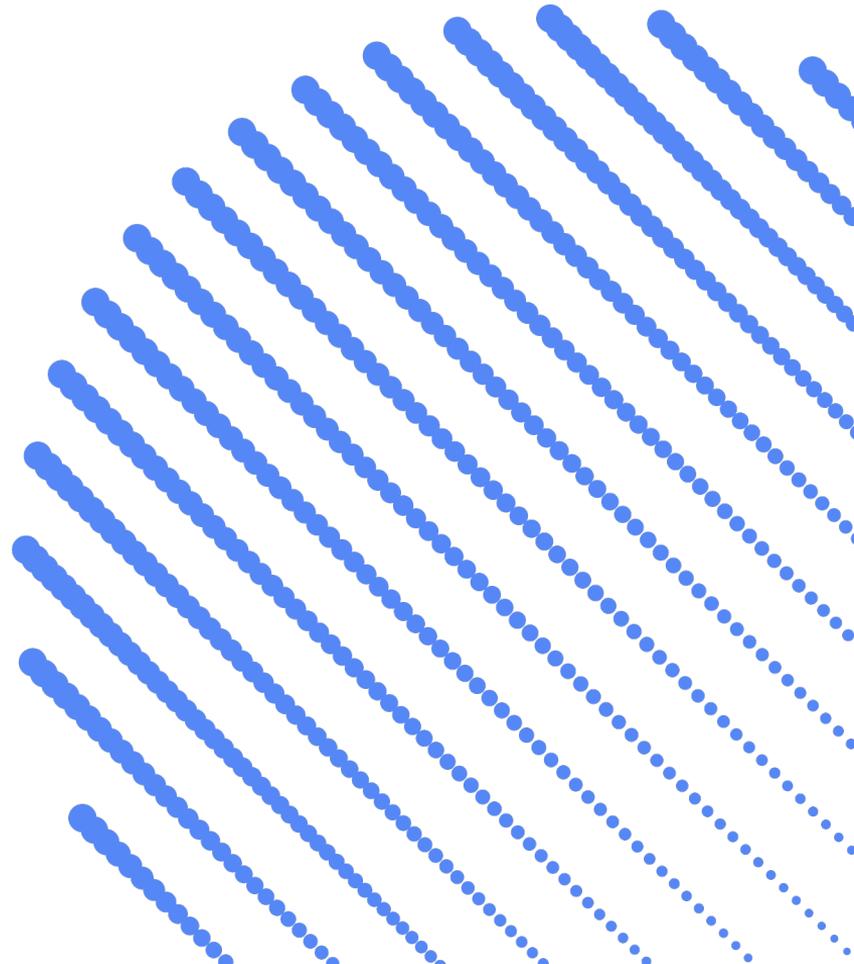


Transition  
Pathway  
Initiative

# Management Quality and Carbon Performance of Transport Companies: December 2020

Simon Dietz, Beata Bienkowska, Rhoda Byrne, Nikolaus Hastreiter, Valentin Jahn, Vitaliy Komar, Michal Nachmany, Antonina Scheer and Rory Sullivan



# Research Funding Partners



We would like to thank our Research Funding Partners for their ongoing support of TPI and their enabling the research behind this report and its publication

# About TPI and this report

TPI is a global initiative led by Asset Owners and supported by Asset Managers. Established in January 2017, TPI now has 90 supporters with nearly \$23 trillion of combined Assets Under Management and Advice.\*

Using publicly disclosed data, TPI assesses the progress that companies are making on the transition to a low-carbon economy, supporting efforts to mitigate climate change:

- In line with the recommendations of TCFD;
- Providing data for the Climate Action 100+ initiative.

All TPI data are published via an open-access online tool:  
[www.transitionpathwayinitiative.org](http://www.transitionpathwayinitiative.org).

This slide set presents our latest assessment of the transport sector, including airlines, automobile manufacturers and international shipping.

\*November 2020



# Investor perspective

- Effective action on climate change is a demand-side issue, not just a supply side issue. If we are to significantly reduce global greenhouse gas emissions, we need to reduce our demand for fossil fuels. The transport sector – which accounts for approximately a quarter of global energy-related CO2 emissions – is clearly central to these reduction efforts.
- As we start to emerge from the coronavirus pandemic, we are seeing radical changes in the landscape of transport. In the airline sector, the state has not only ended up providing significant financial support but has also made that support conditional on the sector accelerating its moves towards the low carbon transition. Patterns of work appear to have been permanently disrupted, with increasing numbers of homeworkers and with companies considering whether they should significantly reduce business travel. In the UK, the government has pledged to end the sale of petrol and diesel cars and vans by 2030, 10 years ahead of its previous schedule.
- Despite these changes, the transport – automobiles, aviation, shipping – sector has not yet woken up to these new realities. This report tells us that many of the most significant companies in the sector do not even align with the goals set by countries under the Paris Agreement on Climate Change. In fact, only 39% of transport companies aligned with the Paris/International Pledges in 2030, and just 18% align with a more ambitious well below 2°C benchmark in 2030.
- From an investment perspective, it is clear that the transport sector has a massive exposure to the risks of the low carbon transition, and a significant risk that many of its assets – vehicles, factories, infrastructure – will be stranded. It is also clear that there are huge opportunities in low carbon transport and that governments are willing to invest to support this transition. It is our role as investors to ensure that companies are not just aware of but act decisively and promptly to address these risks and to take advantage of these opportunities.

