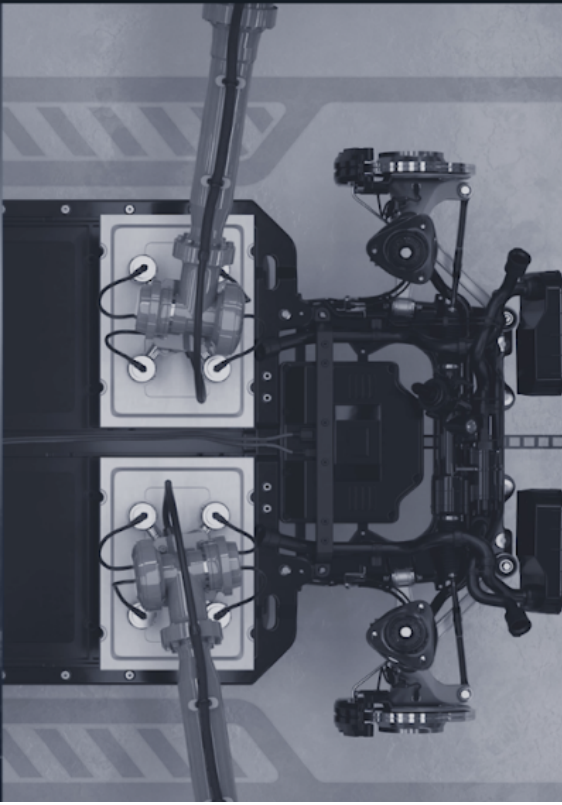


Briefing

Automotive Supply Chain Leaderboard



Automakers can Lead the Charge to an Equitable, Sustainable, and Fossil-Free industry

We're heading towards an all-electric vehicle future, but that is only part of the picture. Automakers have the power to influence and clean up major heavy industries in their supply chain, starting with steel, aluminum, and batteries – because the climate, environment, stakeholders, and rights-holders demand it.

Executive Summary

Lead the Charge is a collaborative new initiative bringing together diverse local, national, and global organizations calling on automakers to radically transform their supply chains to be equitable, sustainable and 100% fossil free. Tailpipe emissions are on their way out, but if we're to stay on a 1.5°C emissions pathway and not repeat poor business-as-usual practices, from mining to manufacturing, we need to urgently focus on the auto supply chain too. The EV transition presents an unprecedented opportunity we cannot let pass us by to rebuild supply chains for the better – for local communities, workers, Indigenous Peoples, the environment, and the climate.

Our supply chain leaderboard shows there is action already underway:

- Mercedes leads the charge overall with many of the best human rights policies and practices, and fossil-free and environmentally sustainable supply chain investments;
- Volvo is the stand-out steel and aluminum leader, and overall on fossil-free and environmentally responsible supply chains; and
- Ford shows affordable automakers can do it too, ranking top on transition minerals and worker rights, plus some initial announcements on fossil free and environmentally sustainable steel and battery metals.
- VW, as a top 2 global auto, has important targets and policies overall, but has not shown as many concrete specifics as others.

But there is still a long way to go:

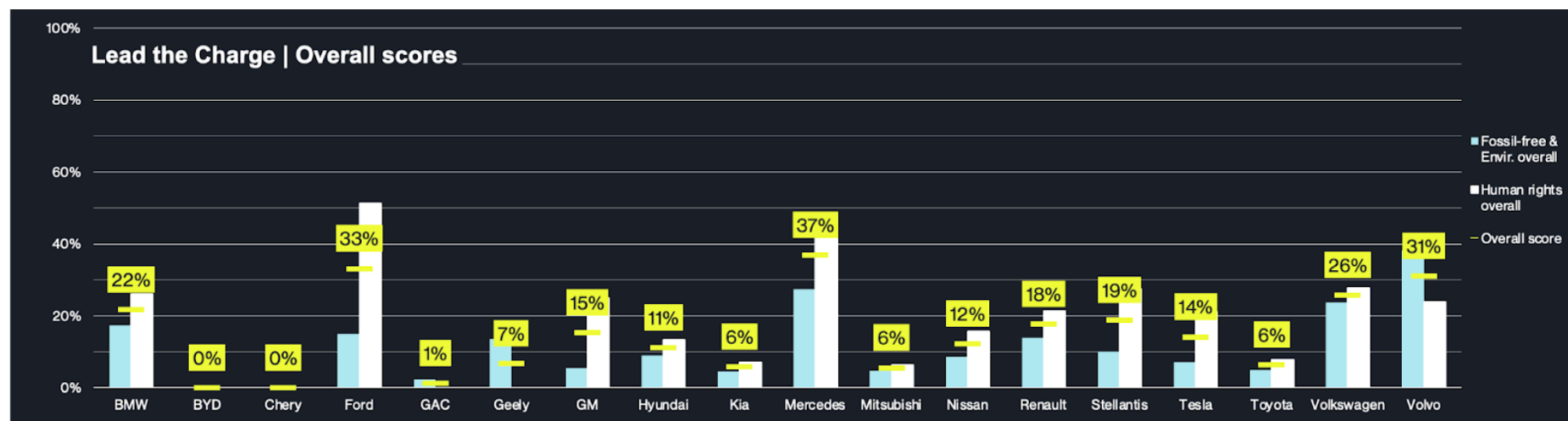
- Toyota, the other top 2 global auto and former green darling now biggest EV laggard, is way behind on their supply chain too.
- Tesla, the original and still EV leader, has been making progress on batteries and responsible sourcing, including one of the few automakers acknowledging Indigenous rights, but is falling short elsewhere – with their sustainable energy mission, fossil-free and sustainable supply chains are a significant opportunity for Tesla to lead all over again.

- BYD, the rapidly growing and #2 EV maker globally, is also far behind despite their vertical integration and will be increasingly exposed to new regulations and stakeholder expectations as they expand overseas.
- Hyundai-Kia, the third-largest automaker and snapping up EV market share, makes sustainable material claims but misses the bigger picture and opportunity, with their own steel subsidiary, Hyundai Steel, and fellow Korean powerhouses, POSCO, LG, and SK.
- Of the East Asian autos, Geely Auto shows a glimmer of what could be on fossil-free and environmentally sustainable supply chains, particularly steel, and rank higher than several European and US automakers. With the Zhejiang Geely Holding Group having major stakes in automakers already leading the charge—Polestar, Volvo, and Mercedes—Geely could hold lots of potential as a multi-brand leader.

Our clean electrified future needs to be clean end-to-end, from mine to manufacturing – the next stage of the race for an equitable, sustainable, and fossil-free automotive industry is already on. The time to act is now and automakers can lead the charge by taking action in four key ways:

- Commit to and enforce credible targets and policies;
- Disclose your progress and supply chain risks and impacts;
- Leverage your influence to shift global supply chains; and
- Partner with supply chain stakeholders to advance a just transition.

Figure 1: Overall auto supply chain scores



Tailpipes are on their way out – we need to focus on the auto supply chain too

The EV transition is inevitable – we’re not done yet and it needs to go faster in many ways, but we are on our way to ending the biggest source of transport emissions: the tailpipe.

You might think that the EV transition is a big enough job as it is, so why do we need to worry about supply chains too? Because as the EV transition accelerates, the emissions profile of the auto industry swings dramatically from what comes out the tailpipe to what goes into the vehicle: its supply chain. An internal combustion vehicle is far more carbon-intensive over its lifetime than an electric thanks to all that oil it burns, but building an EV is more fossil- and resource-intensive in the first place.

That is because many of the materials that go into making a car—historically with internal combustion engine vehicles and risk being inherited by electric vehicles too—are dirty: made with fossil fuels, despoiling the land, and harming people. As a recent report shows, commissioned by rising EV and supply chain leaders, Rivian and Polestar, there is no time for delay as supply chain emissions must drop 81% by 2032 to stay on a 1.5C pathway. We need to start moving on this too if we are to achieve our global climate goals.

