Climate Action in Practice:

Actionable Insights to Increase Low Carbon Energy & Transport

April 2025

The Consumer Goods FORUM

Towards Net Zero

With the support of

BCG BOSTON CONSULTING GROUP

Welcome to the *Climate Action in Practice* Guide

The Consumer Goods Forum's Towards Net Zero Coalition has developed a new resource to help retailers and manufacturers turn climate ambition into action

This collection is organized into six focused packets, each addressing a specific challenge identified by our members. Every publication offers practical guidance, real-world examples, and actionable insights to accelerate progress toward a more sustainable future

Designed for companies at any stage of their climate journey, this guide provides the knowledge and support needed to drive meaningful change

Where to start | Six key challenges, one common framework

Six key challenges identified by our members:

REDUCE DEFORESTATION

Example activities

- Agroforestry; Re/Afforestation
- Deforestation-free sourcing

ENHANCE SUSTAINABLE AGRICULTURE

Example activities

- Cropland management
- Livestock management

MERCHANDISE SUSTAINABLE PRODUCTS

Example activities

- Increased availability of sust. goods and ingredients
- Promotion of sustainable products to drive adoption

REDUCE FOOD LOSS & WASTE

Example activities

- Shelf-life monitoring
- Responsible promotion tactics

INCREASE LOW-CARBON ENERGY & LOW-CARBON TRANSPORT

Example activities

- Low-emissions refrigeration
- Fuel switch to BEV
- Renewable heat & power

ADOPT CIRCULAR OR SUSTAINABLE PACKAGING

Example activities

- Reduction of unnecessary packaging
- Improved package-recyclability

For each key challenge, this publication provides the following resources:

- ***Shared vision of the future***
- ***Overview and key insights***
- ***Regional considerations***
- ***Actions retailers should consider***
- ***Relative impact & feasibility***
- ***Case studies & additional resources***

This documents highlights one are of focus. Refer to the full Action in Practice Guide for a comprehensive view across all six challenges

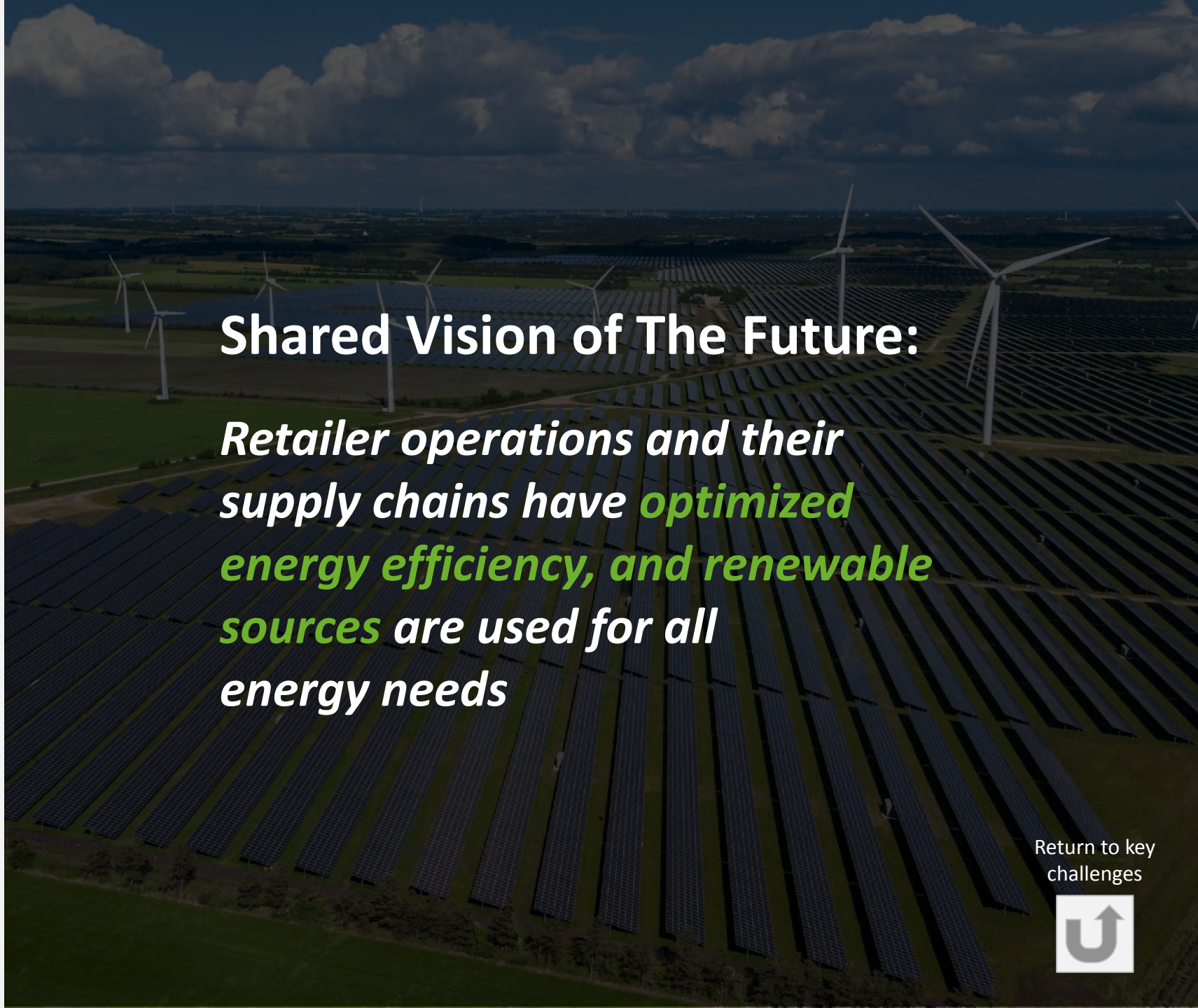
Note: Key action areas identified based on relative emissions reduction potential and broader environmental benefits

Where to start | High-level impact and feasibility estimates can guide prioritization[1]

Action area	Impact		Scope for action			
	Emissions reduction	Co-benefits (business, social, environmental)	Affordability	Ease of implementation	Public sector support	Degree of control
Reduce deforestation	High	High	Medium	Low	High	Medium
Enhance sustainable agriculture	High	High	Low	Medium	Medium	Medium
Merchandise sustainable products	High	High	Medium	Medium	Low	High
Reduce food loss…	High	High	Low	Medium	Low	Medium
…and food waste	Medium	Medium	High	High	High	Medium
Increase low-carbon energy…	Low	Medium	Medium	High	Medium	High
…and low-carbon transportation	Medium	Low	Low	Medium	High	High
Adopt circular or sustainable packaging	Low	Medium	Medium	Medium	High	Medium

