

Securing Mining's Future

*Decision-Grade Carbon Signals
for Metals Markets, Finance
and Procurement*

SKARN



2030: The Turning Point for Metals Decarbonisation

How downstream climate commitments are reshaping metals procurement and accelerating the need for comparable product carbon footprints.

October 2026

Why “the next five years will not look like the last five years” (or more specifically, why 2030 will mark a turning point)

This is a quote from one of our panellists at our 2025 LME Week event, during which we discussed the political direction for decarbonisation, and what the trend was likely to be going forward. After the net-zero wave of the past five years – some still call it a hype – the segment of the market believing decarbonisation commitments were going to reverse was growing larger based on our conversations with market representatives.

This (2026) LME Week we will talk about 2030 specifically – and why that is a significant milestone for the metals supply chain. Metal is used in almost all industries, and the supply chain is truly global. This is the context for 2030:

1. Across sectors, many public companies have interim decarbonisation targets set for 2030. Humans like round numbers, although some have set targets for 2035, and in rare instances, 2032.
2. Skarn's review of decarbonisation pathways across 25 metals and mining companies indicates that most companies have already incorporated their most accessible decarbonisation opportunities into their 2030 targets. **Beyond 2030, further reductions are therefore likely to require more complex technologies, greater capital commitment and increased reliance on external infrastructure and energy systems.**
3. A similar challenge is emerging for the end users of metals. As companies progress towards their operational emissions targets and pursue more accessible Scope 3 reductions, the remaining emissions embedded in purchased materials are likely to attract greater scrutiny. This increases the importance of differentiating metals by their production-related carbon footprints.

Big impact categories of Scope 3 emissions, where possible, are being reduced through **portfolio restructures and product portfolio management**. Examples include:

- Mining companies divesting from coal assets to reduce emissions from processing of product sold (Category 10: examples include Glencore and Anglo American)
- Auto manufacturers shifting to EV production from traditional diesel-powered vehicles, to lower Scope 3 emissions relating to use of product sold (Category 11: examples include industrial players like ABB and B2C market players like Ford, GM, Mercedes-Benz, Toyota)
- Full spectrum of end users preferentially sourcing recycled material which can avoid much of the emissions burden associated with primary production, although its carbon footprint depends on the recycling process, energy inputs and accounting methodology.

What does this mean for the metal producers of the world?

Beyond 2030, greater focus will be placed on emissions from supply chains. Selective sourcing is underway but limited by the volume of recycled material available and lack of comparable PCFs.

Increasingly, end users will ask – what is the global average PCF for this particular product? How do we balance security of supply with energy transition resilience, and how much of the metals produced is low in carbon relative to its peers?

For primary metal producers, the implications extend beyond the possibility of a low-carbon premium. Increasing scrutiny of supply-chain emissions could influence supplier qualification, procurement specifications, contract negotiations and ultimately market access.

Producers with credible, comparable product carbon footprints will be better positioned to demonstrate their carbon competitiveness. For producers unable to do so, the commercial risk is not necessarily a discount today, but a reduced ability to compete on carbon performance as procurement requirements evolve.

What Skarn is doing about it

- Comparability – MeridianPCF will provide global, methodologically consistent coverage of copper concentrate and copper cathode, with the latter including secondary production facilities.
- Credibility – MeridianPCF methodology is validated by SGS to be aligned with the principles of ISO 14067
- Cost-effective PCFs – Skarn has partnered with SGS to provide the market with a lower-cost option to receive a PCF. It represents a step towards a PCF that is fully compliant ISO 14067, opening up the possibility for smaller producers with significantly less resources to compete with larger producers on a level playing field.

The product will launch next week at LME Week – you can sign up to receive details.

BHP set a group-wide net-zero operational emissions goal as early as 2017, several years before net-zero commitments became standard across the major miners. It created waves in the market with many other companies following suit in the subsequent years.

Mining companies are notorious for seeking to be “the first to be the second”. However, mining did not lag badly in setting long-term net-zero ambitions. Corporate net-zero commitments arrived across industries on broadly similar timelines. The next transition is different: from company-level commitments to product-level carbon differentiation in real supply chains.

