in the following slides



NYU STERN

Center for
Sustainable Business

Investing in Sustainable Sourcing

Investing in Sustainable Sourcing

	Auto Tier 1 Suppliers	OEMs	Charge Point Operators	Dealers / Distributors / Auto Repair Operations	Fleet Operators / Rideshare Operators
Set and Enforce Sustainable Sourcing Requirements	Incorporate sustainable sourcing requirements in supplier contracts				
	Conduct regular supplier audits of value chain partners (through company or third-party auditing)				
	Monitor and verify supplier compliance				
Improve Supply Chain Transparency	Create detailed supply chain maps to track sourcing origin				
	Implement advanced technologies (such as Blockchain) to monitor materials from mines to product				
	Disclose supply chain practices in published reports				
Invest to Secure Supply of Critical and Conflict-Free Minerals and Materials	Diversify supply sources of critical materials				
	Support initiatives to help artisanal and small scale mining companies operate legally and ethically				
	Innovate or substitute new materials as alternatives to critical minerals to reduce dependency				

Comment: Many of these practices could be implemented by all value chain participants. It is most relevant for OEMs and suppliers.

Investing in Sustainable Sourcing (continued)

	Auto Tier 1 Suppliers	OEMs	Charge Point Operators	Dealers / Distributors / Auto Repair Operations	Fleet Operators / Rideshare Operators
Increase Use of Sustainable Materials & Parts	Source reused, recycled or low carbon materials (such as green steel and green aluminium)				
	Source biodegradable materials (such as like natural rubber, flax, hemp, kenaf and jute)				
	Source recycled and reused parts (such as recycled plastic and refurbished auto parts)			Source recycled and reused parts and materials (remanufactured components, bio-based or recycled content oils, tires with higher recycled content)	
Develop Sustainability Partnerships Across Supply Chain	Partner with key partners on environmental and social responsibility trainings (on matters such as health and safety and fair labor practices, and if applicable, sustainable mining practices)			Partner with key partners on environmental and social responsibility trainings (on matters such as health and safety and fair labor practices, and if applicable, sustainable mining practices)	
	Partner with third-parties (NGO, Govt. and industry groups) and/or supply chain partners to avoid environmental or human rights violations				
	Implement preferred supplier status and premiums for sustainability practices				
	Join industry alliances promoting sustainable sourcing				

NYU STERN

Center for
Sustainable Business

Monetization Approach

Investing in Sustainable Sourcing

Overview of Sustainability Strategy and Relevant Value Drivers

Sustainability Strategy Definition

Sustainable Sourcing

Auto industry companies are investing in sustainable sourcing strategies by increasing their use of sustainable materials and securing ethically-sourced critical materials and conflict minerals. Key approaches include establishing rigorous sourcing requirements, mandating supplier certifications, forming strategic supply chain partnerships, and implementing robust traceability systems with regular audits to prevent environmental damage and human rights violations.

The following slides focus on the benefits and relevant value drivers derived from the *Sustainable Sourcing* strategy

Relevant Value Drivers	**Benefits that…**
Operational Efficiency (OE)	Optimize corporate and supply chain efficiencies to lower cost and increase profits
Risk Management (RM)	Encourage risk mitigation and resilience within the value chain
Sales and Marketing (SM)	Increase volume of sales through brand and marketing policies
Supplier Relations (SR)	Improve upon the relationships between the company and its suppliers

Investing in Sustainable Sourcing

Overview of Sustainability Strategy and Relevant Value Drivers (continued)

The following slides focus on the benefits and relevant value drivers derived from the *Sustainable Sourcing* strategy

Relevant Value Drivers	**Benefits that…**
Innovation (IN)	Create new revenue streams using sustainable business models
Stakeholder Engagement (SE)	Improve goodwill among the broader stakeholder community (i.e. investors, NGOs)
Media Coverage (MC)	Increase a company's media presence with the development of traditional and social media content

Value Drivers not Captured in this Strategy	
Talent Management (TM)	Attract and retain high-quality internal talent
Customer Loyalty (CL)	Attract an increasing community of conscious buyers & consumers, while reducing retention costs