1. The impact and feasibility estimates provided are relative assessments that evaluate each action area in comparison to the other areas in these materials. The ratings are based on high-level assessments of each action area as a whole and are not necessarily representative of each individual activity within a given area

Increase low carbon energy



Shared Vision of The Future:

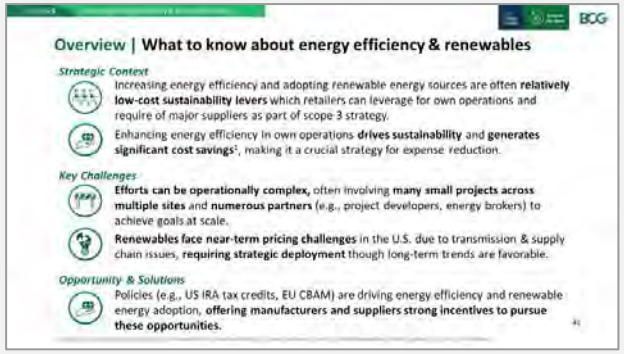
Retailer operations and their supply chains have optimized energy efficiency, and renewable sources are used for all energy needs

Return to key challenges

Climate Action in Practice Guide | Preview of increasing low carbon energy insights, resources, and activities to consider

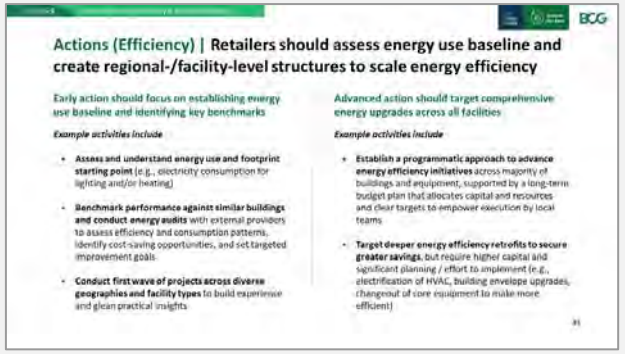
Topic resources to follow …

Low Carbon Energy Overview

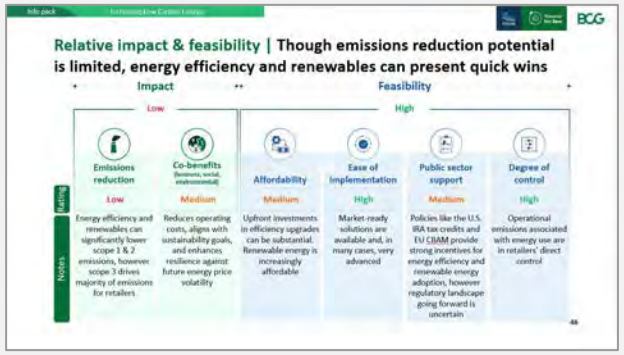


Regional Considerations

Activities Retailers Should Consider

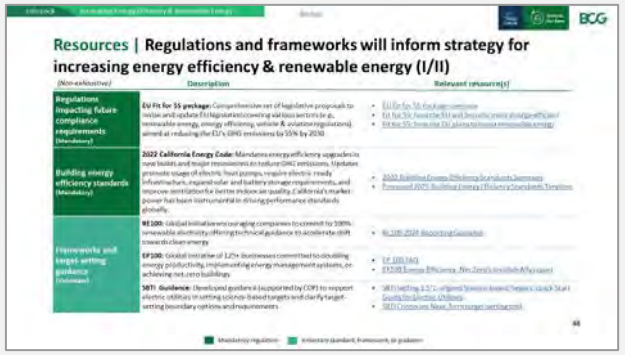


Relative Impact & Feasibility



Retailer Case Studies

"Best Source of Truth" Resources



Overview | What to know about energy efficiency & renewables

Strategic Context

Increasing energy efficiency and adopting renewable energy sources are often **relatively low-cost sustainability levers**, enabling retailers to reduce emissions in their own operations and influence major suppliers as part of scope 3 strategy

Enhancing energy efficiency in own operations **improves sustainability** and **delivers significant cost savings**[1], making it a critical strategy for expense reduction

Key Challenges

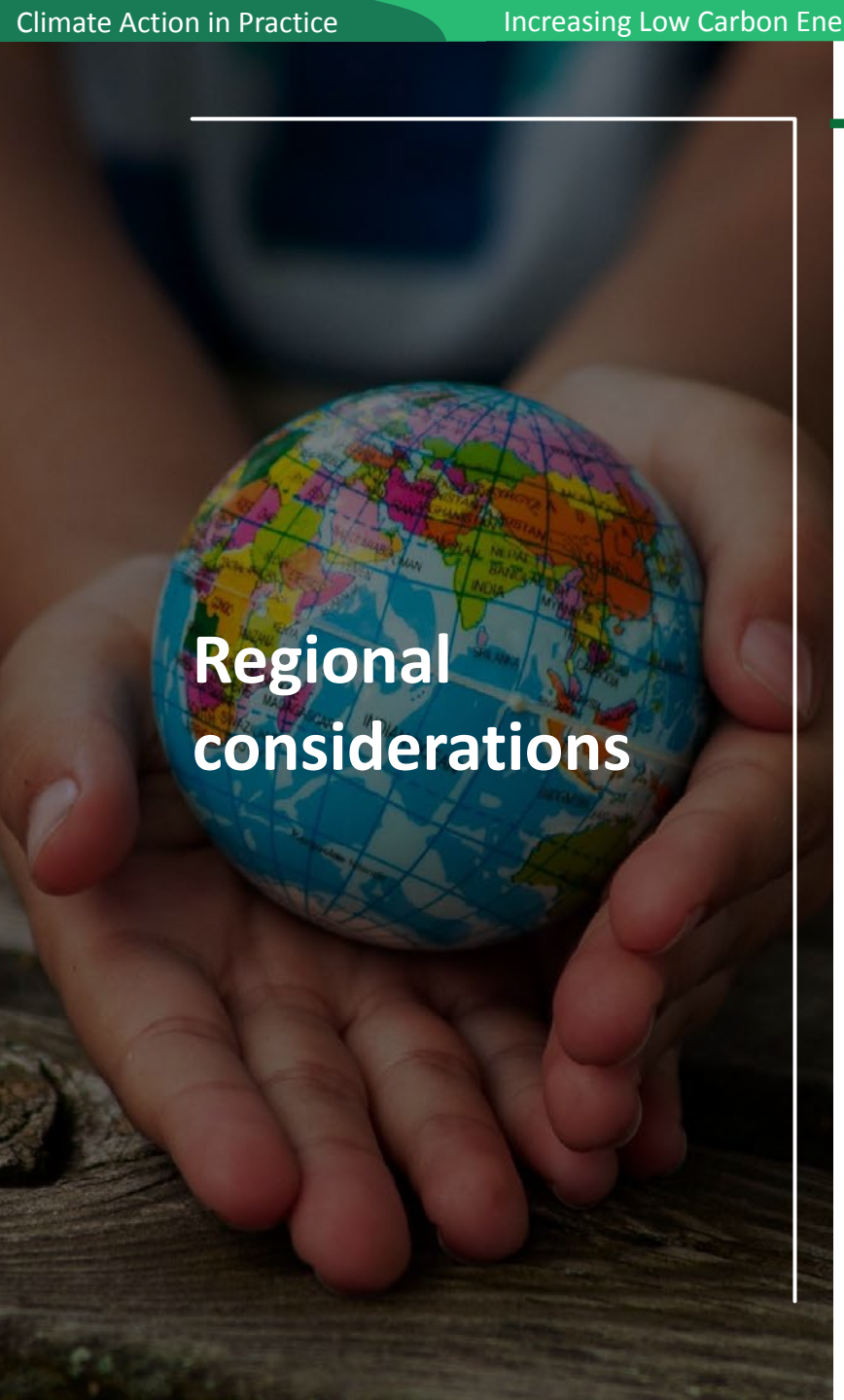
Executing renewables projects can be operationally complex, often requiring coordination across multiple sites and involving numerous partners (e.g., project developers, energy brokers)

