ECONOMIST IMPACT

Scoring Decarbonization Progress

How companies across four industries are reducing emissions

Retail sector report

SUPPORTED BY Microsoft

Retail

- Because of their central position between consumers and manufacturers, retailers can have an outsized impact on emissions reductions.
- The food system is responsible for an estimated 21–37% of global greenhouse gas (GHG) emissions. As influential actors within this system, supermarkets need to foster decarbonizing innovation in their upstream supply chains.
- Supermarkets can invest in the R&D of low-carbon crop varieties and help equip food producers with the tools and expertise to shift to sustainable farming practices.
- Specialty retailers are making progress in addressing their operational emissions by improving the resource efficiency of pre-existing and new physical infrastructure.
- As retailers globally continue to shift to omnichannel models, last-mile emissions from e-commerce sales are likely to grow. Firms need to proactively address these by investing in fleet electrification and route optimization.

Supermarkets

Supermarkets play a crucial role in driving the decarbonization of the food sector, which is responsible for 21–37% of total GHG emissions globally.[i,1] While major firms in the sector have made some initial progress, efforts to mitigate their environmental impact remain insufficient.

A significant portion of emissions in the sector (93%) derive from the supply chain, but supermarkets could do more to shift from high-emitting partners.

While 70% supermarkets assessed in this study are actively engaging with their value chain partners to support decarbonization efforts, only 15% have excluded carbon-intensive value chain partners. A pressing issue is visibility. Many supermarkets lack the capacity to even understand the full extent of their emissions. Our study finds that only 15% of firms in the sub-sector measure and track all relevant sources of value chain (Scope 3) emissions, and 30% do not track any value chain emissions at all. Once supermarkets better understand their value chains, they can identify problem emissions and source products from suppliers with strong sustainability credentials.[2] For example, Carrefour aims to have its 100 largest suppliers adopt a 1.5°C trajectory consistent with the Science Based Targets initiative by 2026. The supermarket giant has also committed to delisting non-compliant suppliers from its value chain.[3] In an effort to strengthen its sustainability credentials through its Food Transition Pact, Carrefour collaborates with suppliers to manage their emissions from agricultural practices and land use, as well as from packaging.[4]

On the downstream side of the value chain, supermarkets can do more to educate consumers about food choices and encourage more sustainable purchases. These actions will be essential for helping to address the substantial emissions (approximately 59%) from the use of sold products.[5] Advocating for dietary changes through their products and customer communications is crucial: for example, one recent study from the UK found that the dietary GHG emissions of vegans were about 25% those of the high meat eaters group in the sample.[6]

The lack of investment from the sub-sector in fostering decarbonization innovation also poses a significant challenge. Supermarkets can significantly reduce their carbon footprints by investing in R&D for decarbonized product offerings.

While some leaders are playing a proactive role in supporting agrifood innovation by investing in sustainable protein production and resource-efficient farming methods,[7] most are not. Tensie Whelan, Clinical Professor for Business and Society and the Director of the Center for Sustainable Business at New York University's Stern School of Business, points out that retailers are not doing nearly enough to support upstream suppliers in managing key pools of emissions in the first mile of food production. In particular, these pools include land use for crops and livestock rearing; agricultural practices, methane and other GHG emissions associated with livestock; and emissions stemming from cold chain transportation of food from farms to warehouses. Furthermore, voluntary measures, such as those contained in the EU Code of Conduct on Responsible Food Business and Marketing Practices, represent a valuable starting point, but lack the impact and force of regulatory interventions.[8] These findings call for a more comprehensive reimagining of the entire food supply chain and indicate that

i. In the Decarbonization Progress Benchmark, the Supermarkets sub-sector consists of the five largest grocery stores, discount stores, and food distributors by market capitalization in each of the four regions: North America, Latin America, Asia, and Europe, per market capitalization data from Pitchbook (April 2023). https://my.pitchbook.com/dashboard