Faith Ward & Adam Matthews  
Co-Chairs of TPI

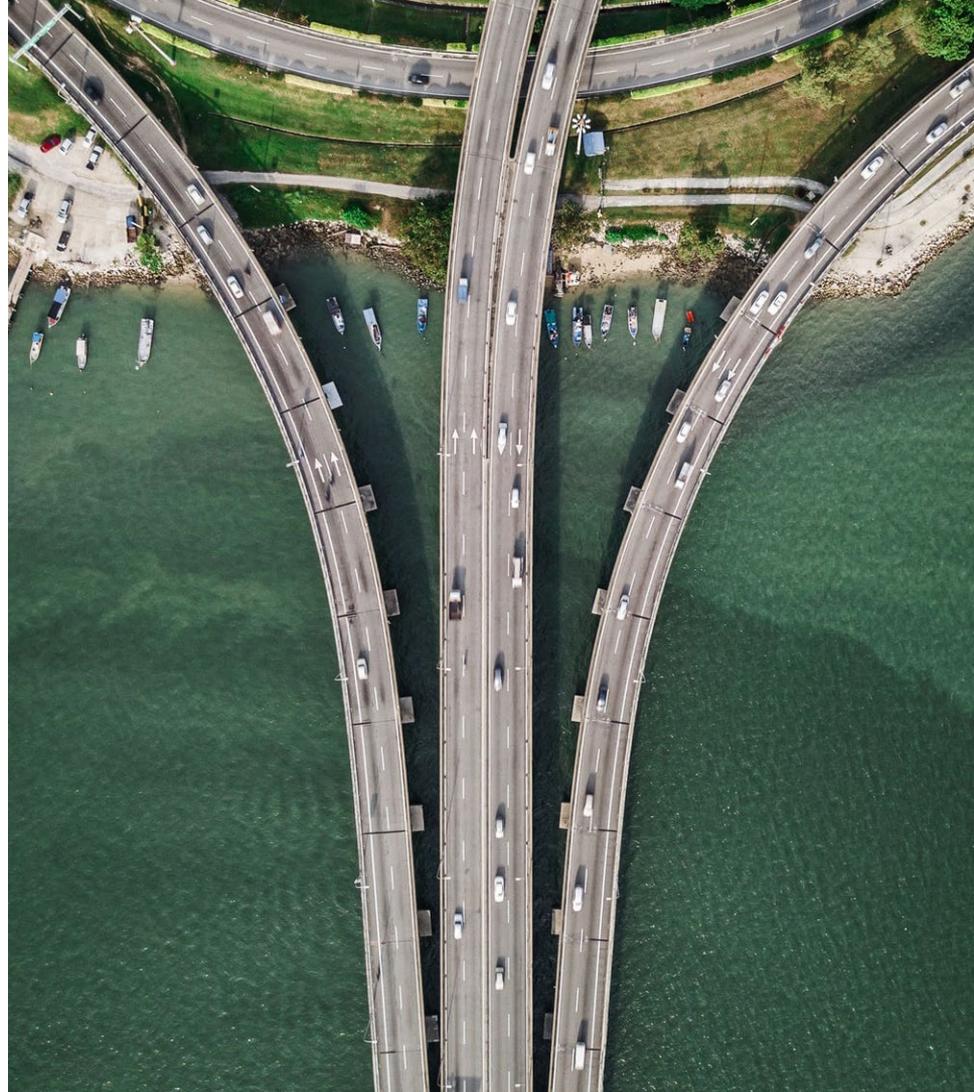


## Key messages

- This is TPI's latest assessment of the transport sector, comprising 62 airlines, automobile manufacturers and international freight shipping companies.
- The sector's **Management Quality shows little change on last year.** Shipping performs poorly, airlines and autos fairly well. BMW is the only 4\* transport company. Failure to repeatedly disclose membership and involvement in trade associations engaged in climate lobbying has caused some companies to fall back from Level 4 to 3.
- The sector's **Carbon Performance has improved modestly, with 39% of companies now aligned with at least the Paris/International Pledges.** Automobile manufacturers are more likely to align in 2050 than in 2030, implying efforts to decarbonise are being back-loaded. The opposite is true of shipping; some companies align on the basis of their current relatively low emissions intensity, but have not targeted further reductions in the long term.
- **The Carbon Performance of airlines remains poor, with dependence on net targets/offsetting remaining a key issue,** but United Airlines' recently disclosed 50% gross emissions reduction target for 2050 could point the way forward. Assuming no reliance on offsetting, United is aligned with our most ambitious 2°C (high efficiency) benchmark.
- **The severe drop in transport activity due to Covid-19 could lead to lasting changes in the sector.** Targeted public policies and other factors such as videoconferencing could lead to an accelerated modal shift towards less carbon-intensive forms of transportation. Further sources of systemic risk for airlines in particular include frequent flyer levies proposed to address the unequal demand-side responsibility for air travel emissions.

# Contents

1. The state of transition in transport:  
overview of results
2. Sector focus: automobiles
3. Sector focus: airlines
4. Sector focus: shipping
5. About TPI: further information about the  
initiative and methodology



# The state of transition in transport: overview of results

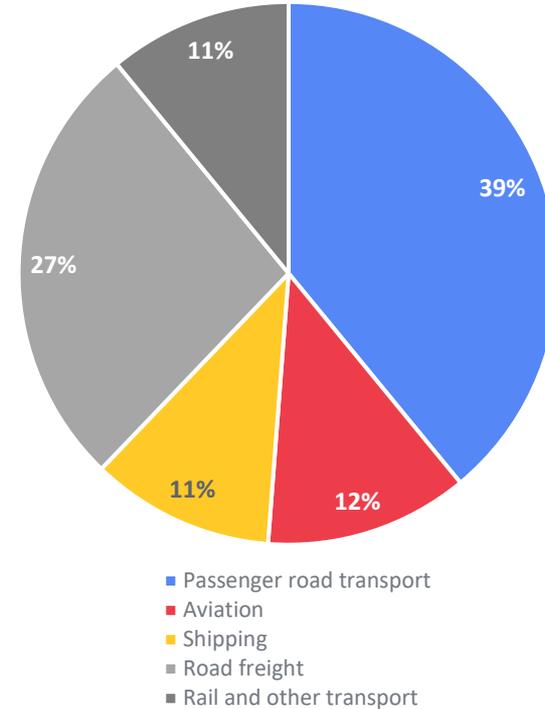


## Transport direct emissions by mode

Our assessment covers three subsectors within transport: automobile manufacturing, aviation and international freight shipping. Together, the fuel-combustion emissions from these three sectors represent around two thirds of direct transport emissions (see chart opposite).\* Overall, direct emissions from the transport sector currently account for nearly one quarter of total energy-related CO<sub>2</sub> emissions worldwide.

\*Our assessment of shipping focuses on international freight shipping, which represents around 87% of the total shipping emissions shown opposite, with the balance arising from domestic freight transport and sea passenger transport, including cruise-ships. As in previous years, our assessment of automobile manufacturing focuses on passenger cars.

Transport energy emissions in 2019



Source: IEA's Energy Technologies Perspectives, 2020

## TPI coverage in transport

We now cover the world's 62 largest public companies by free-float market capitalisation in three transport sectors: airlines, autos and international shipping.

We last assessed the transport sector in December 2019, covering 57 companies. This year we add one company in autos (BYD), one company in airlines (Air Canada) and three companies in shipping (China Merchants Energy Shipping, Ino Kaiun Kaisha, and NS United Kaiun Kaisha).

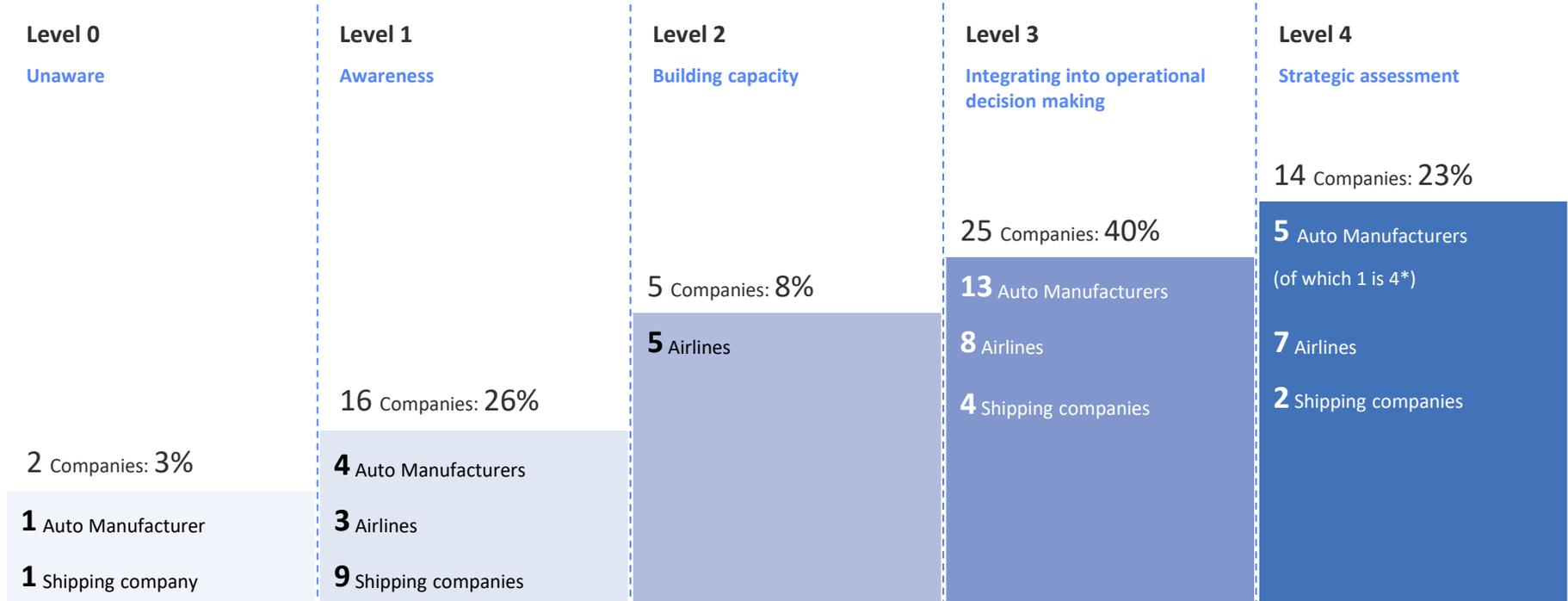
All transport sectors covered in this report were also covered last year, allowing us to track companies' progress over time.

We provide a Carbon Performance assessment of all 62 companies.

Sector	Companies assessed on Management Quality and Carbon Performance
<b>Autos</b>	23
<b>Airlines</b>	23
<b>Shipping</b>	16
<b>Total</b>	<b>62</b>

# Management Quality level

Companies' Management Quality ratings may not always reflect their most up-to-date disclosures. TPI updates its assessments once a year.