In this insight, we provide a high-level summary of end user decarbonisation targets, for those companies for which raw materials form a significant component of their direct upstream value chain. Skarn has most often been asked these three questions:

1. Is it just Europe?

Short answer – no. According to the SBTi tracker published in April 2026, Asia and Africa were two regions that saw the biggest growth in adoption of SBTi targets. In terms of market penetration, European indices are leading with the proportion of companies that have SBTi or decarbonisation commitments, followed by almost 50% of the Nikkei index and 40% of the S&P 500.

Long answer – it depends on the sector and the supply chain it’s tapping into. Even amidst the noise of national and regional tariffs and projects to secure supply of critical minerals, the metals industry is global with its products feeding into almost every other sector. Long gone are the days when you can talk about, for example, a British motor company predominantly manufacturing in and serving the European market.

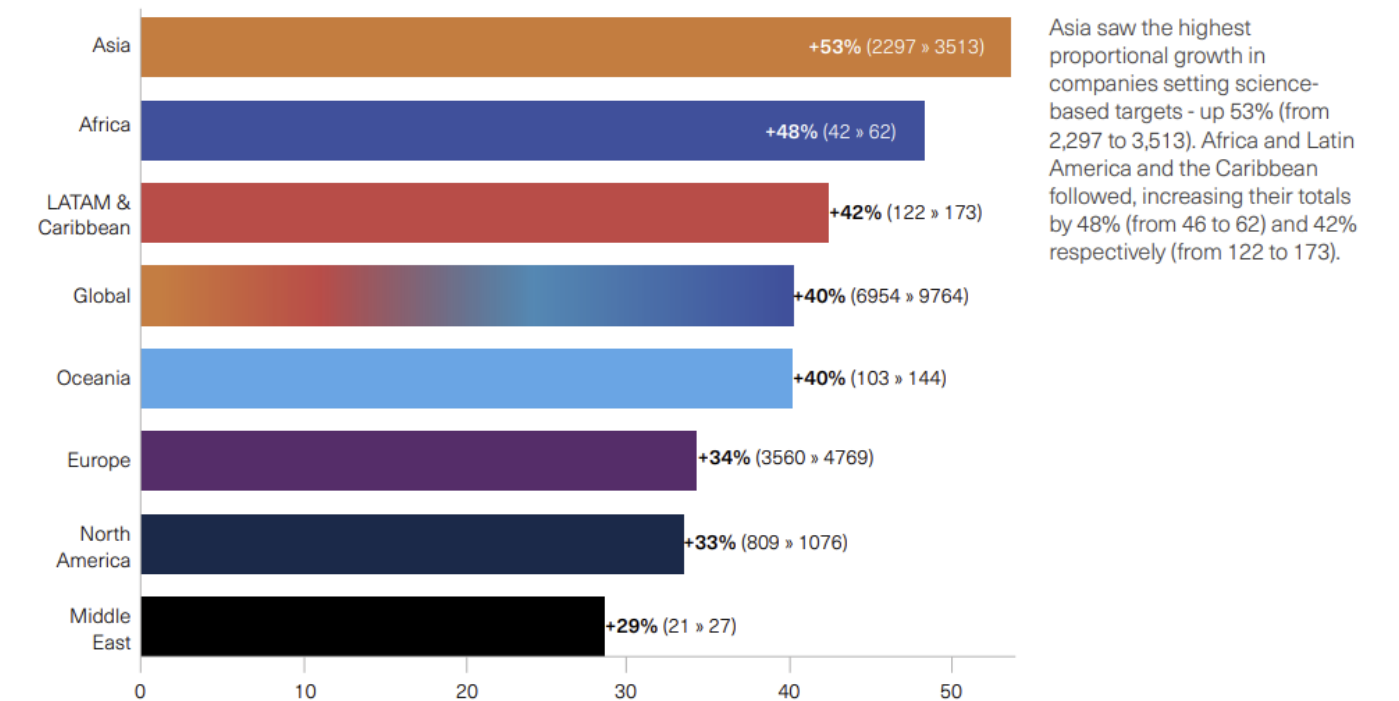
Some supply chains are more integrated than others – but both aluminium and copper enter manufacturing facilities all over the world. Some of them in Europe, some of them not. In fact, most manufacturing takes place outside of Europe.