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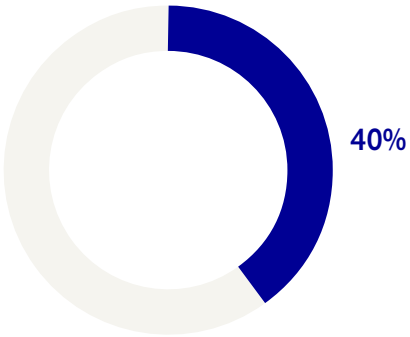
Figure 1: Supermarkets are lagging in supporting upstream value chain decarbonization through innovation[ii]

93% of emissions derive from the value chain

Only 40% of supermarkets assessed in this study are actively supporting decarbonizing innovation in their value chains.



broader action is required across the industry to promote innovative, low-carbon diets and agricultural solutions. Food waste reduction is another area where urgent action is needed, as the FAO (Food and Agriculture Organization of the United Nations) estimates that 14% of the world's food is lost between harvest and the retail market, with an additional 17% wasted by consumers or retailers.[9] Supermarkets should be taking steps such as improving inventory systems, partnering with farmers and altering practices that produce waste.[10]

Even for the 7% of supermarkets' total carbon footprint that comprises operational emissions (Scope 1 and 2),[11] the sub-sector lags behind its peers.

In 2020, commercial refrigeration was responsible for 26% of global hydrofluorocarbons (HFCs) emissions. Most of the leaks during operation are from system wear, poor design and improper maintenance practices.[12] Research for our analysis shows that major supermarkets have yet to broadly implement refrigeration upgrades needed to move away from systems that are high emitters of HFCs.[iii] More generally, the lack of action to limit HFCs, often in spite of commitments to reduce operational emissions,[13] broadly reflects supermarkets' failure to reduce Scope 1 and 2 emissions. Progress on implementation does not yet live up to the sub-sector's commitments.

As climate change poses significant threats to global food production, supermarkets hold a substantial share of the responsibility for ensuring that the low-carbon transition is equitable.

Our benchmark analysis shows that 80% of examined firms in the Supermarkets sub-sector are neglecting to invest in supporting a just transition for stakeholders within their value chain. One example where this transition will be hugely impactful is the global meat industry, which supports millions of farmers and processors in high-income countries alone.[14] As global food consumption and production shifts away from meat, these communities risk upheaval and job losses that could ultimately contribute to a backlash against decarbonization. Supermarkets can take the lead in advocating for transitional policies and working with meat and meat-alternative suppliers to support impacted communities and workers. More generally, this type of approach is essential for jointly fostering the low-carbon transition while supporting communities and workers.

ii. Indicator 3.5.2: Supporting decarbonization innovation in the Decarbonization Progress Benchmark reveals that only 40% of the supermarkets assessed in this study are actively supporting the development and/or scaling of low carbon alternative offerings across different product supply chains.

iii. Usually multiplex rack systems.

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Next steps for decarbonizing the supermarkets industry

- **Supermarkets must develop the tools to assess upstream and downstream emissions from food production and transportation.** Firms should increase transparency around key sustainability metrics, starting with private label and fresh products, but with the ambition to expand across their entire assortment.

- **Implementation of key Scope 1 reduction measures, particularly regarding refrigerants, can provide quick wins.** Although most firms have implemented measures to improve resource efficiency of operations and are gradually shifting to renewable energy, leaders can stay ahead of the curve by transitioning away from HFCs, and lagging supermarkets can aim to close the gap with leaders by taking measures to ensure proper disposal and reclamation of used refrigerants.[15] Programs such as the US Environmental Protection Agency's GreenChill Partnership can help to reduce corporate leak rates and generate cost savings.[iv]

- **The sector must begin to support the operational decarbonization of upstream suppliers in order to reduce emissions from purchased goods and services.** Decarbonizing the first mile of food production is a critical emission reduction lever for grocers. Retailers can support food producers in their upstream supply chain by encouraging them to take stock of their emissions and set reduction targets, equipping them with tools and technical know-how to adopt sustainable farming practices, and investing in R&D of low-carbon alternatives such as low-methane-emitting crop varieties.[16]

