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Center for Sustainable Business

Investing in the Electrification Ecosystem in the Auto Industry: Proposed Benefits & Monetization Methods

November 2025



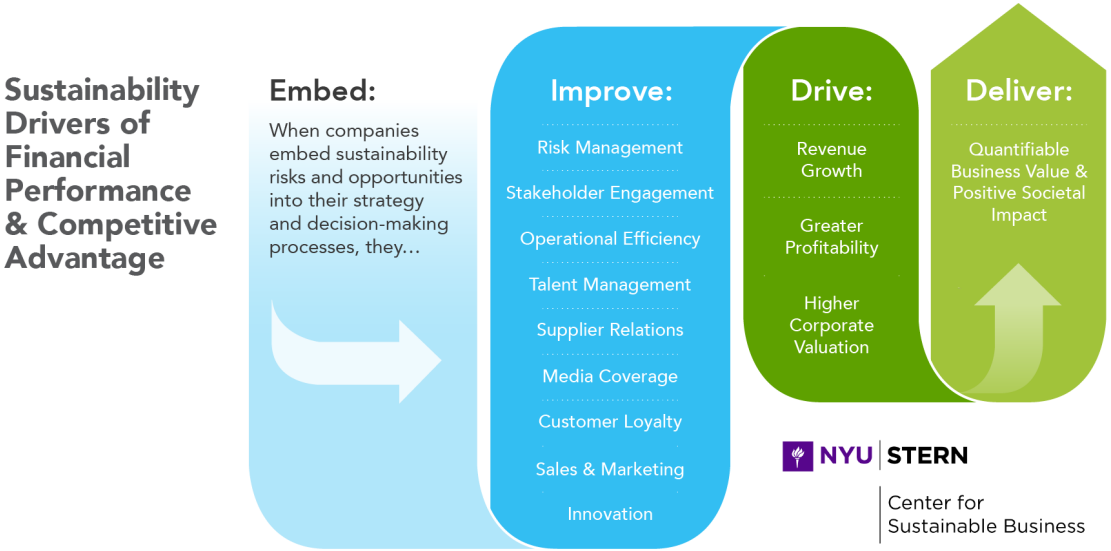
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ROSI™ Framework

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

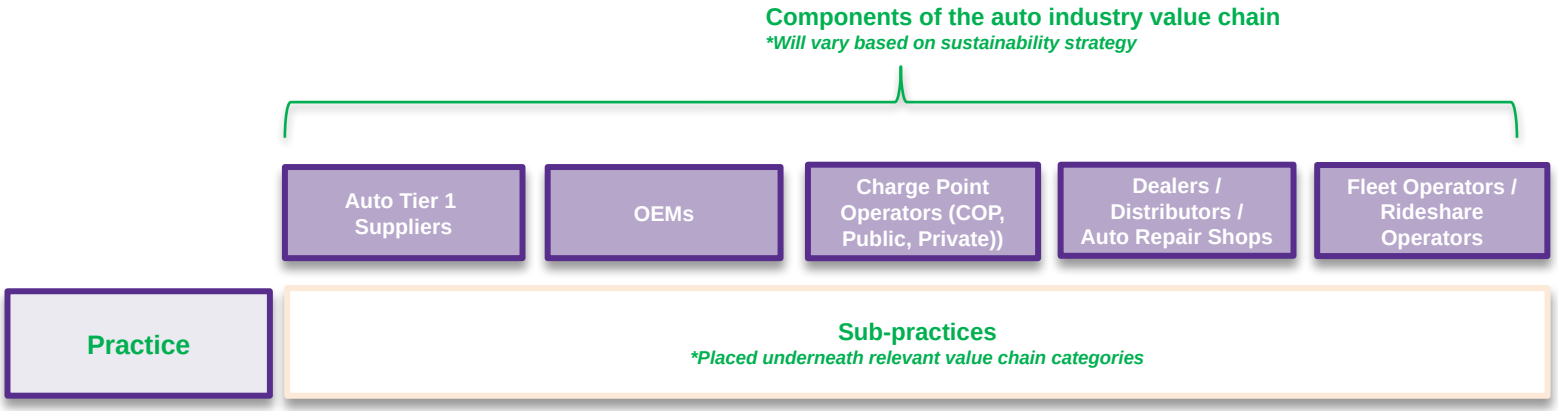
Identified Sustainability Practices and Sub-Practices