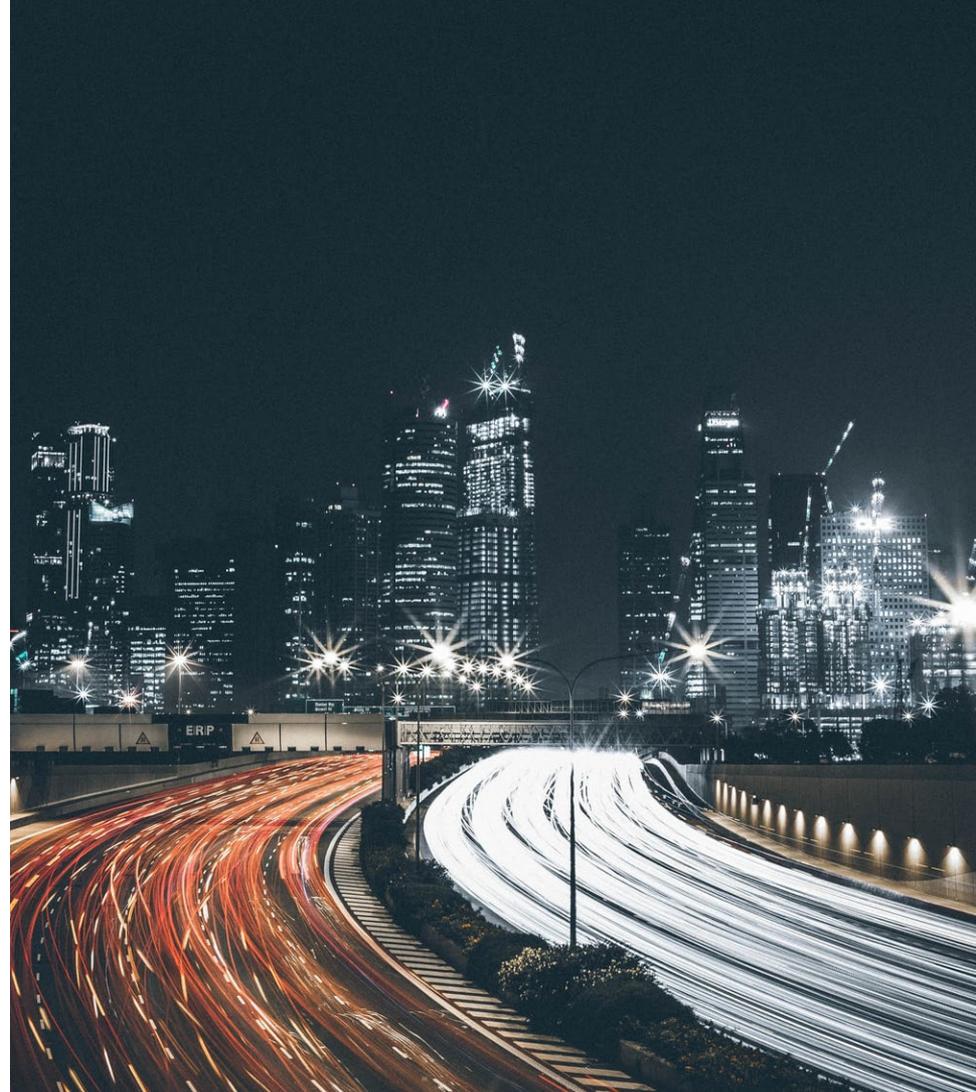
# Management Quality level

Transport companies' average Management Quality score is now 2.5, down 0.1 points on last year. The slight decline can be attributed to the new companies, four out of five of which are on Level 1. The average score of the companies that were also assessed last year is 2.6, which is unchanged.

Although 63% of companies are on Levels 3 or 4, the sector as a whole is making imperceptible progress towards integrating climate change into operational decision making and strategic assessment of the issue.

Within the sector, airlines and auto manufactures' average score is very similar, at 2.8 and 2.7 respectively. Shipping is now the worst performing sector in the TPI database with an average of 1.8 – a decrease of 0.1 from last year due to the addition of three new, Level 1 companies.

There is only one 4\* company in the transport sector, meaning it satisfies all applicable indicators: BMW.

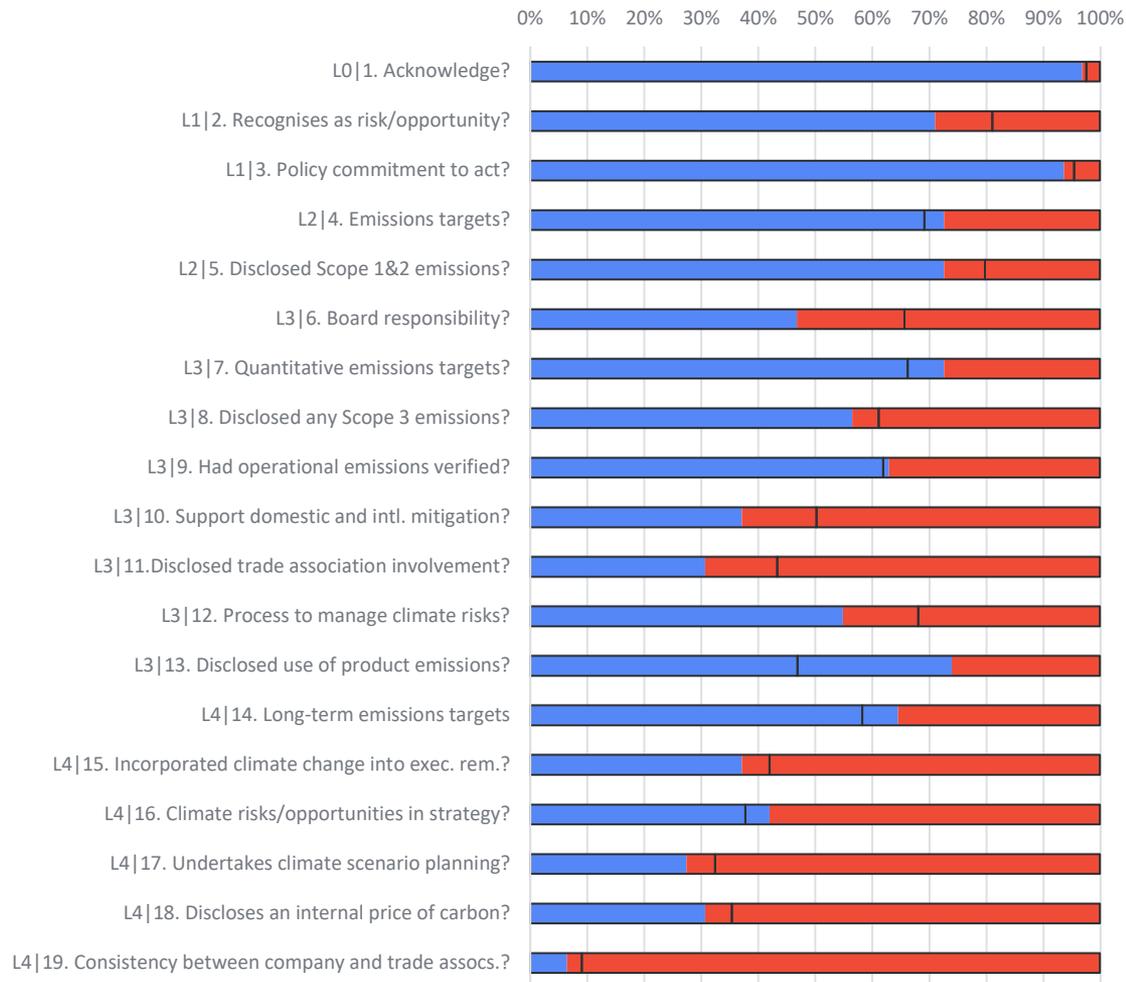


# Management Quality: indicator by indicator

The transport sector performs well on the basic Management Quality indicators and less well on the more advanced indicators. We observe this pattern across all TPI sectors.

The transport sector performs notably worse than the TPI universe on assigning boardroom responsibility for climate change (Q6), supporting domestic and international efforts to mitigate climate change (Q10), and disclosing involvement in trade associations engaged on climate issues (Q11).

On the other hand, it performs notably better on disclosing Scope 3 use of sold product emissions (Q13), an indicator that is only applicable to auto manufacturers within the sector. Auto manufacturers operate in a number of jurisdictions where fuel efficiency and CO<sub>2</sub> emissions are tightly regulated.