- **Facilitating the societal transition away from high-emitting food products, particularly meat and dairy, is an essential first step.[17]** The most powerful assortment-related solution is to offer plant-based alternatives to dairy and meat, which account for almost half of all product-related Scope 3 emissions. While this transition will be difficult to facilitate, it is not impossible. The growth of dairy-alternative sales in the US illustrates how retailers can collaborate with supply chain partners to market offerings with a lower carbon footprint to consumers.[v]

iv. This program helped reduce leakage rates from a sector average of 25% down to 13% or less—which in the US case would reduce annual emissions by 15.5 million metric tons of CO_2 equivalent in 2025.

v. In 2022, 41% of US households purchased plant-based milk, with a repeat purchase rate of 76%. https://foodinstitute.com/focus/deep-dive-the-state-of-alternative-milk/

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Specialty Retail

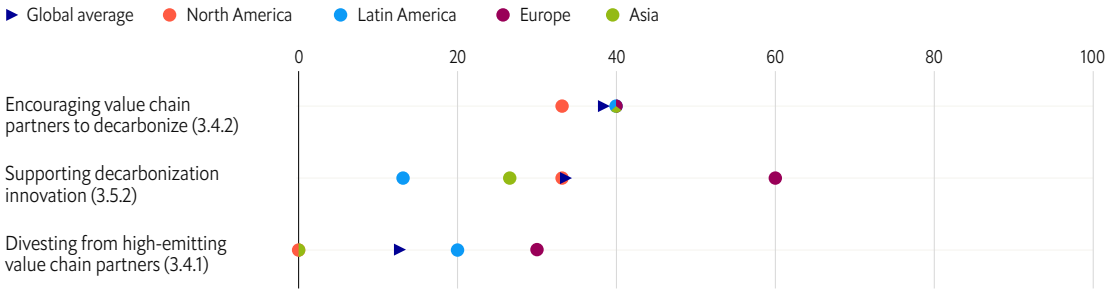
Specialty retailers,[vi] comprising e-commerce, fashion, and home improvement retailers, are ahead of the curve in measuring and building out action plans to address their value chain emissions, but they are only just starting to act on these plans.

Of the Specialty Retail sub-sector firms analyzed, 40% are measuring and tracking all relevant sources of Scope 3 emissions, while another 40% are tracking at least some. Because such emissions can account for well over 90% of the total carbon footprint of retailers, they are the most critical aspect of retail decarbonization, so it bodes well that many specialty retailers are beginning to account for their full emissions.

Specialty retailers are particularly engaged with their upstream value chain, reflecting the sub-sector's recognition that they play an important role as gatekeepers for the goods that end up in the hands of consumers.[18] They can have an outsized impact on emissions beyond their own direct footprint, which can be curtailed via their choice of suppliers. Almost half of the firms in our study are encouraging suppliers to measure their emissions and setting expectations for GHG emissions reduction in their supplier codes of conduct,[19] partnering with suppliers on operational optimization,[20] and supporting suppliers in increasing their consumption or generation of electricity from renewable sources.[21]

But there is still room for improvement: 80% of the firms evaluated have not publicly excluded carbon-intensive suppliers. In addition, the sub-sector ranks last on our measure of supporting innovation through low-carbon alternatives for products, which could be key for curbing emissions from the use of sold goods, which make up about 68% of the sector's total carbon footprint.[22] However, some leading firms are charting the path ahead through measures such as supporting green chemistry innovation in their chemical product supply chains,[23] developing and scaling recycled raw materials for apparel manufacturing,[24] and leveraging eco-design approaches for luxury goods manufacturing.[25]

Figure 2: Specialty Retail: Value chain engagement on decarbonization
Higher score = more firms in the region are actively engaging with their value chain partners



Source: Economist Impact's Decarbonization Progress Benchmark (2023)

vi. In the Decarbonization Progress Benchmark, the Specialty retail sub-sector consists of the five largest e-commerce, luxury goods, fast fashion, and home improvement retailers by market capitalization in each of the four regions: North America, Latin America, Asia, and Europe, per market capitalization data from Pitchbook (April 2023). https://my.pitchbook.com/dashboard

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The shift towards an omnichannel business model—aimed at giving a more streamlined shopping experience across brick-and-mortar and online platforms—has an important bearing on decarbonizing retail operations.