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



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Investing in Supporting the Electrification Ecosystem

Investing in the Electrification Ecosystem

	Auto Tier 1 Suppliers	OEMs	Charge Point Operators	Dealers / Distributors / Auto Repair Operations	Fleet Operators / Rideshare Operators
Accelerate EV Charging Network Expansion		Partner / invest with existing or potential CPO partners to build charging infrastructure			
		Open access and provide CCS (Combined Charging System) adapters at OEM-owned charging stations			
Offer Convenient Battery Charging Services	Portable batteries and/or home use charging station offered at point of sale or aftermarket			Portable batteries and/or home use charging station offered at point of sale or aftermarket	
		Battery-As-a-Service: Offer subscription-based models for battery use*			
Increase Awareness on Benefits of EVs		Implement campaigns to change consumer perceptions in favor of EVs			
		Partner across the supply chain to increase awareness			
		Engage with trade groups, form coalitions and lobby on public policy changes to support EV expansion			
Invest in Battery Tech and Optimal Battery Life		Work with battery manufacturers and tech firms, universities and research centers to find new ways to improve charging efficiency and extend battery life			

*Examples today include Nio (Chinese OEMs) and use in freight/trucking applications.

Investing in the Electrification Ecosystem

	Auto Tier 1 Suppliers	OEMs	Charge Point Operators	Dealers / Distributors / Auto Repair Operations	Fleet Operators / Rideshare Operators
Invest in Alternative Fuel Technologies (such as Hydrogen and Synthetic) and Related Infrastructure	Direct R&D investment in developing fuel-cell EVs and e-fuel-compatible engines				
	Partner / Invest with existing or potential partners to build fueling technology and infrastructure				

*Examples today include Nio (Chinese OEMs) and use in freight/trucking applications.

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Monetization Approach

Investing in Supporting the Electrification Ecosystem

Overview of Sustainability Strategy and Relevant Value Drivers

Sustainability Strategy Definition

Supporting the Electrification Ecosystem

Auto industry companies are advancing electrification by investing in EV infrastructure, improving battery technology and lifespan, expanding access to convenient charging services, and increasing consumer awareness of EV benefits. Key actions include partnering across the supply chain to develop technology and infrastructure, collaborating with battery manufacturers, tech firms, and universities to enhance charging efficiency and performance, and introducing new services such as Battery-as-a-Service and portable battery solutions.

The following slides focus on the benefits and relevant value drivers derived from the *Supporting the Electrification Ecosystem* strategy

Relevant Value Drivers

	Benefits that…
Operational Efficiency (OE)	Optimize corporate and supply chain efficiencies to lower cost and increase profits
Sales and Marketing (SM)	Increase volume of sales through brand and marketing policies
Risk Management (RM)	Encourage risk mitigation and resilience within the value chain
Stakeholder Engagement (SE)	Improve goodwill among the broader stakeholder community (i.e. investors, NGOs)

Investing in Supporting the Electrification Ecosystem

Overview of Sustainability Strategy and Relevant Value Drivers (continued)

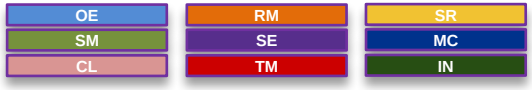
The following slides focus on the benefits and relevant value drivers derived from the *Supporting the Electrification Ecosystem* strategy

Relevant Value Drivers	**Benefits that…**
Customer Loyalty (CL)	Attract an increasing community of conscious buyers & consumers, while reducing retention costs
Innovation (IN)	Create new revenue streams using sustainable business models
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
Supplier Relations (SR)	Improve upon the relationships between the company and its suppliers