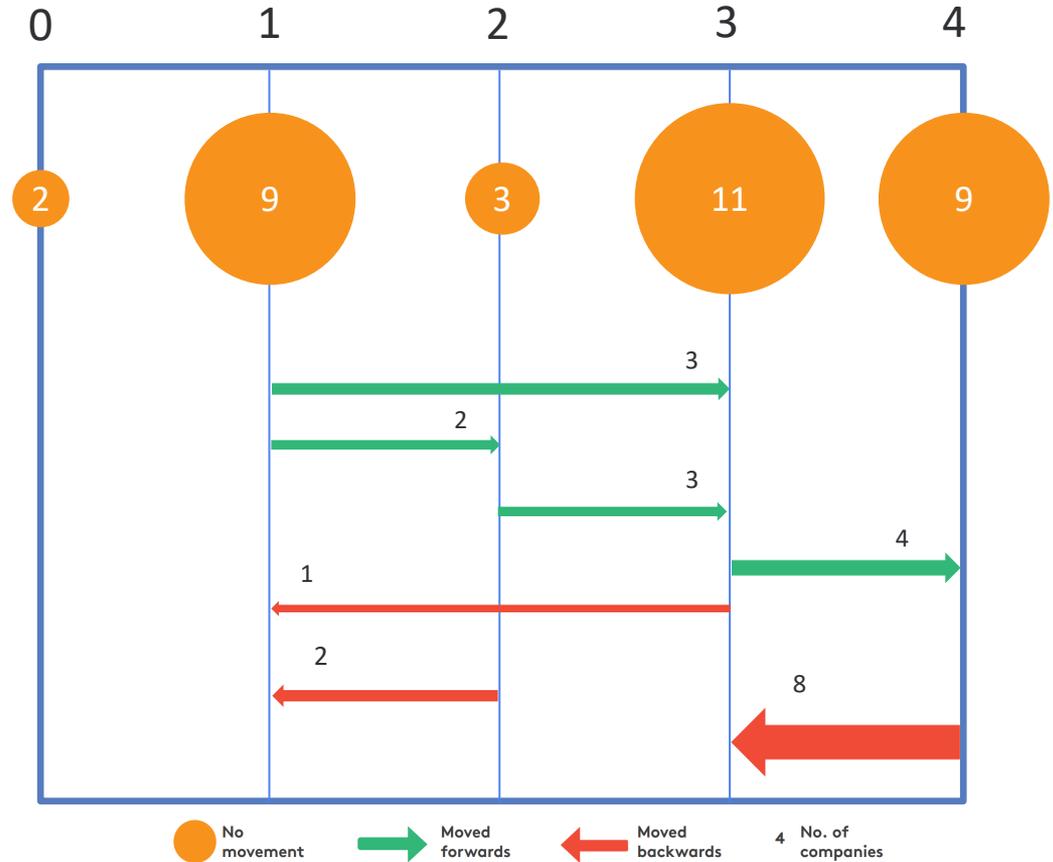


# Trends in Management Quality

We have trend data on 57 transport companies. Thirty four companies (60%) stay on the same level as they occupied last year. Nine of those stay on the highest Level 4.

Twelve companies (21%) have moved up at least one level. Four of these companies have moved up from Level 3 to 4. A number of these companies have nominated a board member or committee with explicit responsibility for oversight of the company's climate change policy.

Eleven companies (19%) have moved down at least one level. Eight companies have moved down from Level 4 to 3. The single biggest explanatory factor is a failure to continue disclosing involvement in trade associations that are active in climate lobbying.

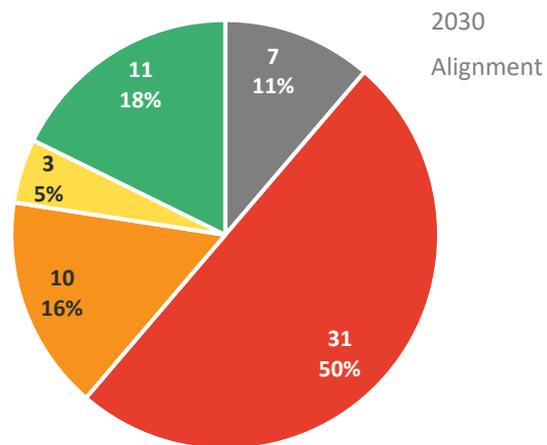
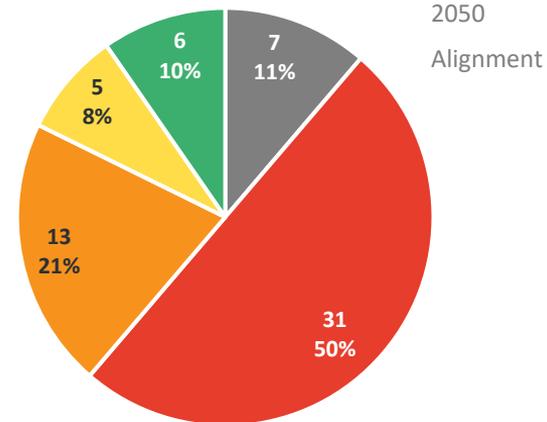


# Carbon Performance: alignment with the Paris Agreement benchmarks

Thirty nine percent of transport companies are aligned with at least the Paris/International Pledges in 2030, an improvement of four percentage points on last year. Eighteen percent of companies are aligned with the most ambitious Below 2°C/2°C (High Efficiency) benchmark in 2030.

This year we take a longer time horizon, comparing companies with 2050 benchmarks too. The 2050 benchmarks are tighter – companies' carbon intensities need to be lower. This explains why fewer companies are aligned with the 2°C and Below 2°C/2°C (High Efficiency) benchmarks in 2050 than in 2030.

Comparing the alignment of transport companies with energy companies\*, we find alignment with the Paris/International Pledges is similar, as is the percentage of non-aligned companies. What differentiates these sectors is a higher share of companies aligned with the most ambitious Below 2°C benchmark in energy, led by electricity utilities.



- No or unsuitable disclosure
- Not aligned
- Paris/International pledges
- 2 Degrees + 2 Degrees (shift+improve)
- Below 2 Degrees + 2 Degrees (high efficiency)

\* See our recent report, Management Quality and Carbon Performance of Energy Companies: September 2020 Update.

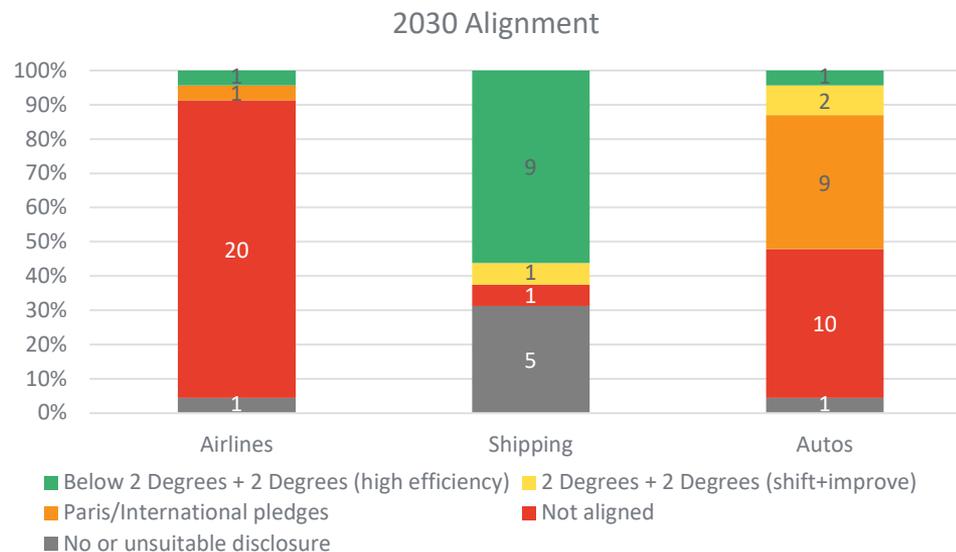


# Carbon Performance: sector breakdown

Breaking the Carbon Performance data down by sector, alignment is highest in shipping, followed by autos, with the lowest degree of alignment in airlines. Airlines have the worst Carbon Performance of any TPI sector. TPI does not accept net targets in the airlines sector that include indeterminate reliance on offsets, which is a principal explanation for this.

More than half of shipping companies are aligned with Below 2°C in 2030 and they achieve this largely by virtue of their current carbon intensity, which is well below the sector average. Larger shipping companies tend to operate bigger, more efficient vessels. However, the share of shipping companies that are aligned with Below 2°C in 2050 is only 12%: more ambitious long-term targets are required.

In the autos sector, we see the opposite. Alignment with 2°C (Shift-Improve) and 2°C (High Efficiency) is higher when judged against 2050 than 2030, implying that companies are back-loading their efforts to align with the Paris goals.



# The potential impact of Covid-19 on passenger transport

Covid-19 has had far-reaching consequences for global transportation. Road transport volumes were almost 50% below the 2019 average at the end of March 2020, when most countries had gone into a first lockdown. Similarly, commercial flight volumes were almost 75% lower in mid-April 2020 than in 2019.<sup>1</sup> Looking forward, IATA forecasts that it will take until 2024 for air traffic to reach pre-Covid levels.<sup>2</sup>

Following the sharp decline in air traffic volumes, some governments have integrated environmental requirements into the bailouts offered to airlines. The French and Dutch governments included environmental targets for Air France-KLM, e.g. a 50% reduction in CO<sub>2</sub> emissions from domestic flights by 2024 for Air France (no base year disclosed).<sup>3</sup> Most other rescue packages, such as those offered by the American and German governments to American Airlines and Lufthansa respectively, were not tied to any environmental commitments.

We are yet to see the effect of Covid-19 on TPI data. Our assessments draw on public disclosures and 2020 disclosures typically include emissions data from 2019 and before. Some companies have stated publicly that the ongoing pandemic might affect their future emissions performance. For example, the airline Azul has put its 2024 emissions target under review. One advantage of using emissions intensity data is that they are to some extent less volatile – emissions and activity fall in tandem.