The auto supply chain has always been dirty – we have an unprecedented opportunity to change that

Let’s start with steel and aluminum, as they each currently comprise ~65% and ~12% of a car’s overall weight and as industries overall, are responsible for 8-11% and 2% of global greenhouse gas emissions, respectively. If these fossil fuel-intensive industries were a country, they’d be in the top 3 biggest greenhouse gas emitters in the world, somewhere between the USA, India, and the EU. They can also be harmful to those living near and working in those industries, including air pollution and land degradation – and we have a narrow window for action. According to the IEA, large proportions of the heavy industry infrastructure necessary to make cars will reach a critical investment milestone this decade: refurbish and extend its life—and emissions—for decades to come, or replace it with clean and fossil-free? Given the significant investments and timelines required to transform heavy industries, we cannot miss this “critical window of opportunity from now to 2030.” “Rapid action” and “early progress in the 2020s is essential” to achieve our climate goals – and as the biggest buyer of aluminum and a top buyer of steel, particularly high-grade steel, the automotive industry can exert outsized influence to drive rapid transformation.

As the EV transition accelerates more and more, the [rapidly growing battery supply chain](#) becomes increasingly important, because how they're made isn't always clean either. In addition to reporting on human rights abuses, environmental damage from mining, or the risk to Indigenous Peoples' lands in the rush for more minerals, battery metals comprise a large proportion of EV supply chain emissions – and together with steel and aluminum, [add up to approximately three quarters of all supply chain emissions](#). These issues are sometimes raised to question the EV transition and to keep the internal combustion status quo in place, but this is a false comparison that only serves to obscure the gross abuses the oil industry has perpetuated for decades: spills, pollution, exploitation, resource wars, disinformation – and all those emissions responsible for our climate crisis. Unlike oil however, batteries offer the possibility of being manufactured—and recycled—in a way that is equitable, sustainable and free from fossil fuels. The problem isn't batteries: the problem is poor business-as-usual practices, from mining to manufacturing, that perpetuate these harmful impacts. Or as plainly put by a clean energy journalist, David Roberts, [“There are ugly and cruel ways to go about an energy transition, and there are sustainable and equitable ways to go about it.”](#)

The radical and rapid transformation of the auto industry and its supply chain presents an unprecedented window of opportunity to rebuild supply chains for the better—for local communities, workers, Indigenous Peoples, the environment, and the climate. It is an opportunity we cannot let pass us by.

Transforming auto supply chains is not only possible, but a business imperative

As they operate now, these supply chains present growing business risks to automakers – and as major buyers of high-grade steel, aluminum, and batteries, automakers have a key role to play. Some automakers point to how complicated, deep, and vast the auto supply chain is as a reason for not making progress. But with automakers and other supply chain stakeholders implementing strategies like direct deals with mining companies and blockchain to track minerals from mine to car shows that where there is the will to go deep into their supply chain, there are many ways.

Firstly, automakers and their suppliers risk their reputation and license to operate if their supply chain policies and the deals they're striking don't ensure high climate, environment, and human rights standards. Workers, Indigenous Peoples, or local communities can exercise their rights and disrupt plans – and our globally connected digital world can swiftly shine a harsh light for all to see.

Secondly, new and emerging regulations are setting the bar much higher, such as the [EU's battery regulations](#) and carbon border adjustment mechanism [potentially including cars in the near future too](#), and [US-EU trade discussions on green steel and aluminum](#).

Thirdly, investors and financiers are increasingly elevating ESG as drivers of long-term value creation, including major institutional investors like the Norwegian sovereign wealth fund, [Norges Bank](#), and investor stewardship initiatives like [CA100+](#) and [Advance](#) – they are directly engaging companies falling short, submitting resolutions and using their voting power, and if it comes to it, divesting.

It is also an opportunity for competitive advantage and, as Rivian and Polestar's report highlighted, [collaboration](#). In an increasingly crowded EV market with traditional brand loyalty being upended and ever-more-savvy and deep green consumers eyeing what's next, automakers can bring an end to dirty metals and instead create a clean electrified future that is built equitably, sustainably, and 100% fossil-free – and automakers reading the tea leaves are already making moves to get there first.

Automakers can lead the charge for an equitable, sustainable, and 100% fossil-free automotive industry

Lead the Charge is a collaborative new initiative bringing together diverse local, national, and global organizations calling on automakers to capitalize on the unprecedented opportunity of the EV transition to radically transform their supply chains to be equitable, sustainable and fossil free – in the process not only manufacturing truly clean cars, but collaborating and catalyzing major shifts in heavy industries such as steel, aluminum, and mining.