Investing in EV Infrastructure

Overview of Benefits and Monetization Methods



Value Drivers based on color coding illustrated on previous slides

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Accelerate EV Charging Network Expansion	Partner/ invest with existing or potential CPO partners to build charging infrastructure ——— Open access and provide CCS (Combined Charging System) adapters at OEM-owned charging stations	Improve **sales of EVs** from increased access to charging infrastructure reducing barriers to purchase	SM	Assess the impact of additional charging stations on future sales and leases of EVs (consider either as risk mitigation against failure to meet the forecast or incremental sales opportunity) to quantify the benefit
		Access to **government incentives** and **favorable financing** rates through green bonds, etc.	SE, OE	Identify the type of government incentive that applies and calculate the credit amount available. Identify the borrowing rate differential and tenure of the favorable financing. Multiply the favorable rate by the loan amount to quantify the benefit
		Reduce **scope 3 GHG emissions** from increased sales of EV cars	RM	Estimate the incremental sales of EVs associated with extended charging network. Assuming alternative sales were ICE vehicles, calculate the scope 3 GHG emissions improvements to quantify the benefit
		Reduces CPO **operational costs**	OE	Identify cost savings related to hardware/integration costs, reduced peak demand energy costs from grid efficiencies, and billing and customer service efficiencies to quantify the benefit
		Avoid **regulatory risk**	RM, OE	Assess the probability of experiencing a regulatory sanction related to charging station access and the associated average costs (fines, administrative costs, legal/PR expenses) based on historical data or relevant proxies. Estimate the reduction in probability of being sanctioned associated with charging station access. Multiply the probability reduction by the average costs to quantify the benefit

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

Investing in Convenient Battery Charging Services

Overview of Benefits and Monetization Methods

Practice	Sub-Practice	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Offer Convenient Battery Charging Services	Portable batteries and/or home use charging station offered at point of sale or aftermarket	New **revenue** stream from charging products	CL	Calculate the revenues earned from existing and/or new customers or downstream stakeholders driven by selling portable batteries and/or home use charging stations. Assess the impact of offering portable batteries and/or home use charging stations on future sales and leasing of EVs (consider either as risk mitigation as failure to meet the forecast or incremental sales opportunity). Deduct any costs related to the new offerings to quantify the benefit
	Battery-As-A-Service: Offer subscription-based models for battery use*	Increased revenues by offering subscription-based services and improving **customer loyalty**	SM	Calculate the revenue from offering subscription sales and deduct the costs associated with delivering the service to quantify the benefit
		Increase **EV sales** due to lower upfront car costs	CL	Estimate the impact of offering Battery-As-A-Service on new and existing customer sales and compare to baseline sales to quantity the benefit

*Examples today include Nio (Chinese OEMs) and use in freight/trucking applications.

Investing in Battery Tech and Optimal Battery Life

Overview of Benefits and Monetization Methods

Practice	Sub-Practice	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Invest in Battery Tech and Optimal Battery Life	Work with battery manufacturers and tech firms, universities and research centers to find new ways to improve charging efficiency and extend battery life	Increase **EV sales** due to improved charging efficiency and improved resale value from extended battery life	SE, IN	Assess the impact improved charging efficiency and improve resale value from extended battery life on future sales and leases of EVs to quantify the benefit
		Reduce Scope 3 **GHG emissions** by increasing charging efficiency	SE, OE	Calculate the impact of new technologies on GHG emissions compared to prior technologies to quantify the benefit
		Access to **favorable financing** (such as green bonds) and **incentives** (such as government tax credits and rebates)	SE	Identify the type of government incentive that applies and/or the borrowing rate differential and tenure of the favorable financing available. Calculate the credit amount available and/or multiply the favorable rate by the loan amount to quantify the benefit
		Avoided battery r**eplacement costs** due to extended battery life	OE	Identify the impacts of extended battery life on warranty costs to quantify the benefit

Investing in Increasing Consumer Awareness on Benefits of EVs

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Increase Awareness on Benefits of EVs	Implement campaigns to change consumer perceptions in favor of EVs	Increase **EV sales** due to increased consumer awareness of benefits	SM	Compare the annual unit sales pre and post the campaign to increase awareness (including direct sales uplift, increased showroom traffic and conversion rates) Multiply the incremental units sold by the average margin per vehicle to quantify the benefit
	Partner across the supply chain to increase awareness	Improved **operating efficiency** related to advertising and customer acquisition costs	OE	Assess the impact of the marketing campaign on return on ad spend (ROI), and customer acquisition costs to quantity the benefit
	Engage with trade groups, form coalitions and lobby on public policy changes to support EV expansion	Reduced **inventory costs** associated with incremental sales related to increased customer awareness of EV benefits	OE	Identify savings in costs such as holding costs (storage, insurance, financing) and other inventory related costs due to increased sales of EVs to quantify the benefit