The severe drop in transportation due to Covid-19 might lead to lasting changes in the sector. In combination with targeted public policies and other accompanying factors, this could lead to an accelerated modal shift towards less carbon-intensive transport means.<sup>1</sup>

<sup>1</sup> IEA (2020) 'Changes in transport behaviour during the Covid-19 crisis'

<sup>2</sup> IATA (2020) 'Recovery Delayed as International Travel Remains Locked Down'

<sup>3</sup> Environmental advocacy groups criticised the climate conditions for Air France heavily for not being legally binding and covering only a limited scope of total CO<sub>2</sub>e emissions. The bailout agreement for KLM has not yet been signed (as of 05/11/2020).



# Total life-cycle emissions in the transport sectors

As the transport sector gradually shifts to alternative, low-carbon fuels, there is a case for broadening disclosure to include both positive and negative upstream emissions.

TPI assessments are currently based on Tank-to-wheel (TTW) as opposed to Well-to-wheel (WTW) emissions. TTW emissions are generated during the use phase of fuel, but upstream emissions resulting from e.g. production of the fuel are excluded. As low-carbon scenarios embody changes to the fuel mix and technological advances, both of which could shift the ratio of WTW/TTW emissions, investors may want to consider total life-cycle emissions in transport.

Car manufacturers and their regulators commonly report TTW fleet emissions intensity. Both treat electric vehicles (EVs) as zero-emissions. However, the electricity grids charging EVs are typically not yet carbon-

free. Moreover, most EV battery manufacturing results in CO<sub>2</sub> emissions, as it relies at least in part on fossil-based electricity.

For airlines and shipping companies, the primary upstream emissions are associated with the production of biofuels and synthetic fuels. Companies with emissions targets often plan to increase their use of these alternative fuels, with the assumption that biofuels in particular are carbon-neutral – i.e. the carbon absorbed by plants used to produce biofuel is assumed to offset the combustion emissions. However, the upstream emissions associated with biofuels are potentially significant and differ depending on feedstock and production methods. Currently, airlines and shipping companies tend to only report their TTW emissions, limiting TPI's ability to expand the scope of our analysis to include these upstream emissions at this time.

# Key low-carbon transport technologies

IEA's ETP Clean Energy Technology Guide<sup>1</sup> identifies the most important emerging (i.e. currently immature) technologies that will be critical to reduce transport sector emissions in the future.

Green = very high importance in reaching net zero;  
Orange = high importance

Technology	Lithium-sulphur battery 	Solid state battery 	Open rotor jet engine 	Ultra-high bypass ratio engine 	Solid oxide fuel cells 
Pros	High energy density Light Inexpensive	Long battery life Fast charging	Engine efficiency (approx. 28% fuel savings)	Engine efficiency (approx. 25-28% fuel savings)	Efficiency (approx. 60% fuel savings) Low sensitivity to impurities
Cons	Short lifetime	High flammability Risk of leakage	Noise Low speed	Reduced reliability High weight	Expensive Moderate lifetime
Development stage	Early prototype	Large prototype	Early prototype	Early adoption	Pre-commercial demonstration
Companies involved	Oxis Energy Poly Plus Sion Power	Toyota plan to showcase an SSB vehicle during the Tokyo Olympics	Technology read by 2030, according to Safran	Pratt & Whitney Safran Rolls Royce	Thyssenkrupp Sunfire Bloom Energy Samsung Heavy Industries



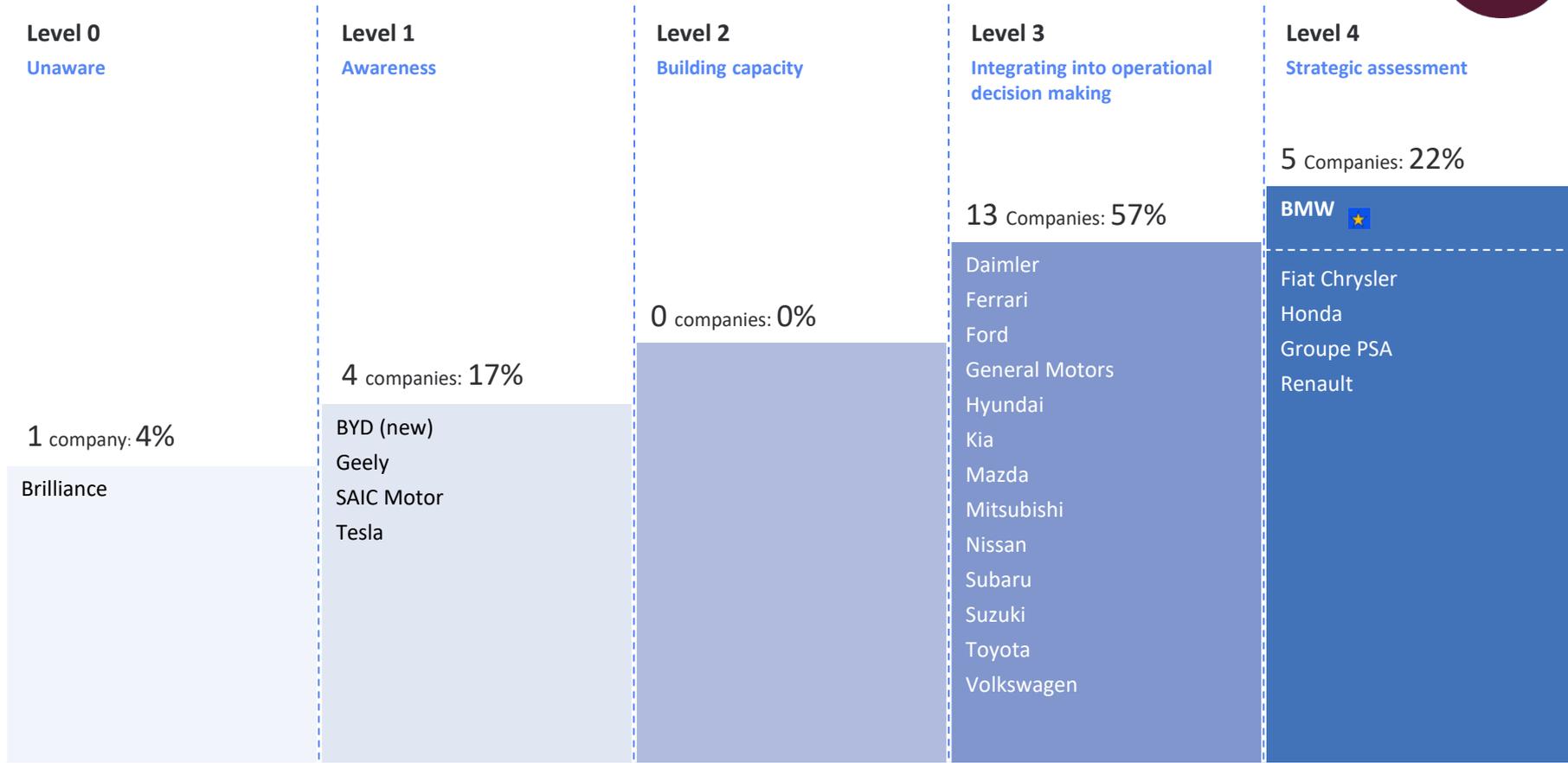
<sup>1</sup><https://www.iea.org/articles/etp-clean-energy-technology-guide>

# Sector focus: auto manufacturing



# Management Quality level

Companies' Management Quality ratings may not always reflect their most up-to-date disclosures. TPI updates its assessments once a year.