Deploying renewables faces near-term pricing challenges in the U.S., due to transmission & supply chain issue **– requiring strategic planning despite favorable** long-term trends

Opportunity & Solutions

Leveraging policy incentives (e.g., US IRA tax credits, EU CBAM) is accelerating energy efficiency and renewable adoption, **offering strong incentives to act**

1. Modest cost savings are also possible from renewables in certain markets (e.g., Spain, Germany). Source: "Global Renewables Market Update: Q3 2024", Trio Advisory



Regional considerations

Not exhaustive

US & Canada | Tailored initiatives
Retailers should align energy efforts with location-specific blend of federal, state and local policies, regulations and incentives to maximize benefits[1]- *US*

Latin America | Selective investment
Policies towards energy efficiency and on-site renewable generation vary widely; retailers should seek alignment between supportive policies and local needs[2] - *e.g., Chile, Uruguay*

Europe | Mandates and beneficial economics
Beyond compliance with strong efficiency and emissions standards, retailers can improve their economics by offsetting relatively high energy costs[3] - *EU*

Asia | Government-led renewable initiatives
Ambitious government targets for renewable energy adoption present opportunities for retailers to invest in renewables, benefiting from incentives[4] - *India, China*

Africa | Solar potential, onsite and beyond
High solar potential offers retailers the opportunity to power operations sustainably and reduce dependence on unreliable grids[5] - *e.g., Kenya, South Africa*

Oceania | Renewable alignment
Australia and New Zealand plan rapid transitions to renewables-based power generation; retailers seeking to source green energy align with policy goals[6] – *Australia, New Zealand*

Sources: 1. American Council for an Energy-Efficient Economy (ACEEE), "State Energy Efficiency Scorecard," 2022; 2. International Renewable Energy Agency (IRENA), "Regional Action Plan: Accelerating Renewable Energy Deployment in Latin America," 2019; 3. European Commission, "Energy Efficiency Directive," 2023; 4. IEA, "India's Clean Energy Transition is Rapidly Underway", 2022; 5. World Economic Forum, "Africa is Leading the Way in Solar Power Potential", 2022; 6. IEA, "New Zealand 2023: Executive Summary", 2023

Actions (Efficiency) | Retailers should assess energy use baseline and create regional- or facility-level structures to scale energy efficiency

Early action should focus on establishing energy use baseline and identifying key benchmarks

Example activities include

- **Assess and understand energy use and footprint starting point** (e.g., electricity consumption for lighting and/or heating)
- **Benchmark performance against similar buildings and conduct energy audits** with external providers to assess efficiency and consumption patterns, identify cost-saving opportunities, and set targeted improvement goals
- **Conduct first wave of projects across diverse geographies and facility types** to build experience and glean practical insights

Advanced action should target comprehensive energy upgrades across all facilities

Example activities include

- **Establish a programmatic approach to advance energy efficiency initiatives** across majority of buildings and equipment, supported by a long-term budget plan that allocates capital and resources and clear targets to empower execution by local teams
- **Target deeper energy efficiency retrofits to secure greater savings,** but require higher capital and significant planning / effort to implement (e.g., electrification of HVAC, building envelope upgrades, changeout of core equipment to make more efficient)

Actions (Renewables) | Retailers early in the journey should assess current energy sourcing and apply region-specific strategies to scale

Early action should prioritize identifying opportunities to effectively deploy renewables