Investing in Sustainable Sourcing Requirements

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Set and Enforce Sustainable Sourcing Requirements	Incorporate sustainable sourcing requirements in supplier contracts Conduct regular supplier audits of suppliers (through company or third-party auditing) Monitor and verify supplier compliance	Reduction in the likelihood of **supply shortages and disruption in production** and related costs	RM	Estimate the probability of supply disruptions and associated average costs related to environmental and social sustainability violations. Estimate the reduction in likelihood of an event related to sustainability issues. Apply the average costs to the estimate of reduced incidents to quantify the benefit
		Potential savings from improved **supplier relations** related engagement and enforcement of supplier practices	SR, OE	Measure the impact of the practice implementation on vendor management and contract administration costs (legal costs, accounts payables staffing), working capital, and inventory management (improved delivery times, lower buffer stock) to quantify the benefits
		Increased preparedness for existing and/or new or changing laws, rules, or standards and decreased likelihood of receiving a **fine or any other regulatory sanction**	RM	Assess the probability of experiencing a regulatory sanction and the associated average costs (fines, administrative costs, cost of production delays, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of being sanctioned now or in the future associated with the practice implementation. Multiply the probability reduction by the average costs to quantify the benefit

*Each Sub-Practice has the potential to drive all benefits.

OE	RM	SR
SM	SE	MC
CL	TM	IN

Value Drivers based on color coding illustrated on previous slides

Investing in Sustainable Sourcing Requirements (continued)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers		Suggested Monetization Methods
Set and Enforce Sustainable Sourcing Requirements	Incorporate sustainable sourcing requirements in supplier contracts ——— Conduct regular supplier audits of suppliers (through company or third-party auditing) ——— Monitor and verify supplier compliance	Decreased likelihood of being found in **non-compliance** with industry standards (labor exploitation, human rights violations, etc.) and receiving a **fine or any other regulatory sanction**	RM	OE	Assess the probability of experiencing a regulatory sanction and the associated average costs (fines, administrative costs, cost of production delays, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of being sanctioned associated with the practice implementation. Multiply the probability reduction by the average costs to quantify the benefit
		Decreased likelihood of **reputational incidents** avoiding related costs	RM		Assess the probability of a reputational incident and the associated average costs (including potential sales impacts, administrative costs, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of such an event due to the practices implemented. Multiply the probability reduction by the average costs to quantify the benefit

*Each Sub-Practice has the potential to drive all benefits.

Investing in Supply Chain Transparency

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Improve Supply Chain Transparency	Create detailed supply chain maps to track sourcing origin ——— Implement advanced technologies (such as blockchain) to monitor materials from mines to end product ——— Disclose supply chain practices in published reports	Increased transparency of supply chain can support **optimization of sourced minerals and materials**** and reduce costs	OE	Identified savings in costs such as compliance and admin costs, waste and inventory, and foreign exchange exposures due to improved transparency to quantify the benefit
		Increased transparency may result in an **increase in sales** due to improved customer service and **brand image**	SM	Calculate the additional volumes of business earned from existing and/or new customers driven by improving transparency. Multiply by an average sales price to calculate the total $ value and apply an average margin % (that may include the impact of additional costs) to estimate the additional profit driven by improved customer sales

*Each Sub-Practice has the potential to drive all benefits.

**Identifying, prioritizing, and utilizing resources in the most efficient and effective manner possible

Investing in Secured Supply of Critical and Conflict-Free Minerals & Materials

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Invest to Secure Supply of Critical and Conflict-Free Minerals and Materials	Diversify supply sources of critical materials	Reduces dependence on single supplier, country, and/or material and risk of **supply disruption** and related costs	OE, RM	Estimate the probability of supply disruptions and associated average costs related to critical minerals and materials sourcing. Estimate the reduction in likelihood of an event related to supplier sourcing issues. Apply the average costs to the estimate of reduced incidents to quantify the benefit
	Support initiatives to help artisanal and small scale mining companies operate legally and ethically	Product differentiation can improve **customer sales**	SM	Calculate the additional volumes of business earned from existing and/or new customers driven by new products. Multiply by an average sales price to calculate the total $ value and apply an average margin % (that may include the impact of additional costs) to estimate the additional profit driven by improved customer sales
	Innovate or substitute new materials as alternatives to critical minerals to reduce dependency	Substitute materials may lower **operational costs,** including input sourcing costs and compliance cost	OE	Calculate the per unit costs (of materials, waste, water and energy use, transportation or other costs such as compliance administration) before and after use of substitute materials. Multiply each differential in costs per unit, adjusting for any needed conversion rates for materials (to total units produced), to identify savings associated with investment in alternatives materials (new or substitute)

*Each Sub-Practice has the potential to drive all benefits.