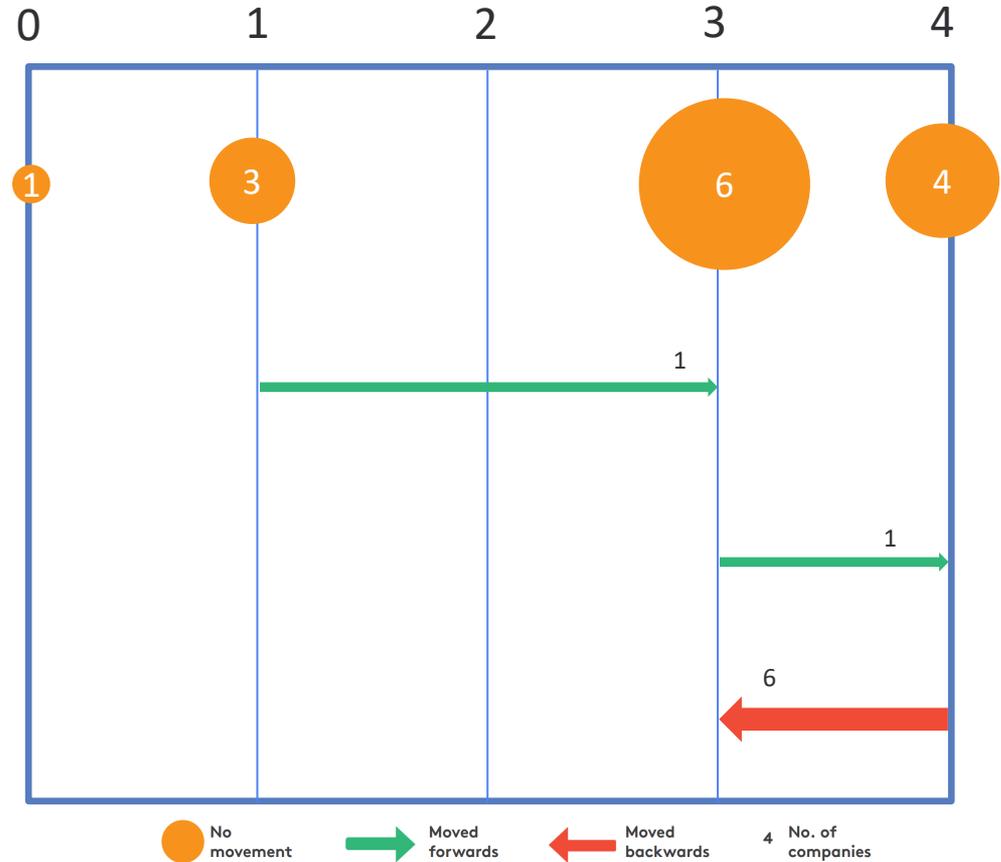


# Trends in Management Quality

Car manufacturers' average Management Quality score has decreased from 3 in 2019 to 2.7 this year. It remains a comparatively high-performing sector though, with 78% of companies on Levels 3 or 4.

Most companies (14) stay on the same level as last year. Suzuki has moved up from Level 1 to 3 and Renault from 3 to 4. In addition, BMW has become the first 4\* company in the autos sector.

Six companies have moved down from Level 4 to 3. While a combination of factors has led to these downwards movements, it stands out that four of these companies have failed to disclose their membership and involvement in trade associations engaged in climate lobbying this year.



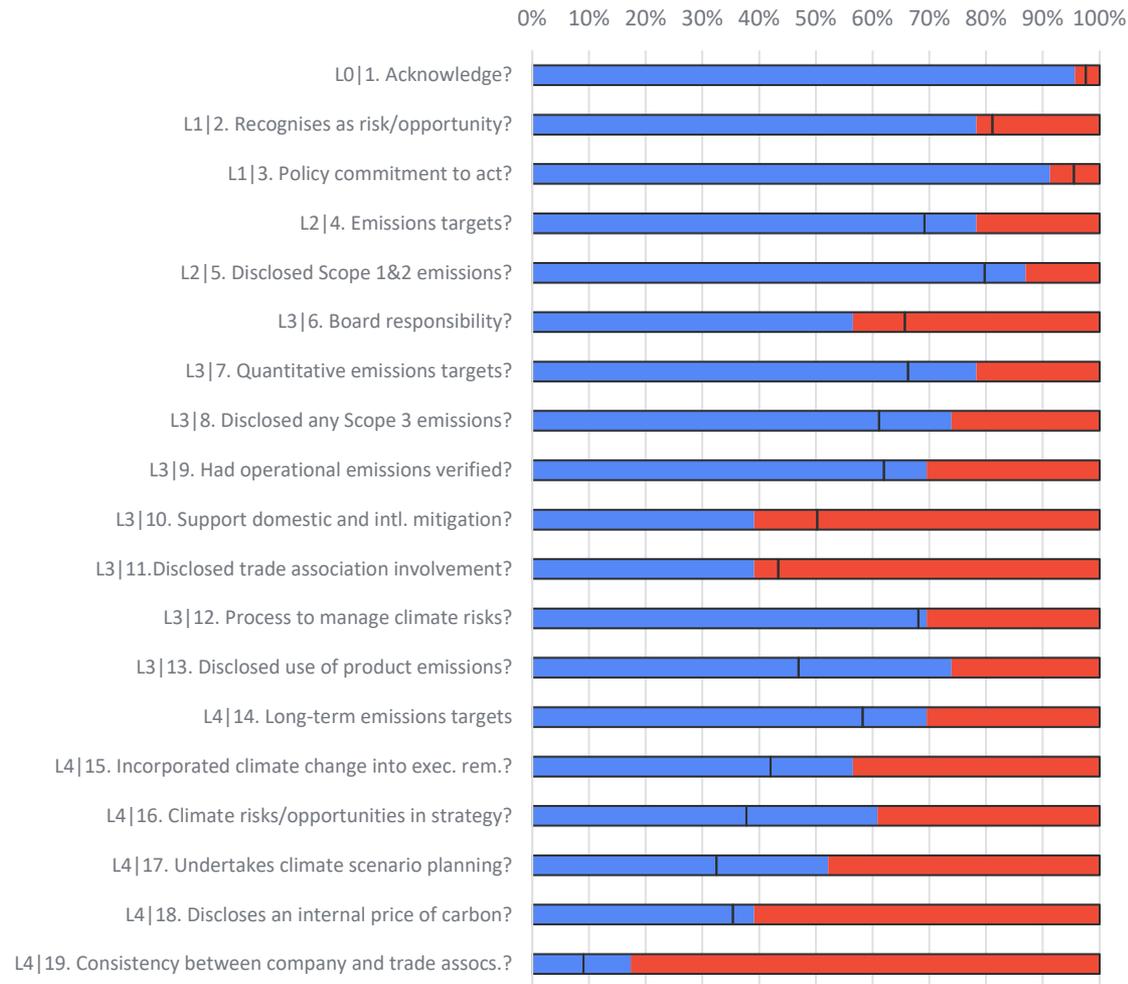
# Management Quality: indicator by indicator

Autos perform better than the TPI average on a range of indicators, especially on Level 4 indicators (Q14-19). More than half of the sector has:

- set a long-term emissions target;
- incorporated climate-change performance in executive remuneration;
- integrated climate risks and opportunities into strategy;
- undertaken climate scenario planning.

However, the sector is below the TPI average on some indicators, notably board responsibility for climate change, and demonstrating support for domestic and international efforts to mitigate climate change.

Brilliance remains the only Level 0 automobile company.



Key: blue = yes, red = no, black tick mark = TPI universe average

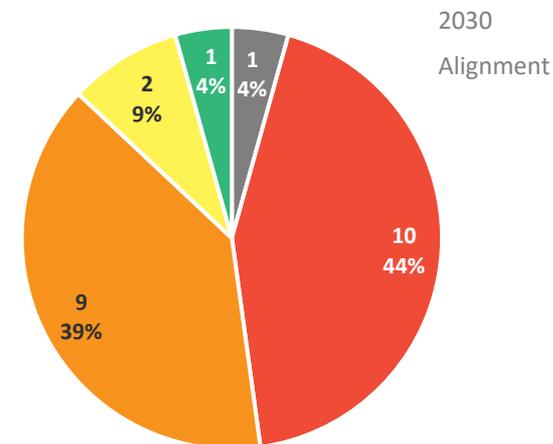
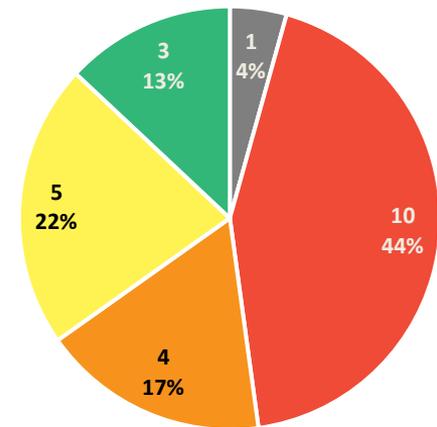


## Carbon Performance: alignment with the Paris Agreement benchmarks

The number of companies aligned with at least the Paris Pledges in 2030 has increased to 12 (52%) from nine (41%) last year. Suzuki is now aligned with the 2°C (Shift-Improve) scenario, and BMW and Honda with the Paris Pledges. Daimler's recently published 2030 target aligns the company with the Paris Pledges. BYD is already aligned with 2°C (Shift-Improve), based on its 2018 fleet emissions intensity. Tesla and BYD are the sector's leaders on Carbon Performance, despite both being Level 1 companies on Management Quality.

Judged against the benchmarks in 2050, more companies are aligned with the 2°C scenarios. This implies that many companies aim to improve their Carbon Performance significantly in the years after 2030. Companies' full transition pathways are plotted on TPI's online tool.