With the shift towards an omnichannel model,[26] online sales of both e-commerce retailers and traditional brick-and-mortar stores are taking an ever-larger slice of total global retail sales.[27] While last-mile deliveries currently account for a very small proportion of retail's total emissions footprint, they are emerging as a source of concern due to their ongoing rapid growth.[vii,28]

One effective strategy for last-mile emissions involves the electrification of downstream partners' fleets by transitioning to electric vehicles for delivery operations. Fleet electrification can be achieved by replacing an existing fleet or by retrofitting existing internal combustion engine vehicles through the replacement of existing powertrains, exhaust systems, and fuel tanks with an electric powertrain and battery pack.[29] Erin Hiatt, Vice President, Corporate Social Responsibility, Retail Industry Leaders Association in the US, also underscores the importance of optimizing delivery routes in reducing last-mile emissions. This entails planning efficient delivery sequences and considering factors like traffic and weather, and increasing first-attempt delivery rates by validating addresses and accommodating special delivery instructions.[30] Furthermore, specialty retailers focused on last-mile emissions are setting up strategically placed local fulfilment centers, which can reduce long-distance transportation emissions and lower last-mile emissions by an estimated 17–26%.[31]

When it comes to addressing operational emissions, specialty retailers are making progress through improvements to their physical plants.

Brick-and-mortar stores are achieving efficiencies through retrofitting and embracing greener physical infrastructure. These measures include adopting LED lighting, utilizing more efficient heating, ventilation, and air-conditioning (HVAC) motors, employing heat pumps, implementing onsite solar-power generation, and incorporating battery energy storage systems.[32] E-commerce firms are diligently focusing on improving energy efficiency in data centers and warehouses. This emphasis is driven by the recognition that large, central and highly automated warehouses present substantial efficiency advantages compared with physical stores.[33]

vii. As a part of downstream transport (Scope 3, Category 9), last-mile emissions are estimated to make up less than 10% of a retailer's total carbon footprint. https://rilastagemedia.blob.core.windows.net/rila-web/rila.web/media/media/pdfs/reports/retail-climate-action-blueprint-updated2.pdf?ext=.pdf (p. 17)