2. Is it influencing sourcing decisions?

Short answer – yes, but it’s not immediately obvious today because:

1. **The absence of comprehensive, methodologically consistent PCF coverage makes reliable comparison across the global supply base difficult, particularly for copper.** In the absence of reliable comparisons, buyers have increasingly used recycled content as a proxy for lower-carbon material.
2. **It depends on the proportional significance of Scope 3 emissions.** The end users, like miners and metal producers themselves, have been tackling easy-win reductions of operational emissions (Scope 1 and 2). Incidentally, most of the interim decarbonisation targets are set for 2030 (some for 2035).

Growth in cumulative number of companies with SBTi targets between 2024 and 2025, by region, %



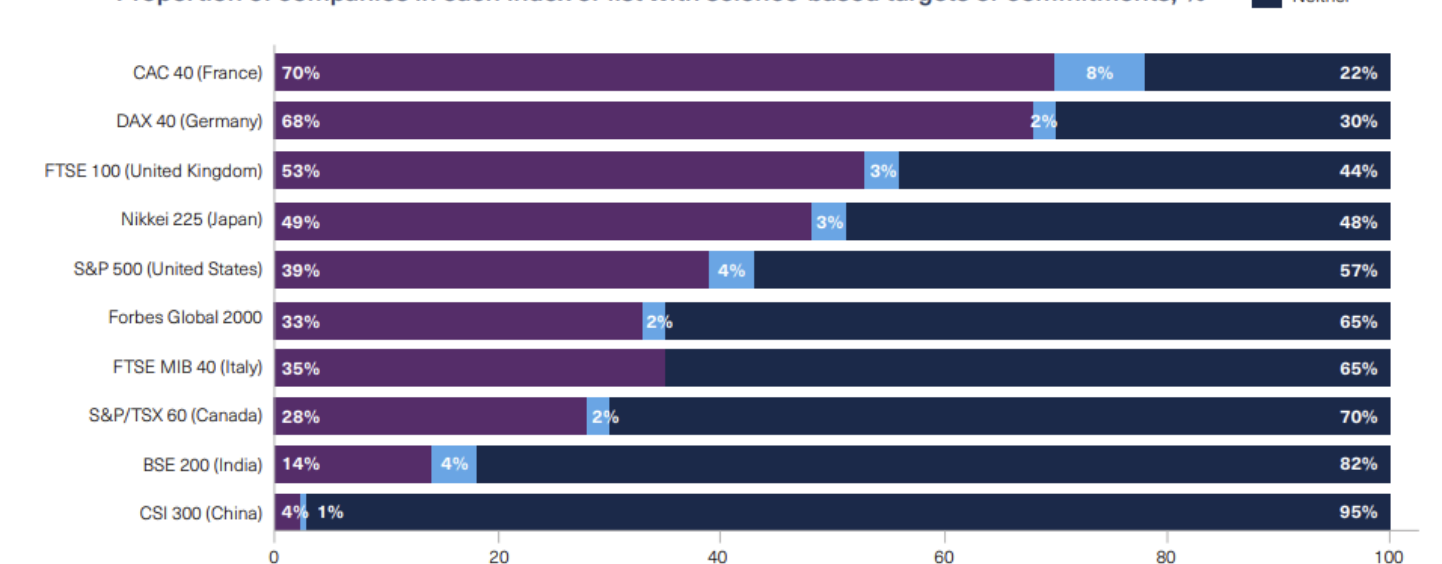
Asia saw the highest proportional growth in companies setting science-based targets - up 53% (from 2,297 to 3,513). Africa and Latin America and the Caribbean followed, increasing their totals by 48% (from 46 to 62) and 42% respectively (from 122 to 173).

Note: Absolute change in companies with targets is shown in brackets.