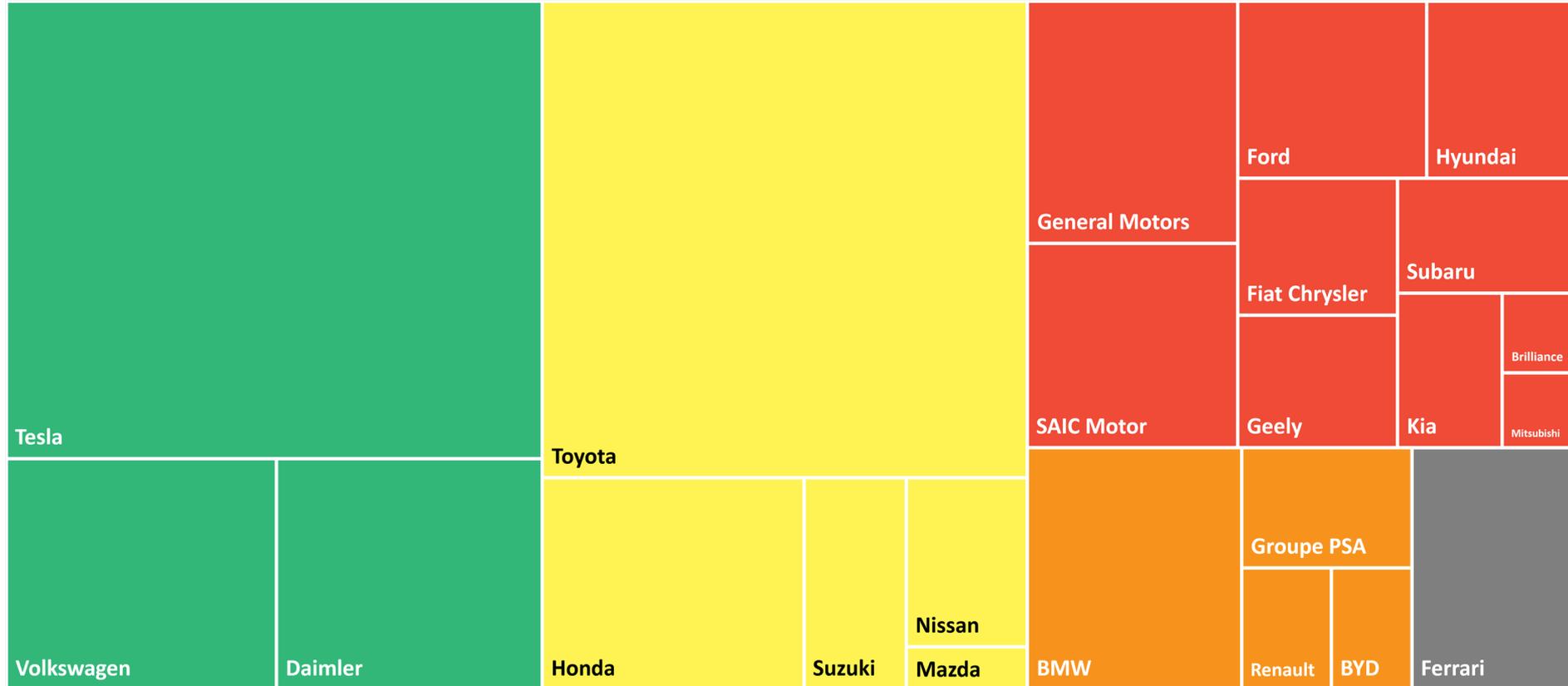
TPI's assessments in this sector are based on emissions intensity measured according to the New European Driving Cycle (NEDC). As the NEDC has been replaced by the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) in the EU and other countries, future TPI assessments are likely to shift to WLTP.



- No or Unsuitable Disclosure
- Paris Pledges
- 2 Degrees (High Efficiency)
- Not Aligned
- 2 Degrees (Shift - Improve)



# Alignment of auto manufacturers, scaled by market cap.



■ 2 Degrees (High Efficiency) 
 ■ 2 Degrees (Shift - Improve) 
 ■ No or Unsuitable Disclosure 
 ■ Not Aligned 
 ■ Paris Pledges



# Sector focus: airlines



# Management Quality level

Companies' Management Quality ratings may not always reflect their most up-to-date disclosures. TPI updates its assessments once a year.

**Level 0**  
Unaware

0 Companies: 0%

**Level 1**  
Awareness

3 Companies: 13%

Air China  
China Southern  
Korean Air

**Level 2**  
Building capacity

5 Companies: 22%

Azul  
Easyjet  
IndiGo  
Singapore Airlines  
Wizz Air

**Level 3**  
Integrating into operational  
decision making

8 Companies: 35%

Alaska Air  
American Airlines  
ANA Group  
Lufthansa  
IAG  
Japan Airlines  
LATAM  
Turkish Airlines

**Level 4**  
Strategic assessment

7 Companies: 30%

Air Canada (new)  
Air France KLM  
Delta Air Lines  
Jetblue  
Qantas  
Southwest  
United Continental

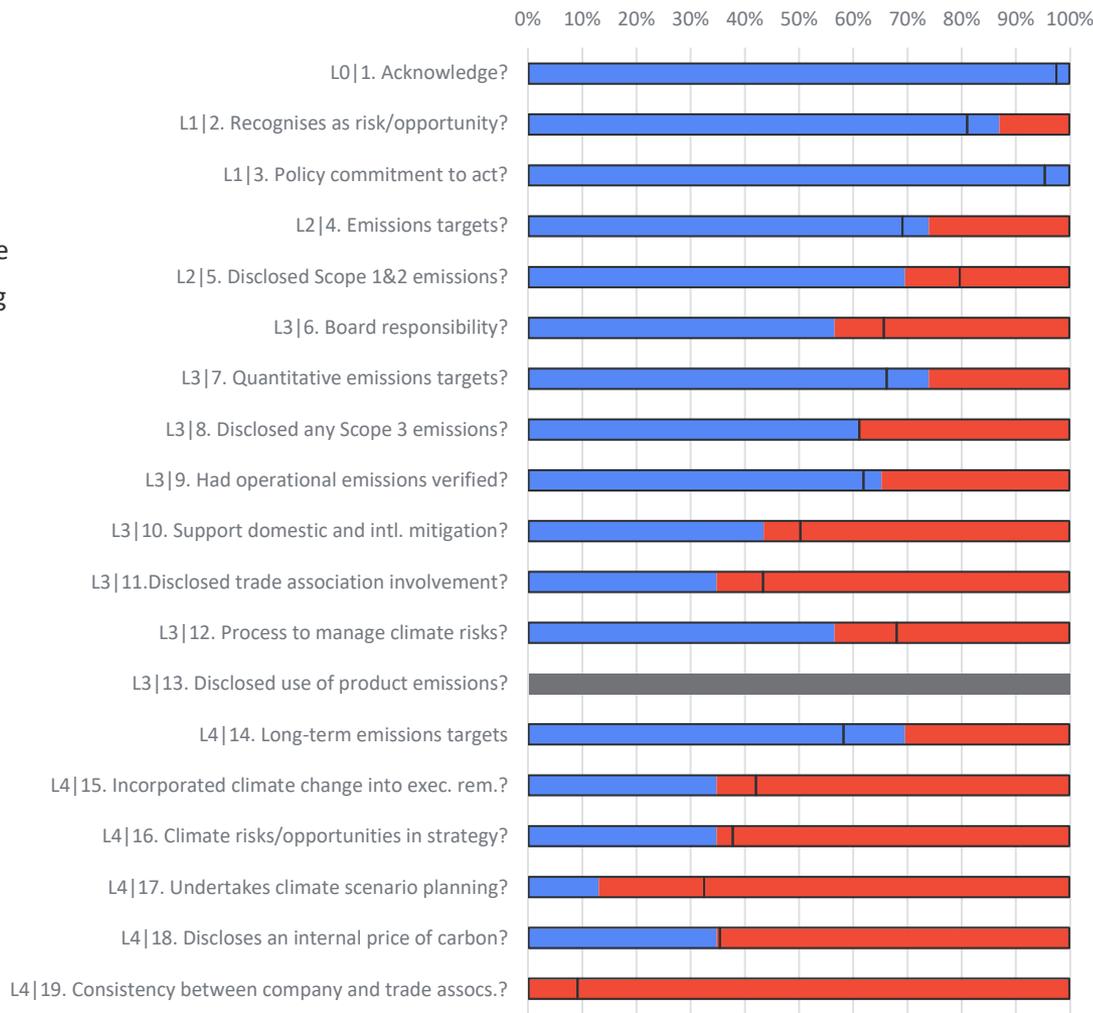


# Management Quality: indicator by indicator

Airlines outperform the TPI average on acknowledging climate change, having a corporate climate policy in place, and setting emissions reduction targets. Note that the latter indicator includes airlines' net targets that allow offsets, which are not included in TPI's Carbon Performance assessments.