Example activities include

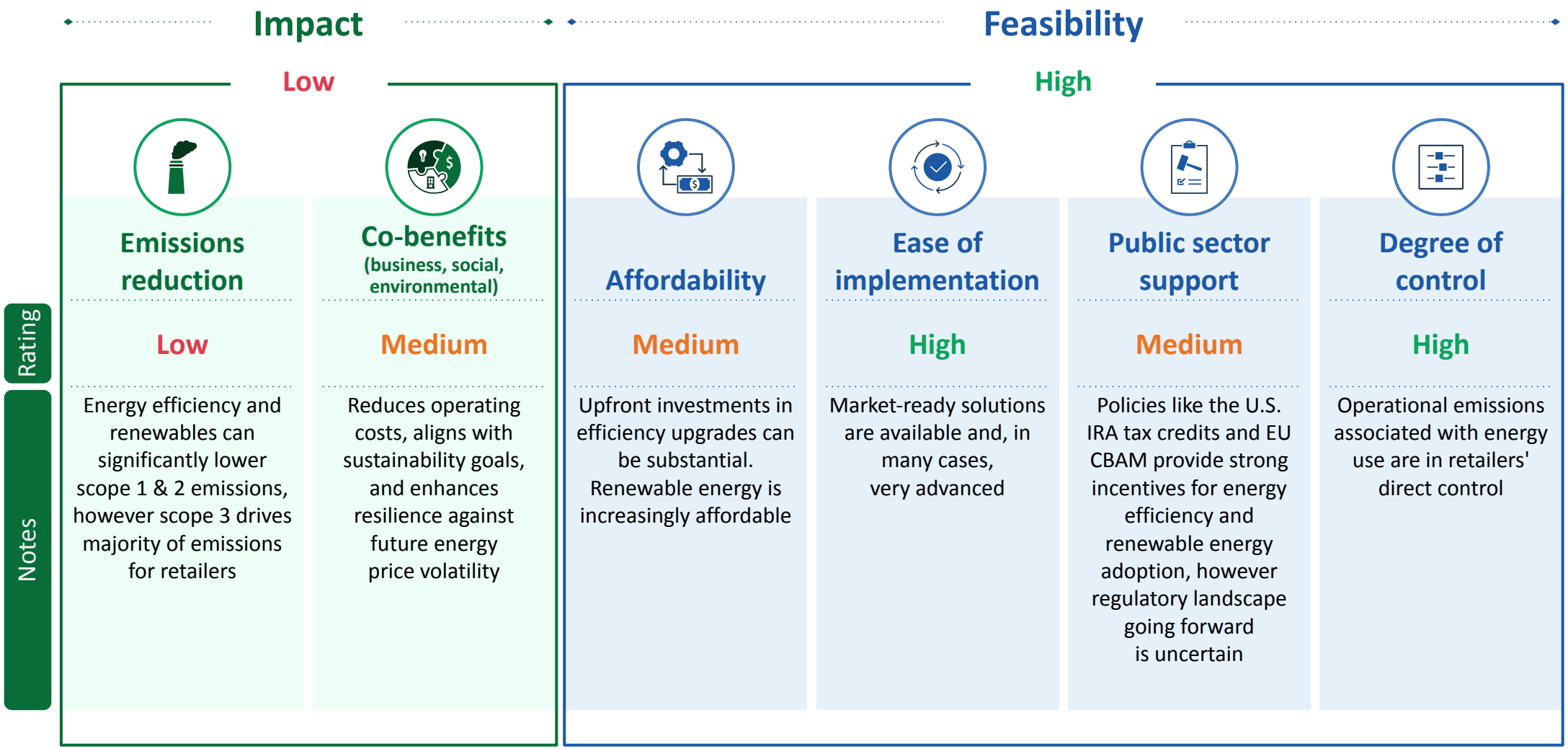
- **Assess current renewable energy usage and forecast broader energy needs to support renewable planning and procurement** (e.g., estimate future demand, identify renewable energy needed to meet sustainability goals)
- **Identify the most suitable renewable energy pathways** (e.g., on-site solar installations, PPAs, vPPAs, unbundled certificates / RECs) and **determine initiatives to prioritize** and **optimize adoption** (e.g., develop region specific strategies, obtain financial approvals, establish clear objectives, facilitate effective implementation)

Advanced actions should prioritize defining a clear path to 100% renewable energy

Example activities include

- **Target achieving 100% renewables in the immediate term using unbundled RECs**
- **Develop plan to meet 100% renewable energy beyond 2027 without unbundled RECs,** focusing on sourcing PPAs, vPPAs, and building onsite capacity
- Once above is achieved, **implement a plan to meet renewable energy commitments to meet power usage on a 24/7 matching basis**

Relative impact & feasibility | Though emissions reduction potential is limited, energy efficiency and renewables can present quick wins



Case studies (Efficiency) | Retailers launch regional initiatives to increase energy efficiency for own operations and/or major supplier networks

Levers in action: Retail case studies

IKEA launched initiative to boost HVAC energy efficiency and reduce carbon footprint

IKEA increased HVAC energy efficiency by 25% in two large Spanish stores by installing ABB's **high-efficiency HVAC systems** with advanced drives. This initiative is part of IKEA's broader sustainability goal to reduce carbon emissions by 80% by 2030, supporting its vision of becoming a fully circular and low-impact business

See IKEA Case Study for more info

Walmart boosts energy efficiency in supply chain through Project Gigaton

Through **Project Gigaton**, Walmart worked with **5,900 suppliers** to improve supply chain **energy efficiency** using tools like the Factory Energy Efficiency tool and hosting summits. These efforts helped Walmart exceed its emissions reduction goal **six years early**, highlighting energy efficiency's role in cutting emissions

*See **Walmart Press Release** for more info*

Woolworths invests in comprehensive energy efficiency upgrades to bring down emissions

Woolworths has allocated **over $77M to energy efficiency upgrades** throughout their operations, including replacing older lighting with LED solutions and upgrading refrigeration and air conditioning systems, contributing to their achievement of a **42% reduction in scope 1 & 2 emissions** relative to 2015 base year

See Woolworths Sustainability Report for more info

Case studies (Renewables) | Retailers leverage multiple strategies to accelerate adoption of renewables across portfolio

Levers in action: Retail case studies

Woolworths progresses toward 100% renewable energy by 2025

Woolworths aims to achieve **100% renewable electricity** by **2025**, with **23.5%** reached in F24, supported by CleanCo and other partnerships. In F24, **278 solar systems** were installed, powering over **12,600 homes** annually. Efforts include bi-facial solar panels to maximize production and align with the **RE100 commitment**

See Woolworths press release for more info

Walmart accelerates clean energy investments across the US to reduce emissions

Walmart is advancing its energy transformation by **enabling nearly 1 gigawatt of new clean energy projects across the U.S**. These initiatives include **community solar programs** benefiting low-income households, **long-term renewable energy purchase agreements**, and **collaborations** with utilities to **expand grid capacity**

See Walmart Press Release for more info

IKEA invests €200 million to support renewable energy transition

IKEA launched a program to help suppliers in key countries like **Poland**, **China**, and **India** transition to **renewable electricity**. By **2023**, the program expanded to **ten additional markets**. The program provides both off-site solutions like **Power Purchase Agreements** and on-site options such as **solar panel installations**