Source: SBTi (data correct up to end of 2025)

Market Penetration Maintains Spread: Companies with Targets Hold Notable Presence in Key Indices

Proportion of companies in each index or list with science-based targets or commitments, %



Source: SBTi and publicly available index/list constituents data (data correct up to end of 2025)

3. Could it all reverse?

Some companies have back-pedalled — Honda, for example — while others have strengthened their commitments. Prysmian, for instance, has revised its interim 2030 decarbonisation targets upwards three times since 2021, most recently increasing its Scope 3 reduction target from 28% to 65%. Is Net Zero the new status quo – the new normal? The adoption of SBTi targets appear to be going that way. In the history of mankind, “new normals” have been forged many a times. It is a very rapidly changing world after all.

What is the momentum behind net zero? Skarn believes it's energy transition, with governments de-risking their reliance on imported fuels (typically fossil). Energy security creates a powerful structural incentive for the transition, even where political support for decarbonisation fluctuates.

A recent example is Germany's unveiling of its plans at the UN General Assembly in New York during Climate Week to [phase out fossil fuels by 2045](#). This is both 1. a huge commitment and 2. not a surprise. Why?

1. According to the International Energy Agency (IEA), [fossil fuels made up nearly 78%](#) of Germany's total energy supply in 2025. Oil and oil products were 35.2%, natural gas 27.5% and coal and coal products 14.7%.
2. Against this backdrop, Germany was also heavily dependent on imported energy: net energy imports were 7.0 EJ in 2025, equivalent to 69% of its total energy supply.

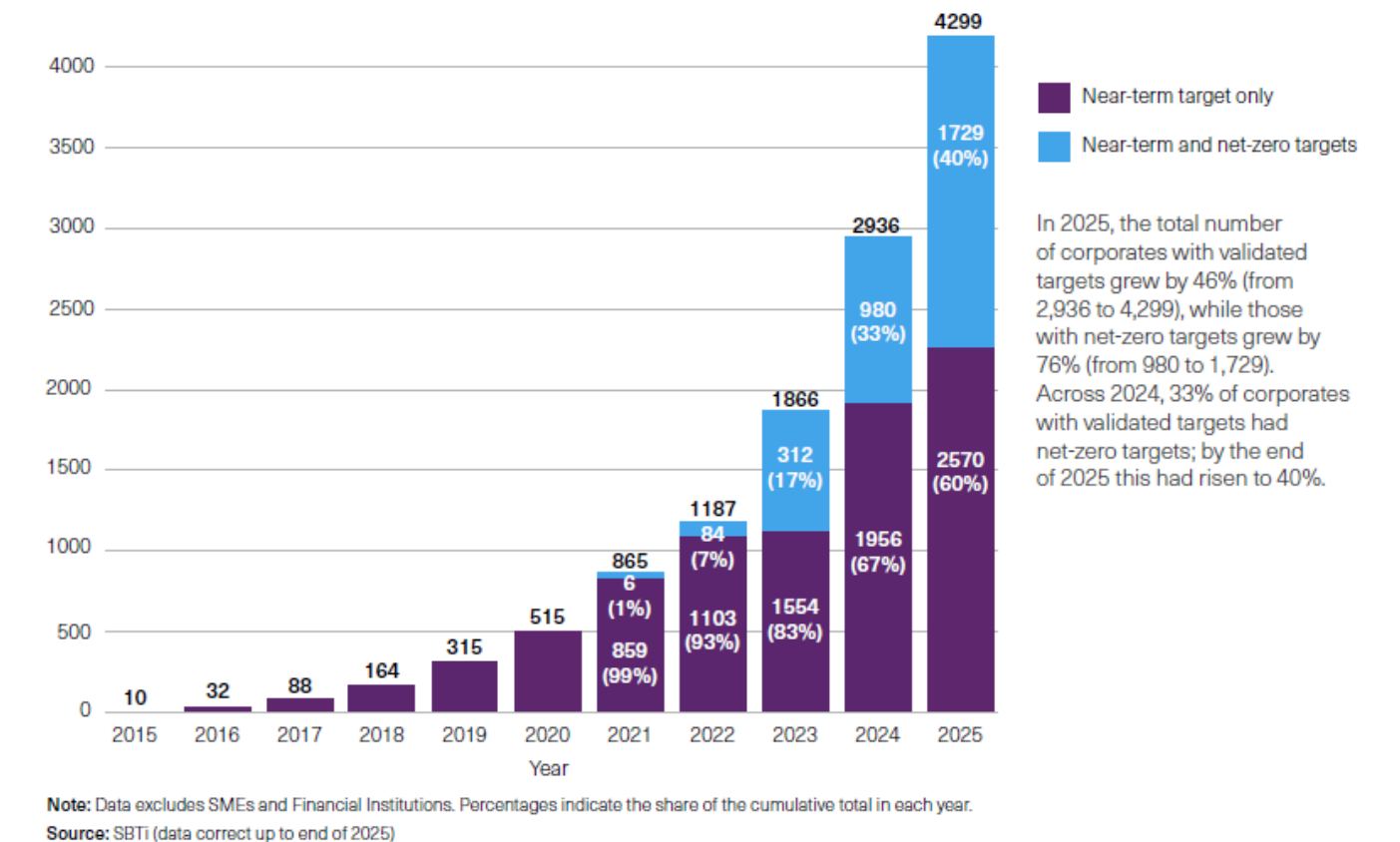
So the commitment to phase out fossil fuels is not only a climate commitment. It is also about reducing exposure to imported fossil fuels and strengthening energy security - how Germany secures the energy required to fuel its industries and society.