We're kicking off the race by evaluating who's winning, who's not far behind, and who's being left in the dust: from automakers already leading the EV transition, like Tesla and BYD, to incumbents that vary in their EV progress, like VW, Hyundai-Kia, and Toyota – because as the biggest automakers in the world, they're the ones buying the most steel and aluminum, regardless of what currently makes them move, oil or electrons.

We analyzed automakers' progress towards an equitable, sustainable, and fossil-free supply chain and ranked them on our Leaderboard in two categories ([see our full leaderboard and methodology](#)):

- Fossil-free and Environmentally Sustainable: We evaluated automakers' climate and environmental disclosure, commitments and progress, and supply chain actions on the supply chain overall and for steel, aluminum, and batteries. This includes leveraging supplier mandates and purchase agreements, and how recycling and circular design can be both much more efficient and reduce the need for further extraction; and
- Human Rights and Responsible Sourcing: We evaluated automakers' human rights policies overall and areas of particular pertinence to the auto supply chain, including transition minerals sourcing, Indigenous rights, and worker rights. This includes how they identify, mitigate, and remedy human rights abuses, and grievance and remedy mechanisms.

So what did we find?

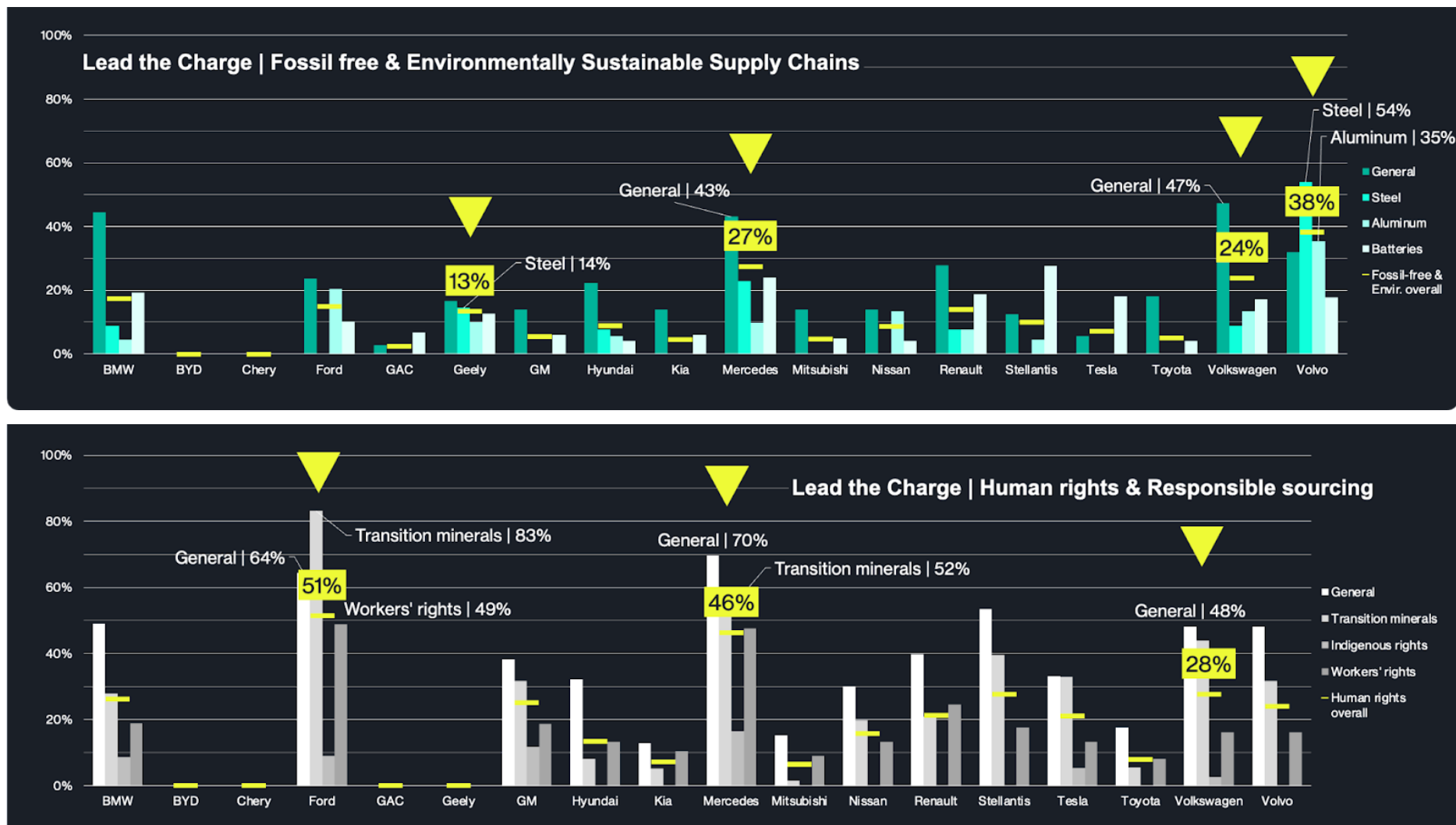
Auto leaders: A range of bright spots

Major European automakers—notably those with some of the most aggressive EV transition goals too—stand out in similar and different ways.

Mercedes leads the charge with many of the best human rights policies and practices and some of the more comprehensive mapping of their transition minerals supply chain. They're also making fossil-free and environmentally sustainable investments in steel and aluminum, recycling, and how batteries can be less mineral-intensive, demonstrating that automakers can take effective action on both climate and human rights in their supply chains. **Volvo is the stand-out steel and aluminum leader** and overall on fossil-free and environmentally sustainable supply chains – but disappointingly came out lower on human rights, including insufficient attention to workers rights and no reference to Indigenous Rights at all.