See IKEA Press Release for more info

Ahold Delhaize signs VPPA covering 30% of EU operations with solar

Ahold Delhaize signed a **Virtual Power Purchase Agreement** (VPPA) with Spanish energy company BRUC to support the construction of five solar plants in Seville. Once **operational in 2026, the project will supply approximately 460,000 MWh of renewable electricity** annually—covering around 30% of the retailer's European energy consumption

See Ahold Delhaize press release for more info

Resources | Regulations and frameworks will inform strategy for increasing low carbon energy (I/II)

(Non-exhaustive)	Description	Relevant resource(s)
Regulations impacting future compliance requirements (Mandatory)	**EU Fit for 55 package:** Comprehensive set of legislative proposals to revise and update EU legislation covering various sectors (e.g., renewable energy, energy efficiency, vehicle & aviation regulations) aimed at reducing the EU's GHG emissions by 55% by 2030	• EU Fit for 55 Package overview • Fit for 55: how the EU will become more energy-efficient • Fit for 55: how the EU plans to boost renewable energy
Building energy efficiency standards (Mandatory)	**2022 California Energy Code:** Mandates energy efficiency upgrades in new builds and major renovations to reduce GHG emissions. Updates promote usage of electric heat pumps, require electric-ready infrastructure, expand solar and battery storage requirements, and improve ventilation for better indoor air quality. California's market power has been instrumental in driving performance standards globally	• 2022 Building Energy Efficiency Standards Summary • Proposed 2025 Building Energy Efficiency Standards Timeline
	RE100: Global initiative encouraging companies to commit to 100% renewable electricity offering technical guidance to accelerate shift towards clean energy	• RE100 2024 Reporting Guidance
Frameworks and target-setting guidance (Voluntary)	**EP100:** Global initiative of 125+ businesses committed to doubling energy productivity, implementing energy management systems, or achieving net-zero buildings	• EP 100 FAQ • EP100 Energy Efficiency: Net Zero's Invisible Ally report
	SBTi Guidance: Developed guidance (supported by CDP) to support electric utilities in setting science-based targets and clarify target-setting boundary options and requirements	• SBTi Setting 1.5°C-aligned Science-based Targets: Quick Start Guide for Electric Utilities • SBTi Corporate Near-Term target-setting tool

Mandatory regulation Voluntary standard, framework, or guidance

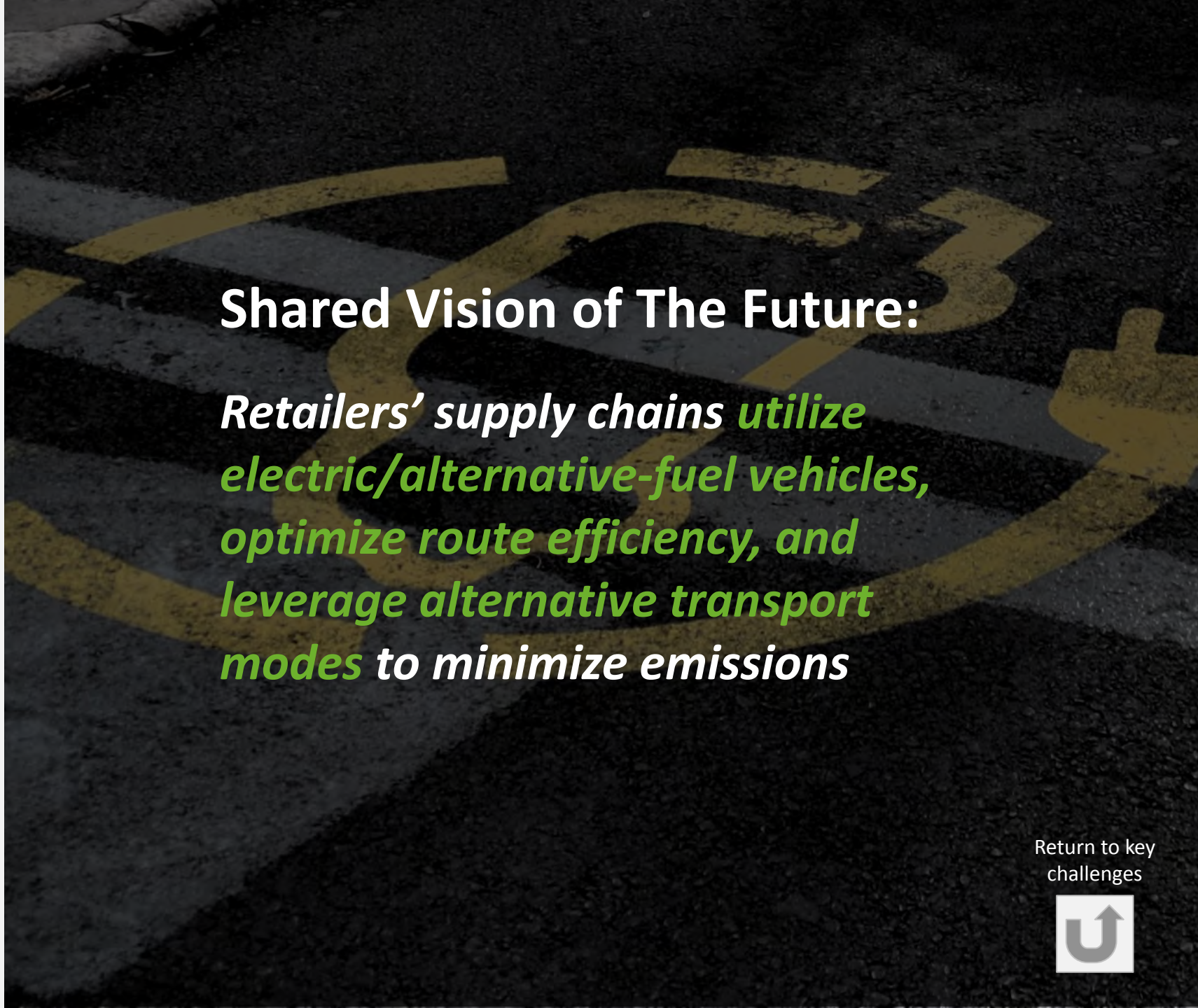
Resources | Regulations and frameworks will inform strategy for increasing low carbon energy (II/II)