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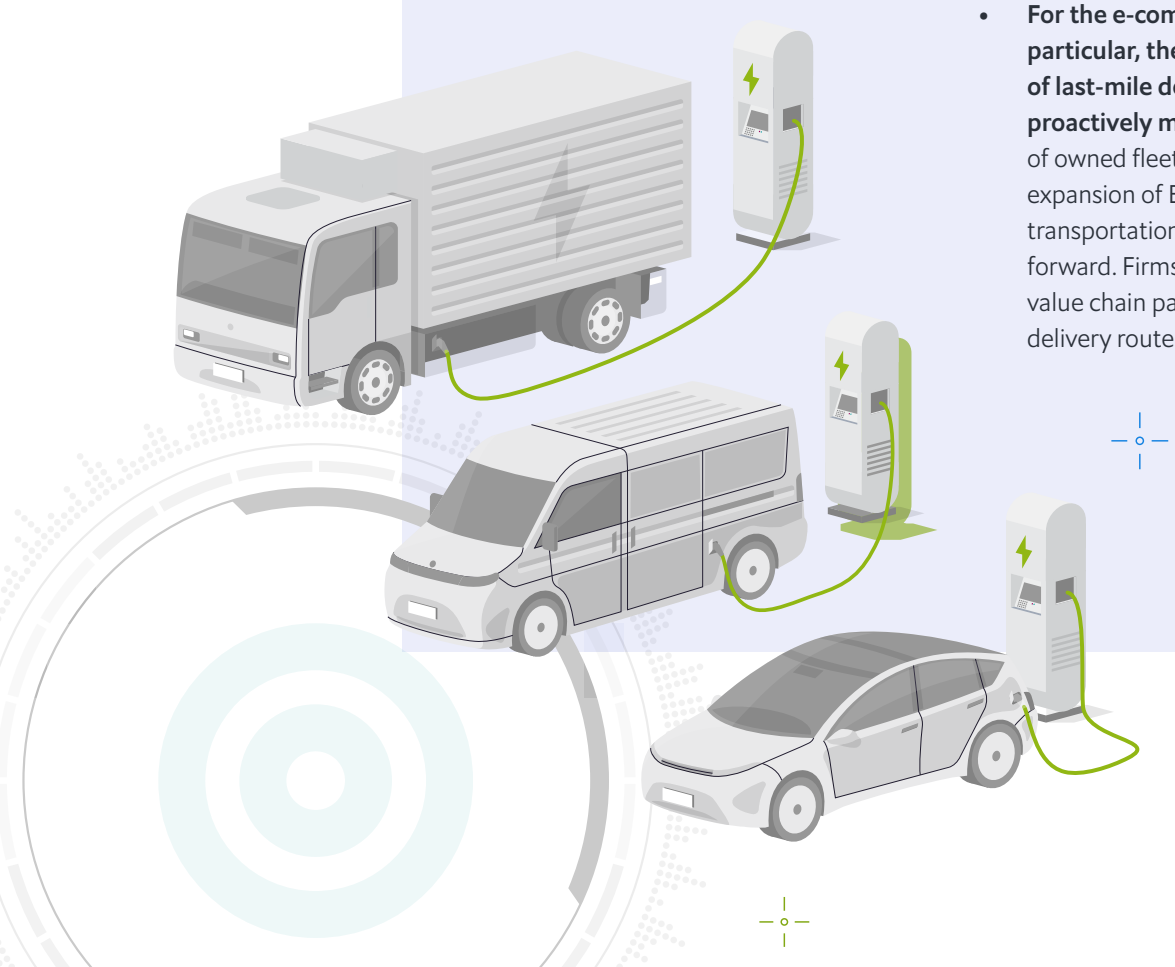
Next steps for decarbonizing the specialty retail industry

- **Increasing renewable energy uptake is the next step on specialty retail's operational decarbonization trajectory.** Specialty retailers across all four regions are ahead of the curve in integrating efficiency measures and retrofitting existing or building new physical infrastructure to reduce their carbon footprint. They can further decrease their operational emissions by increasing the uptake of renewables in the energy mix. Leaders in the sub-sector are making the switch by signing virtual power purchase agreements,[34] installing solar power generation equipment onsite[35] and investing in distributed hydroelectric generation projects.[36]
- **Supporting upstream suppliers in operational improvements and product design innovation can allow retailers to reduce their Scope 3 emissions from the use of sold goods and purchased goods and services.** Our results show that many specialty retailers now have the information at hand to begin tracking emissions throughout their supply chains. The next step should be to use this information to identify the most carbon-intensive suppliers and engage with them through a corrective plan. Partners who still do not make progress on their emissions footprint can be filtered out, with support redirected to those who are actively aligning to low-carbon pathways.
- **For the e-commerce segment in particular, the emerging footprint of last-mile deliveries needs to be proactively managed.**[37] Electrification of owned fleets and supporting the expansion of EVs in their downstream transportation network is one way forward. Firms can also work with value chain partners and invest in delivery route optimization solutions.



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Leader Case Study: Inditex

Inditex, a Spanish apparel company, is one of the top-performing retailers in the decarbonization benchmark. Notably, it is leading the way in managing its operational emissions. All of the firms' corporate offices, self-operated logistics centers and factories have implemented a certified Environmental Management System (EMS) to achieve efficiencies in water and energy use.[viii] Its headquarters are designed to meet the highest sustainable construction standards (LEED certifications developed by the US Green Building Council). In 2022, 100% of energy used at Inditex's facilities, including data centers supporting its e-commerce channel, came from renewable resources.