Investing in Secured Supply of Critical & Conflict-Free Minerals & Materials (cont.)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Invest to Secure Supply of Critical and Conflict-Free Minerals and Materials	Diversify supply sources of critical materials ——— Support initiatives to help artisanal and small scale mining companies operate legally and ethically ——— Innovate or substitute new materials as alternatives to critical minerals to reduce dependency	Increased preparedness for new or changing laws, rules, or standards and decreased likelihood of receiving a fine or any other **regulatory sanction**	RM	Assess the probability of experiencing a regulatory sanction and the associated average costs (fines, administrative costs, cost of production delays, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of being sanctioned now or in the future associated with the practice implementation. Multiply the probability reduction by the average costs to quantify the benefit
		Avoided **costs and revenue loss** from conflict mineral and materials scandals (**reputation risk**)	RM	Assess the probability of a reputational incident and the associated average costs (including potential sales impacts, administrative costs, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of such an event due to the use of alternative materials (reduced exposure to environmental and social risks). Multiply the probability reduction by the average costs to quantify the benefit

*Each Sub-Practice has the potential to drive all benefits.

Investing in Sustainable Materials and Parts for Manufacturing

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Impact Category	Suggested Monetization Methods
Increase Use of Sustainable Materials and Parts in Manufacturing Practices	Source recycled or low carbon materials (such as green steel and green aluminium) Source biodegradable materials (such as like natural rubber, flax, hemp, kenaf and jute) Source recycled and reused parts (such as recycled plastic and refurbished auto parts)	Increased use of substitute sustainable materials lowers **GHG emissions**	OE	Calculate the average annual per unit GHG emissions before (baseline year) and after material changes have been made. Multiply the reduction in GHG emissions with an associated cost per unit (e.g. internal price of carbon or carbon offset costs) to quantify the benefits Alternative approach is to consider the reduction in emissions as a hedge against rising cost of carbon costs. In this case, forecast future carbon prices and multiply the amount of emission reduction by the change in carbon price to quantify the benefit
		Increased preparedness for new or changing laws, rules, or standards and decreased likelihood of receiving a **fine or any other regulatory sanction**	RM	For taxes: Assess the impact of procurement options on direct and indirect tax liabilities to assess the costs and benefits. For fines: Assess the probability of experiencing a regulatory sanction and the associated average costs (fines, administrative costs, cost of production delays, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of being sanctioned associated with the change in material mix. Multiply the probability reduction by the average costs to quantify the benefits For tariffs & other carbon related liabilities: Assess the impact of tariffs and tax liabilities related to changes in material sourcing to quantify the benefits

*Each Sub-Practice has the potential to drive all benefits.

Investing in Sustainable Materials and Parts for Manufacturing (continued)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Increase Use of Sustainable Materials and Parts in Manufacturing Practices	Source recycled or low carbon materials (such as green steel and green aluminium) Source biodegradable materials (such as like natural rubber, flax, hemp, kenaf and jute) Source recycled and reused parts (such as recycled plastic and refurbished auto parts)	Increased sustainable material use can increase **brand engagement** and lead to unpaid media coverage	MC	Gather average annual paid media costs and number of paid media placements to calculate an average cost per placement. Identify the number of unpaid media exposures and multiply by the average cost per placement for paid media to quantify the benefit
		Increased sustainable material use reduces GHG emissions which lead to Improved price earnings (PE) multiples, driving greater **market capitalization**	SE	Forecast reduced carbon emissions. And for every 10% decrease in emissions calculate the impact of a 0.49% improvement (proxy based on Lazard Research 2021) in price earnings ratio. link to research
		Increased use of sustainable or recycled materials may lead to **reduced costs** related to energy and water use, input prices, waste, etc.	OE	Calculate the per unit costs (of materials, waste, water and energy use or other costs) before and after use of recycled and sustainable materials. Multiply each differential in costs per unit to identify savings associated with sourcing recycled and sustainable materials

*Each Sub-Practice has the potential to drive all benefits.