(Non-exhaustive)	Description	Relevant resource(s)
Funding and incentive mechanisms (Voluntary)	**Funding opportunities under Inflation Reduction Act (IRA):** Directs ~$400B in US federal funding to reduce carbon emissions by 2030 through tax incentives, grants, and loan guarantees for clean electricity, transmission, clean transportation, and EV incentives	• Inflation Reduction Act Guidebook
Business guidance (Voluntary)	Several resources exist that provide actionable guidance and recommendations for increasing energy efficiency and renewable energy at the corporate level	• Turbocharging the Energy Transition by Boosting Customer Demand (BCG publication) • A Rapid Energy Transformation Is Good for Nature and the Climate (BCG publication) • Accounting for Change: Policies and Technical Approaches for Reducing Greenhouse Gas Emissions through Energy Efficiency Programs (American Council for Energy-Efficient Council publication) • RILA Corporate Clean Energy Procurement Index report

Mandatory regulation Voluntary standard, framework, or guidance

Return to key challenges

Increase low carbon transportation



Shared Vision of The Future:

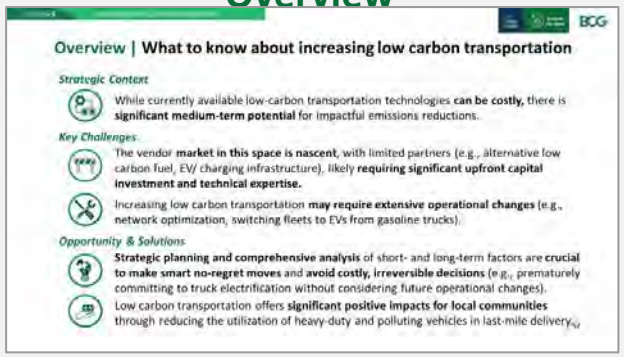
Retailers' supply chains utilize electric/alternative-fuel vehicles, optimize route efficiency, and leverage alternative transport modes to minimize emissions

Return to key challenges

Climate Action in Practice Guide | Preview of increasing low carbon transportation insights, resources and activities to consider

Topic resources to follow …

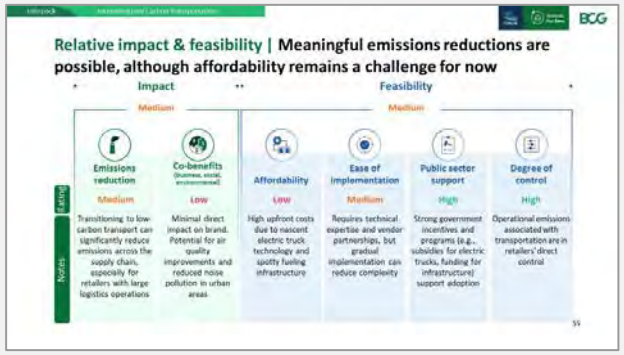
Low Carbon Transportation Overview



Regional Considerations

Activities Retailers Should Consider

Relative Impact & Feasibility



Retailer Case Studies

"Best Source of Truth" Resources

Overview | What to know about increasing low carbon transportation

Strategic Context

Currently available low-carbon transportation technologies remain costly, but offer **significant medium-term potential** for impactful emissions reductions

Key Challenges

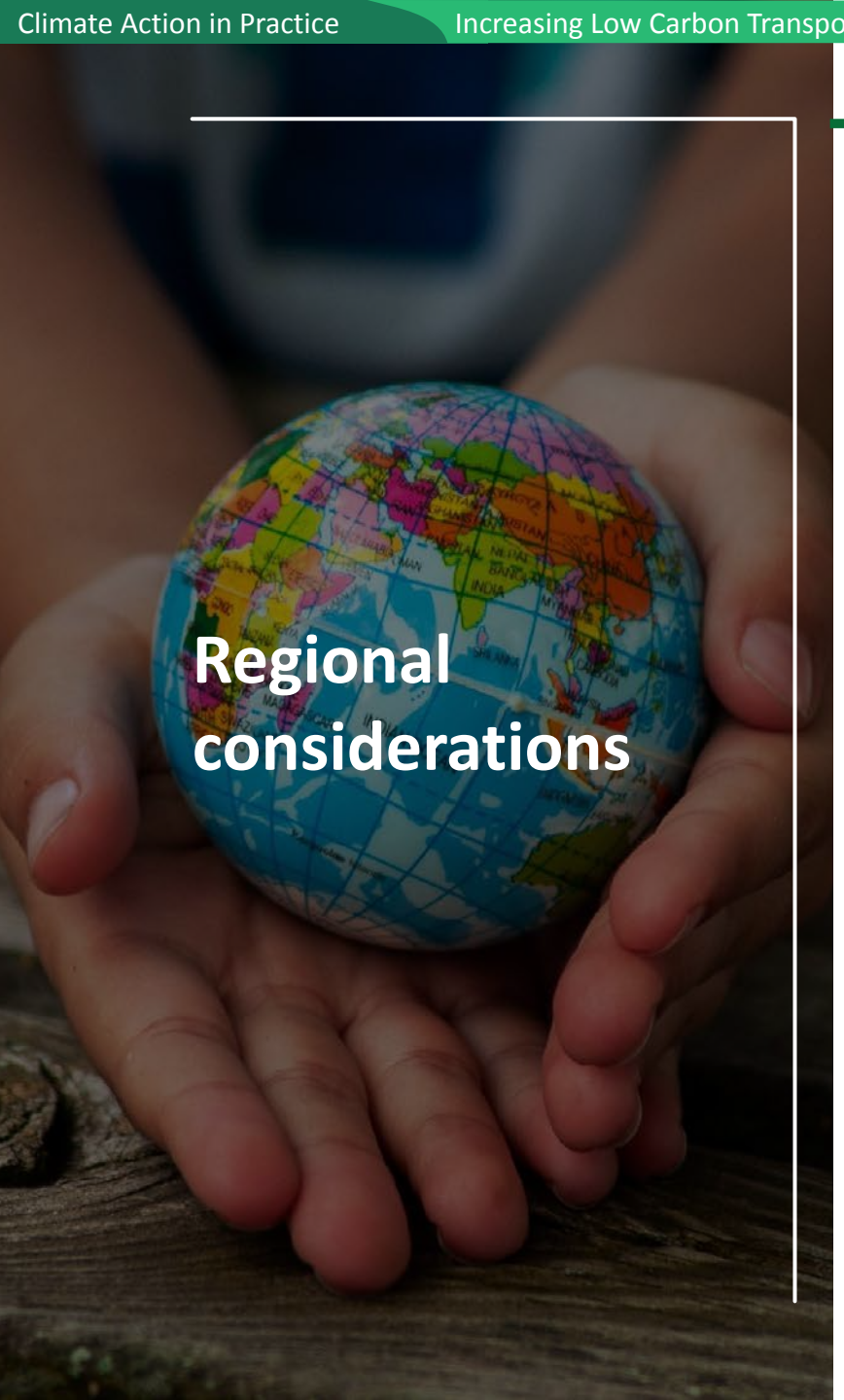
The **vendor landscape is nascent**, with limited partners in areas like alternative fuel and EV charging infrastructure – likely requiring significant upfront capital and technical expertise