In addressing the bulk of its emissions spread across complex value chains, Inditex stands out among other retailers as one of the few firms actively excluding its carbon-intensive supply chain partners. External auditors carry out regular environmental assessments at supplier facilities subject to the firm's Green to Wear standard. Suppliers that do not pass the audit are put on a Corrective Action Plan (CAP). Post-CAP, if a supplier continues to remain non-compliant, they are ruled out of Inditex's network.[38]

In actively encouraging the decarbonization of its supply chain partners, Inditex aims to phase out coal usage in its supplier facilities (tier 1 and 2) by 2030. It is supporting the shift of supplier energy mix towards renewables by sharing information on availability, regulations, procedures and indicative prices for the implementation of an array of renewable energy procurement solutions. To manage emissions from transportation and distribution, the firm is also working with its value chain partners to optimize delivery routes and upgrade fleets to electric vehicles.[39]

Supporting innovation to develop low-carbon alternatives for its apparel portfolio is also a priority for Inditex. The firm is collaborating with suppliers and research partners to create 100% recycled denim, pilot new methods of chemical and mechanical recycling of cotton fabrics, and lead commercial development of recycled polyamide (textile materials created from used tyres and agricultural waste).[40]

Despite performing ahead of the curve in operational and value chain decarbonization, as with industry peers, Inditex is yet to assess the impacts of its low-carbon transition on key stakeholders, or take measures to mitigate any negative impacts. Such stakeholders include direct employees and those in the value chain, as well as local communities impacted by its operations and value chain partners.

viii. Inditex's Environmental Management System is certified to ISO 14001 international Standard.

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Supermarkets Sub-Sector

In order to assess the progress that different sectors of the economy are making on decarbonization, Economist Impact's Decarbonization Progress Benchmark evaluated a total of 160 of the largest publicly listed firms across four sectors of the economy (40 in each): Energy, Financial Services Industry, Retail, and Manufacturing. One of the two underlying sub-sectors of Retail is Supermarkets. It consists of the five largest grocery stores, discount stores, and food distributors by market capitalization in each of the four regions under study: North America, Latin America, Asia, and Europe.

Overall score

36.6 /100

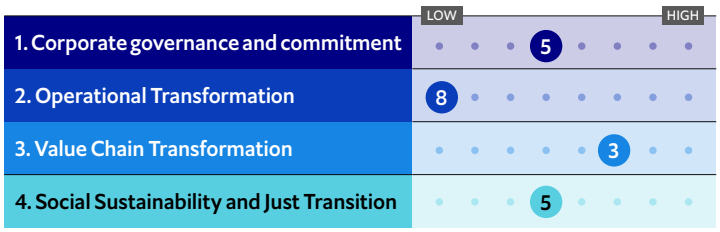
Overall ranking

5 /8

Supermarkets sub-sector emissions split (%)*

Operational emissions (Scopes 1 and 2) | Value chain emissions (Scope 3)

Overall Supermarkets sub-sector rankings for level 1 indicators



Sector summary

#	Level	Indicator	Score /100	Overall ranking /8
1	**1**	**Corporate governance and commitment**	31.0	5
1.1	2	Corporate governance	45.3	4
1.2	2	Commitment to decarbonization	14.3	5
1.3	2	Policy outlook and influence	51.3	3
2	**1**	**Operational Transformation**	48.4	8
2.1	2	Measurement and tracking	77.5	7
2.2	2	Action plan for operational transformation	80.0	3
2.3	2	Operational transformation: reducing scope 1 emissions	85.0	5
2.4	2	Operational transformation: reducing scope 2 emissions	17.7	6
2.5	2	Decarbonization innovation in key operations		
3	**1**	**Value Chain Transformation**	40.2	3
3.1	2	Measurement and tracking	42.5	5
3.2	2	Action plan for value chain transformation	25.0	6
3.3	2	Phasing out carbon-intensive product offerings		
3.4	2	Driving decarbonization across value chain partners	44.0	1
3.5	2	Investing in decarbonization innovation	41.7	6
4	**1**	**Social Sustainability and Just Transition**	13.8	5
4.1	2	Impact assessment, targets and planning	4.2	3
4.2	2	Implementation strategy	10.0	5
4.3	2	Policy outlook and proactive collaboration with the government on just-transition issues	35.0	4

* The split between Scope 1 & 2 and Scope 3 emissions presented here informs the relative weightage assigned to Pillar 2: Operational Transformation and Pillar 3: Value Chain Transformation on the benchmark for the Supermarkets sub-sector. A larger share of Scope 3 emissions in total carbon footprint translates into a higher relative weight for Pillar 3: Value Chain Transformation in the overall benchmark score for a sub-sector. This approach ensures that scores for firms and sub-sectors broadly represent the magnitude of effort needed to address a particular pool of emission, and enables comparison of sub-sectors that may have extraordinarily diverse paths to decarbonization.