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

Investing in Increasing Consumer Awareness on Benefits of EVs (continued)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers		Suggested Monetization Methods
Increase Awareness on Benefits of EVs	Implement campaigns to change consumer perceptions in favor of EVs	Reducing **regulatory risk** of emissions limit violations due to increased sales of EVs	RM		Assess the probability of experiencing a regulatory sanction related to emissions requirements 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 an emissions limit violations due to increased EV sales. Multiply the probability reduction by the average costs to quantify the benefit
	Partner across the supply chain to increase awareness	Reduce **Scope 3 GHG emissions** by increasing sales of EVs compared to ICE	SM	OE	Calculate the differential in average annual per unit GHG emissions between ICE and EV vehicles and multiply by the expected or actual increase in units of EV cars sold due to the campaign to measure the emissions reduction amount. Multiply the amount of reduced emissions with an associated cost per unit (e.g. internal price of carbon or carbon offset costs) to quantify the benefit
	Engage with trade groups, form coalitions and lobby on public policy changes to support EV expansion	Increased **brand reputation**	CL	MC	Calculate the additional volumes of business earned from existing and/or new customers driven by improving awareness of EV benefits and EV partnerships. Multiply by an average sales price to calculate the total $ value and apply an average margin % (net of any additional costs) to quantify the benefit

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

Investing in Alternative Fuel Technologies

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Invest in Alternative Fuel Technologies (such as Hydrogen and Synthetic) and Related Infrastructure	Direct R&D investment in developing fuel-cell EVs and e-fuel-compatible engines ——— Partner / invest with existing or potential partners to build fueling technology and infrastructure	Increased **revenues** from potential licensing agreements	IN, SM	Calculate the additional revenues earned from licensing new alternative fuel technologies from existing and/or new customers or downstream stakeholders and deduct associated costs to quantify the benefit
		Reduced risk of **supply disruption** from limitations or constraints related to EV battery materials, such as lithium and cobalt	RM, OE	Estimate the probability of supply disruptions and associated average costs related to traditional powertrain, battery, part or material acquisition, including related environmental and social sustainability violations. Estimate the reduction in likelihood of an event due to alternative fuel technologies and multiply by the average costs of a supply disruption to quantify the benefit
		Improve **sales** of alternative fuel cars (such as hydrogen or synthetic fuel)	SM	Calculate the additional volumes of business that can be earned from existing and/or new customers driven by introducing new fuel technology vehicles. Multiply incremental volumes by an average sales price to calculate the total $ value and apply an average margin % and subtract additional costs to quantify the benefit

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

Investing in Alternative Fuel Technologies (continued)

Overview of Benefits and Monetization Methods

Practice	Sub-Practice*	Proposed Benefits	Value Drivers	Suggested Monetization Methods
Invest in Alternative Fuel Technologies (such as Hydrogen and Synthetic) and Related Infrastructure	Direct R&D investment in developing fuel-cell EVs and e-fuel-compatible engines Partner / invest with existing or potential partners to build fueling technology and infrastructure	Access to **favorable financing** (such as green bonds) and **incentives** (such as government tax credits and rebates)	SE, OE	Identify the type of government incentive that applies and/or the borrowing rate differential and tenure of the favorable financing available. Calculate the credit amount available. and/or multiply the favorable rate by the loan amount to quantify the benefit
		Reduce **Scope 3 GHG emissions** by reducing reliance on fossil fuels and electricity	RM	Calculate the differential in average annual per unit GHG emissions between new fuel technology vehicles versus ICE and EV vehicles and multiply by the expected or actual increase in units of new fuel technology cars sold due to the campaign to measure the emissions reduction amount. Multiply the amount of reduced emissions with an associated cost per unit (e.g. internal price of carbon or carbon offset costs) to quantify the benefit

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



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