Investing in Sustainable Materials and Parts for Manufacturing (continued)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Increase Use of Sustainable Materials and Parts in Manufacturing Practices	Source recycled or low carbon materials (such as green steel and green aluminium) Source biodegradable materials (such as like natural rubber, flax, hemp, kenaf and jute) Source recycled and reused parts (such as recycled plastic and refurbished auto parts)	Increased use of sustainable or recycled materials may increase access to **government incentives and favorable financing terms**	OE	Identify the type of government incentive that applies and calculate the credit amount available. For financing terms, identify the borrowing rate differential and tenure of favorable financing. Multiply the favorable rate by loan amount to quantify the benefit
		Working with the supply chain (including new supplier relationships) to introduce more sustainable or recycled materials can lead to **supplier relations**	SR	Measure the impact of increasing recycled and sustainable materials on vendor management and contract administration costs (legal costs, accounts payables staffing), working capital, and inventory management (improved delivery times, lower buffer stock)
		Increased use of recycled/ sustainable materials reduces exposure to human rights and environmental issues throughout the supply chain and decreases risk of a **supply disruption**	RM, OE	Estimate the probability of supply disruptions and associated average costs (production delays, vendor switching costs, transportation, price increases, etc.) related to virgin material use and exposure to a variety of supply chain risks (human rights, environmental, climate change events, etc.). Estimate the reduction in the likelihood of such an event due to diversification of materials (i.e. reduction in risk may be tied to a reduction in use of virgin materials). Apply the average costs to the estimate of reduced incidents to quantify the benefit
		Increased use of recycled/ sustainable materials reduces exposure to **carbon tax and tariffs** in select jurisdictions	RM	Assess suppliers and quantify direct and indirect impacts of cross border adjustment mechanism tax and tariffs associated with material input. Calculate the current mix (business as usual case) to forecasted mix of materials to quantify the benefits

*Each Sub-Practice has the potential to drive all benefits.

Investing in Sustainable Materials and Parts for Manufacturing (continued)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Increase Use of Sustainable Materials and Parts in Manufacturing Practices	Source recycled or low carbon materials (such as green steel and green aluminium) Source biodegradable materials (such as like natural rubber, flax, hemp, kenaf and jute) Source recycled and reused parts (such as recycled plastic and refurbished auto parts)	Recycling parts and materials in manufacturing provides the opportunity for **revenue** from selling scrap to recyclers	SM	Calculate the amount of waste to be sold to recyclers and multiply by the average price to quantify the benefit
		Increased use of recycled/sustainable materials can lead to improved **compliance** and reduced related costs	OE	Calculate current compliance and admin costs per unit of production before and after implementing third party programs. Multiply the difference by the units produced to quantify the benefit
		Increased use of recycled/sustainable materials can reduce exposure to raw material input **price volatility**	OE	Compare historical volatility of virgin vs. recycled aluminum/steel prices, and traditional vs. biodegradable materials, to assess the potential for avoided costs due to lower forecast volatility to quantify the benefit
		Increased use of recycled/sustainable materials can increase **innovation**	IN	Identify product, process and/or circularity innovations related to recycled or low carbon materials across the sustainable supply chain and estimate the impact on costs, risk management, and product sales

*Each Sub-Practice has the potential to drive all benefits.

Investing in Partnership to Promote Sustainability

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Develop Partnerships to Promote Sustainability within the Supply Chain	Partner on environmental and social responsibility trainings (on health and safety, fair labor practices, sustainable mining practices) ——— Partner with third-parties (NGO, govt., industry groups) and/or supply chain partners on responsible sourcing programs ——— Implement preferred supplier status and premiums for sustainability practices ——— Join industry alliances promoting sustainable sourcing	Collaboration with partners and across the supply chain on sustainability programs and practices third parties can drive **innovation** in sustainable products and processes	IN	Identify product or process innovations related to collaboration with third parties on a sustainable supply chain and estimate the impact on costs, risk management, and product sales
		Collaboration with partners and across the supply chain on sustainability programs and practices can support savings related to improved **compliance** and reduced related costs	OE	Calculate current compliance and admin costs per unit of production before and after implementing third party programs. Multiply the difference by the units produced to quantify the benefit
		Supplier partnerships can avoid **revenue loss** from sustainability-focused scandals (**reputation risk**) or lower sustainability rankings/ratings (customer driven)	RM	Assess the probability of a reputational incident and the associated average costs (including potential sales impacts, administrative costs, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of such an event due to engagement with third parties. Multiply the probability reduction by the average costs to quantify the benefit
		Increased promotion of sustainable practices, training, and collaboration across the supply can lead to improve both **supplier and community relations**	SR	Measure the impact of supplier collaboration on vendor management and contract administration costs (legal costs, accounts payables staffing), working capital, and inventory management (improved delivery times, lower buffer stock). And measure the impact of community engagement on costs associated with permitting, legal/PR, safety, etc. to quantify the benefit

*Each Sub-Practice has the potential to drive all benefits.


NYU STERN
Center for
Sustainable Business