Scaling low carbon transportation **may require extensive operational shifts**, such as network optimization and transitioning fleets from gasoline to electric vehicles

Opportunity & Solutions

Strategic planning and comprehensive analysis of short- and long-term factors are crucial, helping **avoid costly, irreversible decisions** (e.g., committing to truck electrification without accounting for future operational needs)

Low carbon transportation can deliver **meaningful benefits for local communities**, reducing the use of heavy-duty, high-emission vehicles in last-mile delivery



Regional considerations

Not exhaustive

US & Canada | Advancing electric truck adoption
Federal and state incentives support the development and adoption of electric heavy-duty trucks, reducing the costs of fleet conversion[1,2] – US, Canada

Latin America | Limited infrastructure
High costs and limited infrastructure for low-emission vehicles mean retailers should prioritize operational efficiency to reduce emissions[3] - *e.g., Brazil, Argentina*

Europe | Zero-emission mandates
EU regulations pushing for zero-emission transport require retailers to transition fleets, impacting investment decisions[4] - *EU*

Asia | Electrification opportunities
Advanced EV infrastructure makes it easier for retailers to electrify fleets, and autonomous trucking acceleration has tailwinds for EV adoption[5] - *China*

Africa | Limited infrastructure
High costs and limited infrastructure for low-emission vehicles mean retailers should focus on operational efficiency to reduce emissions[6] - *numerous countries*

Oceania | Limited infrastructure
High costs and limited infrastructure for low-emission vehicles mean retailers should focus on operational efficiency to reduce emissions[7] - *Australia*

1. US federal incentive have become more uncertain given new US administration's likely priorities. Sources: 2. RMI, "The Inflation Reduction Act Will Help Electrify Heavy-Duty Trucking", 2022; 3. BCG analysis; 4. European Commission, "Delivering the European Green Deal," 2021; 5. WIRED, "China is Racing to Electrify its Future", 2022; 6. EnergyNews Africa, "Electric Vehicle Adoption: Infrastructure Challenges in Africa", 2024; 7. Clayton Utz, "Emerging Challenges for Australia Electric Vehicle Charging Infrastructure", 2022

Actions | Retailers can establish baseline logistics and a clear strategy as a first step, refining both iteratively to scale

Early action should establish a baseline and develop an actionable strategy

Example activities include

- **Establish baseline for inbound and outbound logistics** (e.g., locations, specs, modes of transport, distance traveled, % owned vs. 3rd party fleet)
- **Develop practical, actionable strategy** based on logistic baseline that aligns with long-term goals (e.g., route optimization to improve fuel efficiency and reduce travel distance)
- **Start with gradual, region-specific hub deployment of electric/ low carbon transport for lighter duty or shorter-distance routes,** allowing for iterative learning and improvement to refine strategy

Advanced action should focus on targeted deployment and investment

Example activities include

- **Assess and deploy low-carbon transport for medium-distance (<100 miles) routes or those served by heavy duty vehicles,** considering full set of options (e.g., mode-shifts, network optimization)
- **Collaborate with peers to enable collective buying and facilitate potential co-investment in cost-effective technologies** for harder-to-decarbonize logistics segments (e.g., to develop Class 8 e-trucks for medium distances, fast charging infrastructure to meet operational needs)

Relative impact & feasibility | Meaningful emissions reductions are possible, although affordability remains a challenge for now

	Impact		Feasibility			
	Medium		Medium			
	 Emissions reduction	 Co-benefits (business, social, environmental)	 Affordability	 Ease of implementation	 Public sector support	 Degree of control
Rating	Medium	Low	Low	Medium	High	High
Notes	Transitioning to low-carbon transport can significantly reduce emissions across the supply chain, especially for retailers with large logistics operations	Minimal direct impact on brand. Potential for air quality improvements and reduced noise pollution in urban areas	High upfront costs due to nascent electric truck technology and spotty fueling infrastructure	Requires technical expertise and vendor partnerships, but gradual implementation can reduce complexity	Strong government incentives and programs (e.g., subsidies for electric trucks, funding for infrastructure) support adoption	Operational emissions associated with transportation are in retailers' direct control

Case studies | Retailers employ variety of innovative solutions and strategic partnerships to reduce emissions across their fleets

Levers in action: Retail case studies

DFI launches electric trucks to cut logistics emissions


Introducing Electric Trucks in Hong Kong and Taiwan

Taiwan's first 26-tonne electric delivery truck

In 2023, DFI launched **electric trucks** in Taiwan and Hong Kong, cutting logistics **emissions significantly**. In Taiwan, a **26-tonne truck** reduced emissions by **18%**, while Hong Kong's **24-tonne truck**, funded by the government, will cut **24,000 tonnes of CO_2** over its lifetime

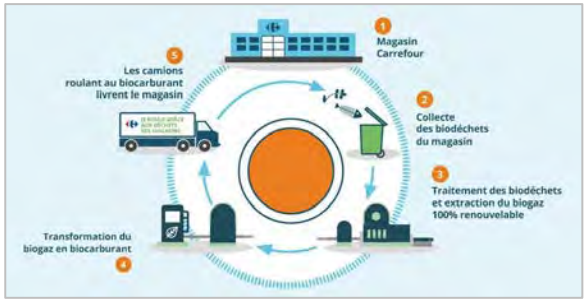
*See **DFI Sustainability Report** for more info*

Walmart advances alternative fuels and innovative technology to reduce transport emissions

Walmart is piloting alternative fuel solutions, including renewable natural gas, hydrogen, and electric vehicles to reduce emissions from its transportation fleet. Additionally, they are collaborating with partners (e.g., Chevron) **to drive innovation and test new technologies** in Class 8 trucks, refrigerated trailers, and yard trucks.