But it isn't just higher-end brands leading: **Ford shows affordable automakers can do it too, ranking top on transition minerals and worker rights.** Since their last annual reporting cycle, Ford have also made initial announcements on fossil free and environmentally sustainable plans too, looking into "low-" and "zero-carbon" steel in Europe and partnering with Rio Tinto on "battery and low-carbon materials. **VW, while not a standout, deserves an honorable mention** as a top 2 global auto with important targets and policies overall, but has not shared or demonstrated as many specifics as those automakers above.

Figures 2 & 3: Highlights of auto supply chains leaders



Auto laggards: But, we have some problems – a lot of problems

Toyota, the former green darling now biggest EV laggard, is way behind on their supply chain too. Toyota's supply chain targets and claims seem token at best and as the lowest ranked automaker for their climate lobbying record by [InfluenceMap](#), they get dragged down even more. Toyota needs to not just radically revamp its EV plans—and we'll see what comes of their imminent leadership changes—but realize it'll take much more than restoring pollinator habitat to claim they're leading the charge in any real way – or even claim a place in the race at all.

Tesla, the original and still EV leader, has some problems piling up. They already have new competitors snapping at their heels, a fluctuating stock price, investor discontent, and SEC and worker rights investigations – but they also have significant gaps in disclosure and action on fossil free and environmentally sustainable supply chains. They have been making progress on batteries and responsible sourcing—including being one of the few automakers to give even a nod to Indigenous rights—but with their mission to *Accelerat[e] the World's Transition to Sustainable Energy*, fossil-free supply chains are a significant opportunity for Tesla to lead all over again – and their Investor Day “sustainable energy economy” presentation showcased a vision for just that. Imagine Cybertrucks made of fossil-free steel, Tesla Semis made with nearly all-recycled aluminum, and batteries with minerals sourced to the highest standard and with rights-holders respected? Sadly, Tesla is far away from fulfilling this potential