Quoting Federal Environment Minister Schneider - “It is not just extreme weather events around the world that show how urgently more climate action is needed. More and more countries are realising just how costly and dangerous their dependence on fossil fuels is. When the situation in the Strait of Hormuz determines whether people can still afford their daily commute to work, something is seriously wrong. We need to break our dependence on fossil fuels – and we can.”

Another important note – recycled production has constraints of its own. Much of the target setting for copper end users has involved sourcing of recycled material – which, for reference, is not always lower in embodied carbon than non-recycled material. If demand for lower-carbon metals continues to strengthen, reductions in emissions from primary production will become increasingly important alongside recycling.

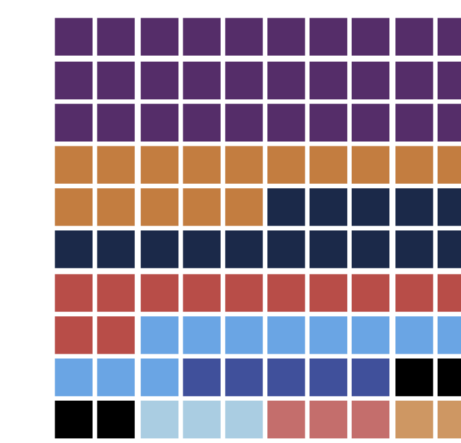
Viewed through the lens of energy security, it is not enough for primary metal producers simply to supply the materials required for the energy transition. Their own operations also need to decouple from fossil-fuel dependence. The following pages examine how decarbonisation commitments among major end users are already influencing metals sourcing decisions.