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Regional data

#	Level	Indicator	North America	Latin America	Europe	Asia	Global
1	**1**	**Corporate governance and commitment**	**31.0**	**19.3**	**47.7**	**25.9**	**31.0**
1.1	2	Corporate governance	39.0	41.0	59.0	42.0	45.3
1.2	2	Commitment to decarbonization	16.6	4.1	24.1	12.6	14.3
1.3	2	Policy outlook and influence	55.0	25.0	90.0	35.0	51.3
2	**1**	**Operational Transformation**	**51.8**	**56.1**	**43.3**	**42.6**	**48.4**
2.1	2	Measurement and tracking	80.0	70.0	80.0	80.0	77.5
2.2	2	Action plan for operational transformation	100.0	50.0	80.0	90.0	80.0
2.3	2	Operational transformation: reducing scope 1 emissions	100.0	60.0	90.0	90.0	85.0
2.4	2	Operational transformation: reducing scope 2 emissions	13.4	51.4	5.2	0.9	17.7
2.5	2	Decarbonization innovation in key operations	NA	NA	NA	NA	NA
3	**1**	**Value Chain Transformation**	**41.1**	**23.6**	**57.8**	**38.3**	**40.2**
3.1	2	Measurement and tracking	50.0	20.0	60.0	40.0	42.5
3.2	2	Action plan for value chain transformation	30.0	0.0	50.0	20.0	25.0
3.3	2	Phasing out carbon-intensive product offerings	NA	NA	NA	NA	NA
3.4	2	Driving decarbonization across value chain partners	35.7	32.3	67.7	40.3	44.0
3.5	2	Investing in decarbonization innovation	53.3	26.7	40.0	46.7	41.7
4	**1**	**Social Sustainability and Just Transition**	**18.7**	**12.7**	**16.0**	**8.0**	**13.8**
4.1	2	Impact assessment, targets and planning	13.3	3.3	0.0	0.0	4.2
4.2	2	Implementation strategy	10.0	20.0	10.0	0.0	10.0
4.3	2	Policy outlook and proactive collaboration with the government on just-transition issues	50.0	0.0	50.0	40.0	35.0

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Specialty Retail Sub-Sector

In order to assess the progress that different sectors of the economy are making on decarbonization, Economist Impact's Decarbonization Progress Benchmark evaluated a total of 160 of the largest publicly listed firms across four sectors of the economy (40 in each): Energy, Financial Services Industry, Retail, and Manufacturing. One of the two underlying sub-sectors of Retail is Specialty Retail. It consists of the five largest e-commerce, luxury goods, fast fashion, and home improvement retailers by market capitalization in each of the four regions under study: North America, Latin America, Asia, and Europe.