*See **Walmart Press Release** for more info*

Carrefour converts waste from stores into biofuel



Carrefour sorts and recovers bio-waste in stores, then converts the waste to fuel for biomethane trucks. By the end of 2024 Carrefour planned to have **1,000 biomethane trucks** in circulation, which produce **80% less GHG emissions** than traditional transportation methods

*See **Carrefour Website** for more info*

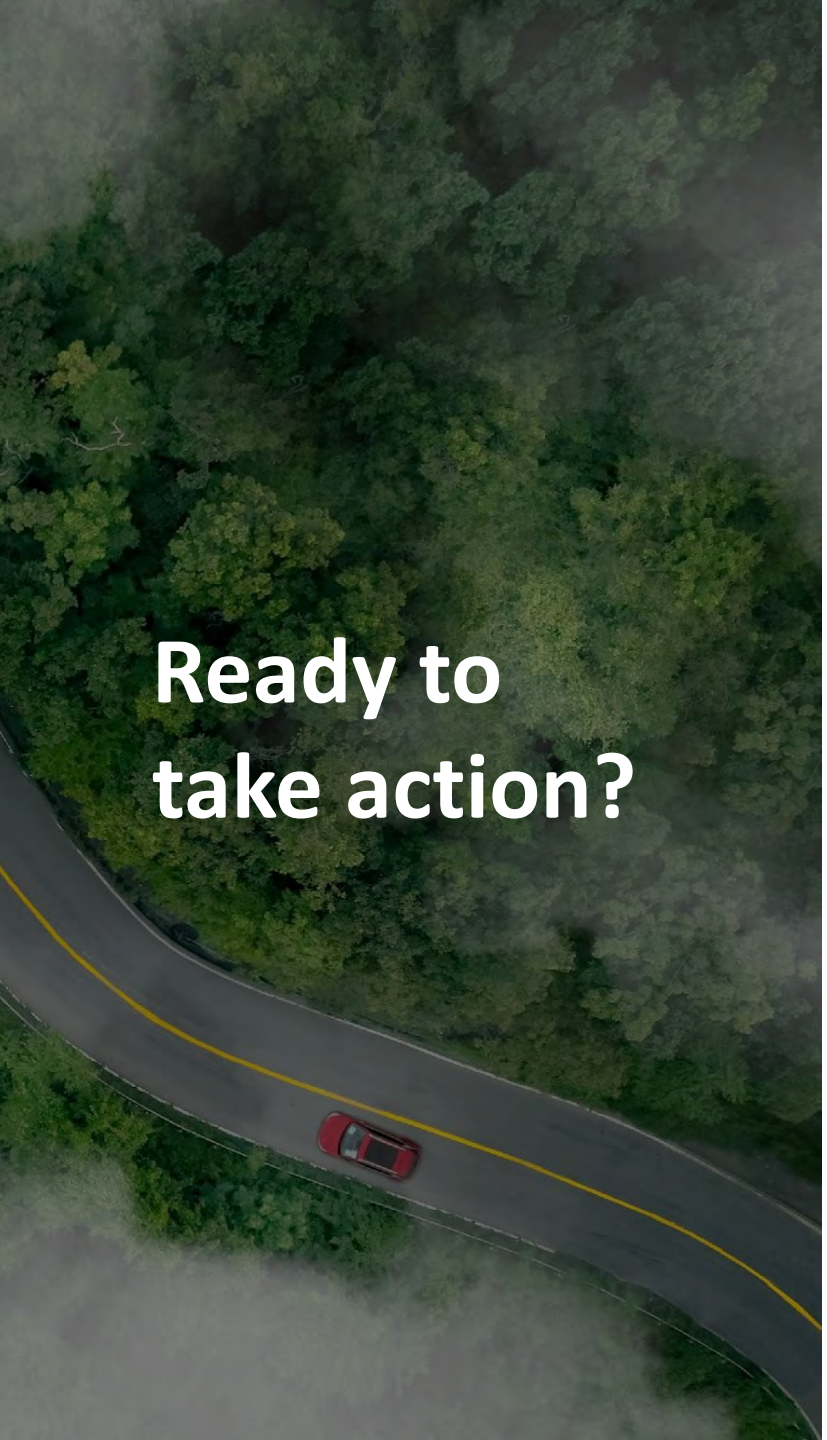
Resources | Monitoring emerging regulations is crucial to guide low carbon transportation strategy and avoid costly missteps

(Non-exhaustive)	Description	Relevant resource(s)
Regulation (Mandatory)	**CA Executive Order N-79-20**: Requires CA Air Resources Board (CARB) to develop and propose strategies to achieve 100% zero-emissions from medium- and heavy-duty on-road vehicles by 2045 and from drayage (container shipping) vehicles by 2035. Several existing incentive programs can help fleet owners comply **CA Advanced Clean Fleet Regulation:** Supports EO N-79-20 by specifying transition timeline for government-owned and "high-priority" fleets[1]. In 2035, only ZEVs[2] will qualify for new purchase **New York, New Jersey, Oregon, and Washington** passed similar laws	• CARB advanced clean fleets • CARB zero-emission on-road medium- and heavy-duty strategies
Multi-state agreements (Voluntary)	**Multi-State ZEV Taskforce:** Launched in 2020, coalition of 15 states and DC committed to 30% ZEV sales for new medium- and heavy-duty trucks by 2030 and 100% by 2050 in their respective states	• Multi-state ZEV taskforce memo
Frameworks and target-setting guidance (Voluntary)	**EV100:** Coalition of 120+ companies across 100 markets committing to electrify their passenger and light duty fleet (~5.75 million vehicles) and install charging infrastructure by 2030 **EV100+:** Building off the success of EV100, new initiative focused on medium- and heavy-duty vehicles	• EV100 • EV100+
Business guidance (Voluntary)	Several resources exist that provide actionable guidance and recommendations for increasing low carbon transport at the corporate level	• Accelerating ZEV adoption in fleets to decarbonize road transportation (ICCT publication) • Accelerating the Shift to Sustainable Transport (BCG publication) • The Road Ahead for Low-Carbon Fuels (BCG publication)

Mandatory regulation Voluntary standard, framework, or guidance

1. "High priority" defined as entities with $50m+ gross annual revenue that own, operate, or direct 1+ vehicle in California, or entities that operate 50+ vehicles in the state. 2. ZEV = zero-emissions vehicle

Return to key challenges



Ready to take action?

How to become the next changemaker:

1. **Explore practical resources** to tackle key sustinabaility challenges
2. **Connect with our experts** to accelerate your sustainability journey
3. **Join the CGF** to collaborate with industry leaders and drive positive change


Thank you