Corporates with SBTi targets, cumulative, by company status

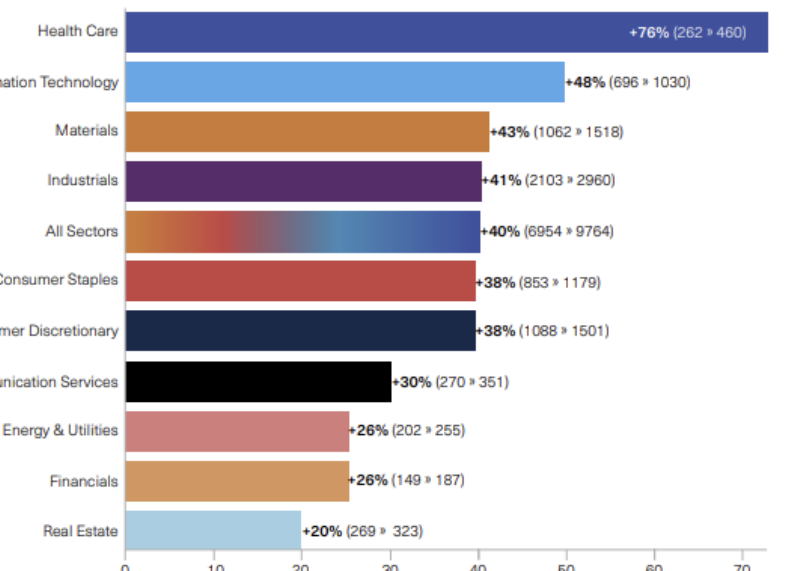


Sector Ambition Leaders: Industrials, Consumer Goods, and Materials

Distribution of companies with SBTi targets by GICS sector, end of 2025, %



Growth in companies with SBTi targets by GICS sector, between 2024 and 2025, %



Note: Sectors based on the Global Industry Classification Standard (GICS), which includes Professional Services under Industrials. Absolute change in companies with targets shown in brackets.
Source: SBTi (data correct up to end of 2025)

The aluminium market provides some of the clearest public examples of low-carbon metal procurement extending into consumer-facing products. Partnerships involving Chanel, Nespresso, Brompton and major automotive manufacturers demonstrate how aluminium's carbon attributes are increasingly becoming part of commercial supply agreements.

For refined copper, the picture is less visible. Copper typically passes through more fragmented intermediate supply chains before reaching the final consumer, making it harder to connect primary production with end-product carbon claims. Yet demand for lower-carbon copper is emerging among cable manufacturers, electrical-equipment suppliers and infrastructure developers, as illustrated on the following page. This makes consistent and comparable PCF information particularly important for copper producers seeking to demonstrate their carbon competitiveness.

The “Don’t Talk About It” Phenomenon: Through our conversations across the metals and mining industry and its wider supply chain, Skarn has encountered instances where companies have explicitly discouraged public communication of sustainability-related activities, including at regional or divisional level.

One interesting feature of public announcements involving ELYSIS is the greater visibility of Rio Tinto relative to Alcoa, despite both companies holding equal 48.25% interests in the technology venture. This raises an important question: to what extent do public announcements capture the full picture of commercial activity involving lower-carbon metals? This example alone does not necessarily indicate undisclosed transactions in the market but reinforces the need to distinguish publicly reported activities from the underlying development of the market.



RioTinto

November 2018: MoU to use ASI-certified responsibly sourced aluminium in coffee capsules, working with capsule manufacturers, with a commitment to 100% sustainable aluminium. The Chain of Custody mechanism carries the responsible-production attribute through to Nespresso. [\[Source\]](#)



July 2020: Strategic partnership using Hydro CIRCAL 75R, with at least **75% post-consumer recycled aluminium**, in beverage cans sold to consumers. HELL explicitly framed the packaging as a consumer sustainability proposition. [\[Source\]](#)



RioTinto

October 2020: Global partnership to bring beer cans made from Rio Tinto's hydropower-based low-carbon aluminium plus recycled content to market, with a potential >30% reduction in carbon per can versus conventional North American cans. [\[Source\]](#)



Apple RioTinto



March 2022: Apple helped finance ELYSIS, bought its first commercial batch in 2019 for the 16-inch MacBook Pro, and in 2022 agreed to purchase the first industrial-scale commercial-purity low-carbon aluminium for the iPhone SE. [\[Source\]](#)

BMW GROUP

RioTinto

February 2023: agreed to supply aluminium for BMW's US production with around a 70% lower carbon footprint, alongside ASI certification and supply-chain transparency; the material goes into vehicle body components. [\[Source\]](#)



April 2023: moved from a 2023 LoI into a long-term 2024 supply agreement covering low-carbon aluminium (Hydro Reduxa 4.0 and lower) for Porsche and its component suppliers, including a capacity-reservation model. [\[Source\]](#)

BROMPTON



June 2023: agreement to introduce low-carbon aluminium. By 2024 Brompton had launched wheel rims made from 100% post-consumer Hydro CIRCAL 100R, with a footprint below 0.5 kg CO₂e/kg Al and batch-level transparency. [\[Source\]](#)



September 2026: strategic partnership through 2030 to develop low-carbon aluminium for fragrance, makeup and skincare packaging. Starts with **Hydro REDUXA** at ≤4 kg CO₂e/kg Al, with an ambition towards ~3 kg, plus greater traceability and recycled content. [\[Source\]](#)

Downstream decarbonisation targets are beginning to transmit carbon requirements directly into metals procurement. The examples below illustrate different stages of this shift: supplier engagement and emissions-reporting requirements, explicit carbon criteria in procurement, and announced agreements for lower-carbon or recycled metals. These are not interchangeable indicators of demand.