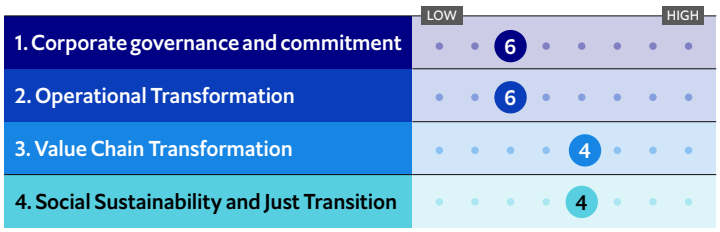
Overall score

35.1 /100

Overall ranking

6 /8

Overall Specialty Retail sub-sector rankings for level 1 indicators



Specialty Retail sub-sector emissions split (%)*

Sector summary

#	Level	Indicator	Score /100	Overall ranking /8
1	**1**	**Corporate governance and commitment**	**27.5**	**6**
1.1	2	Corporate governance	46.5	3
1.2	2	Commitment to decarbonization	12.7	7
1.3	2	Policy outlook and influence	36.3	8
2	**1**	**Operational Transformation**	**53.1**	**6**
2.1	2	Measurement and tracking	87.5	4
2.2	2	Action plan for operational transformation	75.0	4
2.3	2	Operational transformation: reducing scope 1 emissions	87.5	4
2.4	2	Operational transformation: reducing scope 2 emissions	31.1	3
2.5	2	Decarbonization innovation in key operations		
3	**1**	**Value Chain Transformation**	**38.8**	**4**
3.1	2	Measurement and tracking	60.0	2
3.2	2	Action plan for value chain transformation	37.5	2
3.3	2	Phasing out carbon-intensive product offerings		
3.4	2	Driving decarbonization across value chain partners	30.6	4
3.5	2	Investing in decarbonization innovation	33.3	8
4	**1**	**Social Sustainability and Just Transition**	**14.0**	**4**
4.1	2	Impact assessment, targets and planning	0.0	5
4.2	2	Implementation strategy	12.5	3
4.3	2	Policy outlook and proactive collaboration with the government on just-transition issues	32.5	6

* The split between Scope 1 & 2 and Scope 3 emissions presented here informs the relative weightage assigned to Pillar 2: Operational Transformation and Pillar 3: Value Chain Transformation on the benchmark for the Specialty Retail sub-sector. A larger share of Scope 3 emissions in total carbon footprint translates into a higher relative weight for Pillar 3: Value Chain Transformation in the overall benchmark score for a sub-sector. This approach ensures that scores for firms and sub-sectors broadly represent the magnitude of effort needed to address a particular pool of emission, and enables comparison of sub-sectors that may have extraordinarily diverse paths to decarbonization.

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Regional data

#	Level	Indicator	North America	Latin America	Europe	Asia	Global
1	**1**	**Corporate governance and commitment**	**23.8**	**13.8**	**55.3**	**17.3**	**27.5**
1.1	2	Corporate governance	37.0	25.0	84.0	40.0	46.5
1.2	2	Commitment to decarbonization	17.4	0.6	32.1	0.6	12.7
1.3	2	Policy outlook and influence	20.0	30.0	70.0	25.0	36.3
2	**1**	**Operational Transformation**	**48.8**	**48.5**	**72.5**	**42.4**	**53.1**
2.1	2	Measurement and tracking	80.0	90.0	90.0	90.0	87.5
2.2	2	Action plan for operational transformation	80.0	70.0	80.0	70.0	75.0
2.3	2	Operational transformation: reducing scope 1 emissions	100.0	80.0	80.0	90.0	87.5
2.4	2	Operational transformation: reducing scope 2 emissions	23.5	24.6	63.6	12.8	31.1
2.5	2	Decarbonization innovation in key operations	NA	NA	NA	NA	NA
3	**1**	**Value Chain Transformation**	**30.7**	**27.1**	**63.8**	**33.7**	**38.8**
3.1	2	Measurement and tracking	40.0	50.0	100.0	50.0	60.0
3.2	2	Action plan for value chain transformation	20.0	30.0	60.0	40.0	37.5
3.3	2	Phasing out carbon-intensive product offerings	NA	NA	NA	NA	NA
3.4	2	Driving decarbonization across value chain partners	23.3	34.0	37.0	28.0	30.6
3.5	2	Investing in decarbonization innovation	33.3	13.3	60.0	26.7	33.3
4	**1**	**Social Sustainability and Just Transition**	**10.0**	**22.0**	**22.0**	**2.0**	**14.0**
4.1	2	Impact assessment, targets and planning	0.0	0.0	0.0	0.0	0.0
4.2	2	Implementation strategy	0.0	30.0	20.0	0.0	12.5
4.3	2	Policy outlook and proactive collaboration with the government on just-transition issues	50.0	20.0	50.0	10.0	32.5

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6 https://www.nature.com/articles/s43016-023-00795-w
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