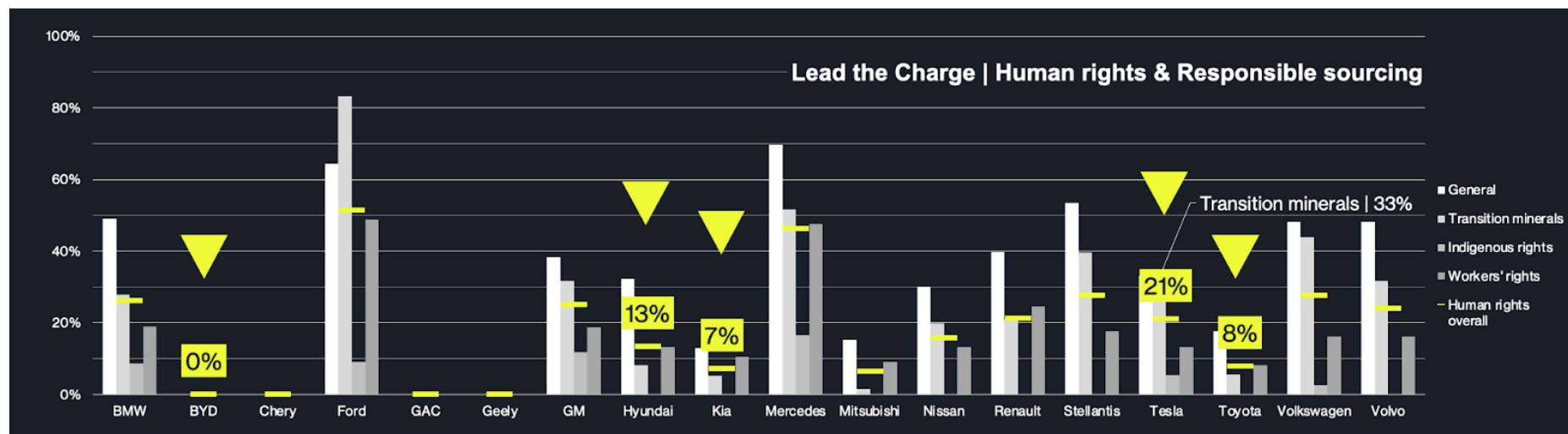
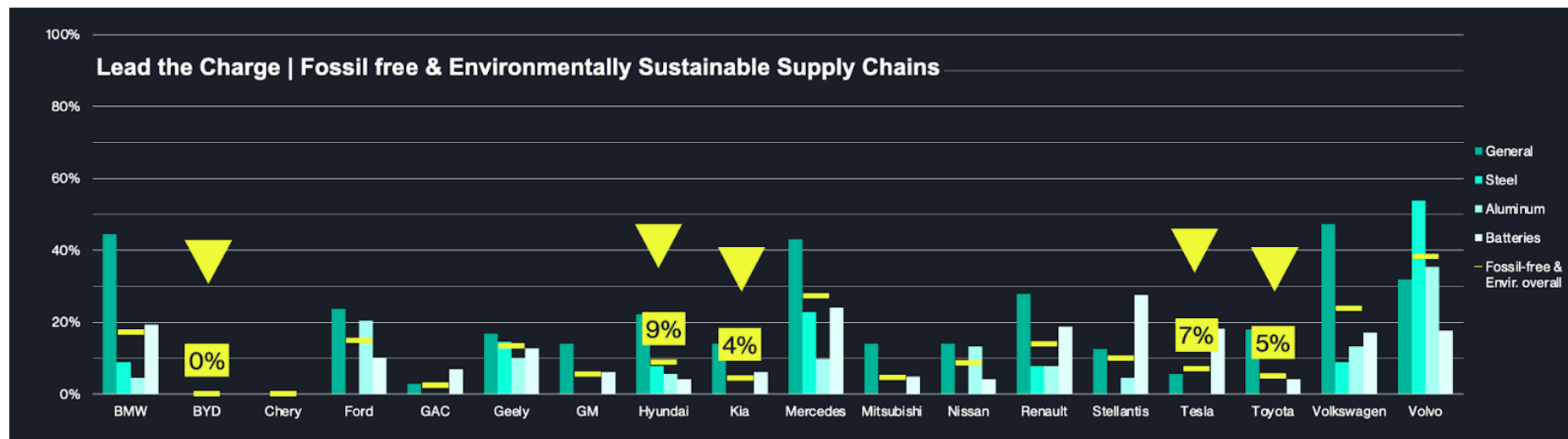
Tesla's main rapidly growing rival, **Warren Buffet-backed BYD and #2 EV maker, despite their vertical integration, is also far behind.** With their extensive overseas market ambitions, BYD is quickly grabbing market share but the further BYD reaches, the more they will be exposed to new regulations and expectations, particularly in Europe. BYD may be on a relentless rise but sustaining it without investing in their supply chain risks undercutting their ambitions.