“Since 2015, Apple has worked in close partnership with its global suppliers to address the electricity used to manufacture Apple products. Manufacturing is the single largest source of emissions in the company’s carbon footprint, and powering it with 100 percent clean energy is a key driver in making all Apple products carbon neutral – like those in the new Apple Watch lineup.” [\[source\]](#)

Headline examples: [ELYSIS \(Alcoa, Rio Tinto\)](#), [Supplier Clean Energy Program](#)



“The BMW Group has made CO₂e emissions reductions in the supply chain a key criterion in contract awards. Since 2021 green energy has been mandatory, not only for our direct (Tier 1) suppliers but also for energy-intensive processes further upstream in the value chain...” [\[source\]](#)

Headline examples: [EGA](#), [Rio Tinto](#), and [Salzgitter](#).



“Nexans has launched an online assessment platform offering our suppliers and partners a transparent view of their E3 performance, as measured by scores on each of the model’s three pillars. The E3 supplier platform is a powerful tool for the Group, because it helps us to select partners whose values and priorities best match Nexans’ focus on sustainable electrification and value creation.” [\[source\]](#)

Headline examples: [Alcoa](#), [Hydro](#)



“To deliver on its science-based 2040 net-zero target, Ørsted works systematically to also decarbonise its supply chain across the most significant emissions sources, related to steel for foundations and wind turbine towers, fuels used for vessels, and copper used for cables.” [\[source\]](#)

Headline examples: [Dillinger](#), [Vestas](#), and [NKT](#).



“Upstream Scope 3 emissions, which represent 14% of Schneider Electric’s footprint in 2024, relate mostly to purchased goods and services... Our sustainable materials experts measured emissions and implemented an action plan to increase green material content in our products, which became a dedicated target in our [Sustainability Impact program](#) (2021-2025)” [\[source\]](#)

Headline examples: [Arcelor Mittal](#), [Glencore](#), [Rio Tinto](#)



“To reduce Category 1 emissions, which account for approximately half of Scope 3 emissions, the Group has identified the top 100 emitters, focusing on manufacturers of materials such as copper, steel, aluminum, and synthetic resin, which account for a large proportion of CO₂ emissions, as priority targets for its supplier engagement activities.” [\[source\]](#)

Headline examples: [YKK](#)

However, taken together, they demonstrate how downstream decarbonisation commitments are increasingly influencing purchasing decisions and supplier relationships. Major cable manufacturers, electrical-equipment companies and automotive OEMs are already selecting lower-carbon metals, specifying recycled content, requesting supplier-specific carbon footprints and incorporating CO₂ performance into contract awards.



“We prioritize business with suppliers who help us meet our decarbonization goals; and we engage with our suppliers to set credible targets, share their progress, and avoid carbon emissions over time.” [\[source\]](#)

Headline examples: [Arcelor Mittal](#), [BHP](#), [Rio Tinto Nuton](#), [Rio Tinto / Prysmian](#)



“More than 80% of carbon emissions across CATL’s product lifecycle stem from its supply chain, with total value-chain emissions exceeding five times those generated in core operations. As the world ramps up efforts toward net-zero, zero-carbon batteries will not be a choice but a necessity in the near future.”

[\[source\]](#)



Climate & Circularity is one pillar of NKT’s Procurements Sustainability Strategy. Supplier Decarbonization is a large lever for NKT to decarbonize and support NKT’s corporate Climate & Circularity strategy and SBTi target ambition. The impact of materials on a cable’s carbon footprint is approximately 70%. [\[source\]](#)

Headline examples: [Aurubis](#), [Boliden / Elcowire](#), [Hydro](#)



“Raw materials are among the most important levers for reducing Prysmian’s Scope 3 emissions. The Group is therefore increasing the use of recycled and low-carbon alternatives in key materials such as copper, polyethylene and aluminum, leveraging supplier partnerships, material traceability and technical qualification to ensure both emissions reduction and product performance.”

Headline examples: [Aurubis](#), [La Farga](#), [Rio Tinto](#)



“As we work toward our new Scope 3 emissions target, we are deepening our focus on upstream supply chain activities that contribute to these emissions... In our upstream supply chain, we engage with suppliers and uphold responsible procurement practices to ensure that supply chain partners are aligned with our sustainability strategy and emissions reduction goals.” [\[source\]](#)

Headline examples: [BHP](#)



“... we have identified the lifespan of many technical components in our high-voltage grid, plus the impact on emissions when these components are replaced. In our procurement process, we then give urgency to environmentally friendly alternatives in phases. The first phase includes materials for pylons and high-voltage substations.”

Headline examples: [Hitachi Electric](#), [Siemens Energy](#)

Targets are presented as reported by each company. Baseline years, emissions boundaries, target scopes and intensity metrics differ; figures are not directly comparable.

Cable & Wire Producers



Baseline 2019
S1 & S2 -60% by 2030
S3 -65% by 2030
NZ 2035



Baseline 2020
S1 & S2 50% by 2030
S3 25% by 2030
NZ 2050



Baseline 2019
S1 & S2 -46.2% by 2030
S3 -30% by 2030
NZ 2050



Baseline 2022
S1 & S2 -54.8% by 2032
S3 -30% by 2032
NZ --



Baseline 2019
S1 & S2 -90% by FY30
S3 Cat 1,11 -27.5% by 2030
NZ 2050



Baseline 2018/19
S1 & S2 -46.2% by 2030
S3 Cat 1 -46.2% by 2030
NZ < 2045



Baseline FY18
S1 & S2 -50% by FY30
S3 -30% by FY30
NZ 2050



per tonne product
 Baseline 2024
S1-3 -10% by 2030;
(intensity) -12% by 2032
NZ 2050

Electrification & Industrial Technology



S3 - per unit capacity

Baseline 2019
S1 & S2 -80% by 2030
S3 (int) -55% by 2030
NZ 2050



Baseline FY19
S1 & S2 -90% by FY30
S3 -30% by FY30
NZ FY50



Baseline 2019 (2022 S3)
S1 & S2 -80% by 2030
S3 -25% by 2030
NZ 2050



Baseline 2017 (2021 S3)
S1 & S2 -90% by 2030
S3 -25% by 2030
NZ 2050



Baseline 2018
S1 & S2 -50% by FY30
S3 -15% by 2030
NZ (S1+2) 2050



Amazon Corporate Target

Baseline --
S1 & S2 --
S3 --
NZ 2040



Baseline 2019
S1-3 -50% by FY30
CFE 2030
NZ 2030



Baseline 2021
S1 & S2 -42% by 2031
S3 < baseline
NZ 2030

Automotive OEMs



Baseline FY19/20
S1 & S2 -46% by 2030
S3 (int) -54% by 2030
NZ 2039



Baseline 2017 (2019 S3)
S1 & S2 -76% by 2035
S3 Cat 11 -50% by 2035
NZ 2050



Baseline 2019
S1 & S2 -46.2% by 2030
S3 C1,4,11 -27.5% by 2030
NZ 2050



*Intensity by car

Baseline 2019 (2018 LCA)
S1 & S2* -60% by 2030
LCA 65-75% by 2030
NZ 2040



Baseline 2018
S1 & S2 -50% by 2030
S3 Cat 11 -30% by 2030
NZ 2050



Baseline 2018
S1 & S2 -72% by 2035
S3 Cat 11 51% by 2035
NZ 2040



Baseline 2019
S1 & S2 -68% by 2035
S3 Cat 11 -33.3% by 2030
NZ 2050



Mercedes-Benz

Baseline 2018
S1 & S2 -80% by 2030;
S3 Cat 11 -40% by 2030
NZ 2039 ambition

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