Hyundai-Kia, now the third-largest automaker in the world and snapping up EV market share, makes sustainable material claims but misses the bigger picture – and opportunity. Unfortunately, despite slightly outperforming EV leader Tesla in some areas, Hyundai-Kia are trailing overall and have a host of supply chain issues bubbling up, including child labor at suppliers and a subsidiary in the US, and air pollution from steel manufacturing in Korea. Steel pollution isn't just a problem in their supply chain but one of their own: Hyundai Motor Group is a family-run industrial conglomerate that acquires a lot of their steel from their own subsidiary, Hyundai Steel. They have made some initial investments in green steel, but if Hyundai-Kia wants their sustainable material claims to start having an outsized impact, they only need to look inwards and then next door to major Korean partners like POSCO, and battery manufacturers LG and SK.

Lack of disclosure from Chinese automakers meant they scored very low overall – but **Geely shows a glimmer of what could be** on fossil-free and environmentally sustainable supply chains. They are the leader amongst East Asian automakers on fossil free and environmentally responsible supply chains (which this [Chinese study also found – and ranked BYD last](#)) and even rank higher than several European and US automakers, particularly on steel. With the Zhejiang Geely Holding Group also having major stakes in automakers already leading the charge—Polestar, Volvo, and Mercedes—could they overtake the incumbents and become the new multi-brand group leading the charge? This may be a space to watch.

Lastly, while there is some movement by incumbents, like Mercedes and GM, and EV leader Tesla, **automakers across the board are falling far short on Indigenous Rights.** With a new era of industrial expansion underway, respecting Indigenous Peoples’ self-determination and right to [Free, Prior, and Informed Consent](#) is more important than ever given how many [transition minerals are located on or near Indigenous Peoples’ lands](#). Like we said before, batteries aren’t the problem, poor business-as-usual practices are – so let’s take the opportunity of this unprecedented transformation to not repeat history and do it right this time.

Figures 4 & 5: Highlights of auto supply chain laggard scores



It's time for automakers to Lead the Charge

The promise of our clean electrified future needs to be clean end-to-end, from mine to manufacturing – and as shown by the numerous efforts already underway and growth of supply chain collaborations and multi-stakeholder initiatives, many automakers know it and aren't wasting any time. If we're to make an auto industry that is equitable, sustainable, and fossil-free, automakers can and must lead the charge by taking action in four key ways:

- **Commit to and enforce credible targets and policies** | Commit to and enforce robust targets, policies and remediation mechanisms to eliminate fossil fuels, environmental harms and human rights violations across your business operations and supply chains to the point of extraction, prioritizing steel, aluminum, and batteries. These must be in line with a credible 1.5C pathway including near-term targets no later than 2030, as well as international environmental and human rights standards, and have comprehensive roll-out plans.
- **Disclose your progress and supply chain risks and impacts** | Disclose, on a minimum annual basis, your progress towards these targets, as well as your supply chains and their climate, environmental, and human rights risks and impacts, and the measures taken to identify, mitigate and remedy them.
- **Leverage your influence to shift global supply chains** | Leverage your influence and purchasing power to accelerate the just transition to fossil-free and environmentally sustainable global supply chains - from manufacturing to mining. This includes by signing advance purchase agreements with suppliers; investing in recycling and efficient resource use; holding suppliers to contractually binding standards governing human rights due diligence, Free, Prior and Informed consent of Indigenous Peoples, environmental management, and workers' rights; and developing effective supply chain grievance and remedy mechanisms.
- **Partner with supply chain stakeholders to advance a just transition** | Proactively engage and partner with supply chain rights-holders — including local communities, workers, Indigenous Peoples, and their elected representatives — civil society, multi-stakeholder initiatives including certifications, and governments to advance a just transition by advocating for stronger standards, policies, legislation and transparency across the auto industry and its supply chain.

The EV transition is inevitable and the next stage of the race is already on!

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