Airlines are weaker than average on indicators that involve emissions disclosure and board oversight of climate change. They are also weaker on several Level 4 indicators including: incorporating climate change into executive remuneration; undertaking climate scenario planning; and maintaining consistency between their position on climate change and those of the trade associations they are involved in.

As was the case last year, there is no airline at the 4\* level.

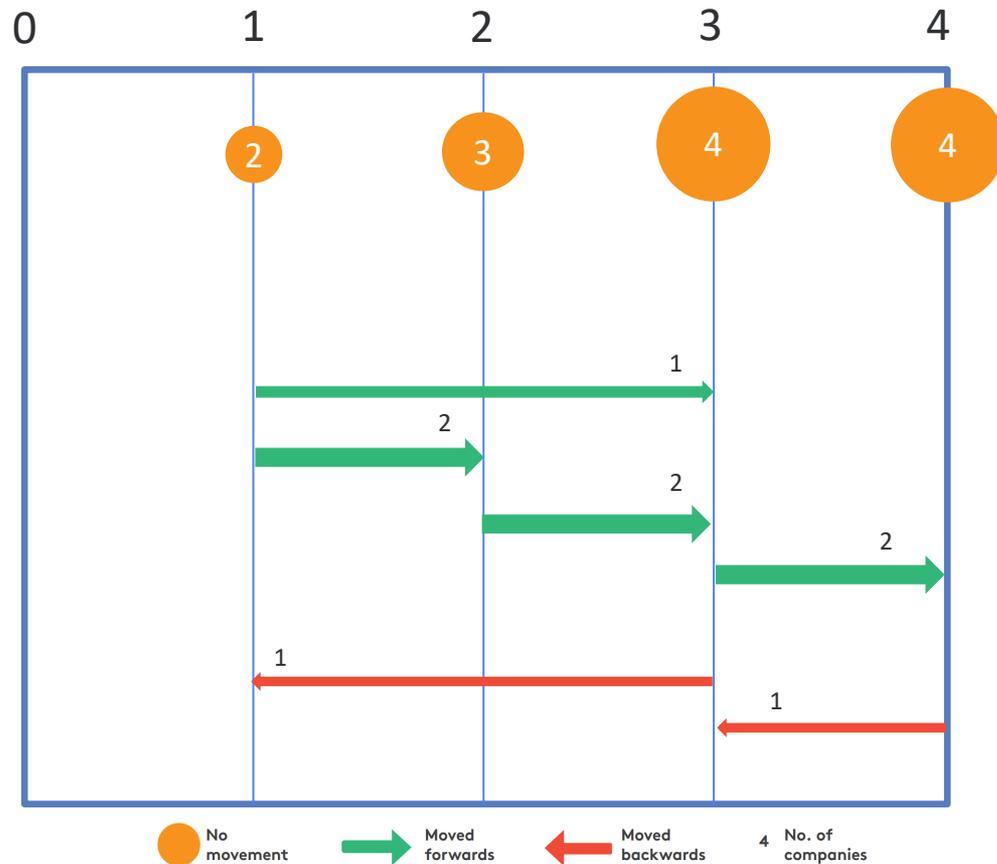


# Trends in Management Quality

We have trend data on 22 out of the 23 airlines we assess, as only Air Canada was added to the assessment universe during this cycle.

The average Management Quality level attained by airlines is 2.8; integrating climate change into operational decision-making. The worst performing airlines are at least at Level 1, which is unique within the transport sector. Airlines are among the top performing TPI sectors on Management Quality.

Seven airlines have moved up at least one level, while only two have dropped at least one level. There is hence a generally improving trend across our sample of the industry, evidenced by the increase in average score from 2.6 last year to 2.8 this year. The reasons for the observed level movements vary from company to company.

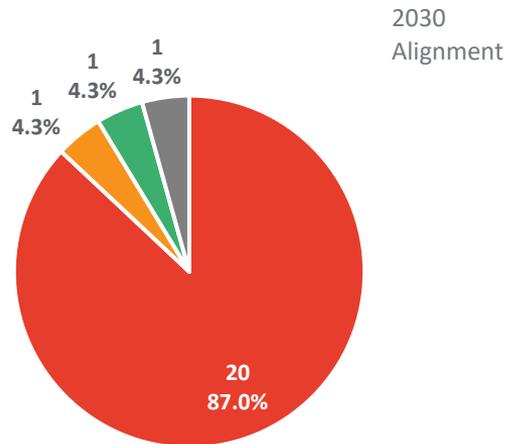
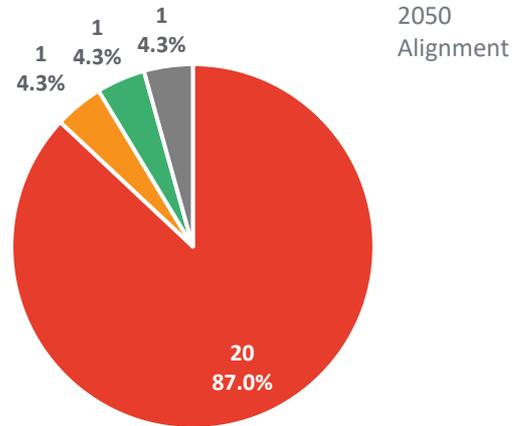


# Carbon Performance: alignment with the Paris Agreement benchmarks

The airline sector continues to be the worst-performing TPI sector on Carbon Performance, alongside oil & gas. A principal reason for this is the sector's focus on net emissions targets based on offsetting. TPI only considers gross emissions targets, because the benchmarks assume that gross emissions must fall.

After extending our benchmarks to 2050 and adjusting our passenger weight assumptions, we find that EasyJet is no longer aligned with any of the benchmarks. Wizz Air is aligned with the International Pledges benchmark. United Airlines is alone in being aligned with the most ambitious 2°C (High Efficiency) benchmark, because of its new 50% *gross* emissions target for 2050.

Encouragingly, there has been an increase in the number of airlines committing to gross emissions targets that exclude the use of offsets. Azul, EasyJet, IAG, Turkish Airlines, United Airlines and Wizz Air all now have such targets, though only the latter two are ambitious enough to align with any of our benchmarks.



- Not Aligned
- International Pledges
- 2 Degrees (High Efficiency)
- No or Unsuitable Disclosure



# Net targets and offsets

Thirteen airlines have adopted net targets (see table) such as IATA's 50% net emissions reduction from 2005 levels by 2050, or have committed to ICAO's carbon-neutral growth offsetting scheme called CORSIA. Others go further, committing to net zero emissions by 2050.

These net targets allow airlines' emissions to be offset by other sectors. The IEA model on which TPI's benchmarks are based produces a carbon budget for air transport, excluding the use of offsets. Thus, emissions reductions must be achieved directly within the aviation sector in order to be compared with our benchmarks. This is based on the rationale that the IEA's economy-wide global carbon budget is allocated between sectors in a cost-effective way. Carbon offsets, particularly those sourced in the voluntary market, also face concerns about additionality and carbon leakage.

TPI recommends that companies with net targets disclose what proportion of their target they anticipate meeting with offsets.

Airline	Target type	Target date	Flight Emissions (2019) MtCO <sub>2</sub>
Air Canada	Carbon neutral growth (CORSIA) 50% net emissions reduction compared to 2005 (IATA)	2021-2035 2050	13.1
Air France KLM	50% net emissions reduction compared to 2005	2030	28.2
ANA Group	50% net emissions reduction compared to 2005 (IATA)	2050	12.3
Delta	50% net emissions reduction compared to 2005 (IATA)	2050	41.5
EasyJet	Net zero emissions	2020 onwards	8.2
IAG	20% net emissions reduction Net zero emissions	2030 2050	30.4
Japan Airlines	Carbon neutral growth (CORSIA) 45% net emissions reduction compared to 2010 Net zero emissions	2021-2035 2030 2050	9.1
Korean Air	Carbon neutral growth (CORSIA)	2021-2035	13.3
LATAM	Carbon neutral growth (CORSIA) 50% net emissions reduction compared to 2005 (IATA)	2021-2035 2050	12.1
Lufthansa	Carbon neutral growth (CORSIA) 50% net emissions reduction compared to 2005 (IATA)	2021-2035 2050	32.9
Qantas	Carbon neutral growth (CORSIA) Net zero emissions	2021-2035 2050	9.3
Southwest	50% net emissions reduction compared to 2005 (IATA)	2050	20.5
Turkish Airlines	50% net emissions reduction compared to 2005 (IATA)	2050	16.7

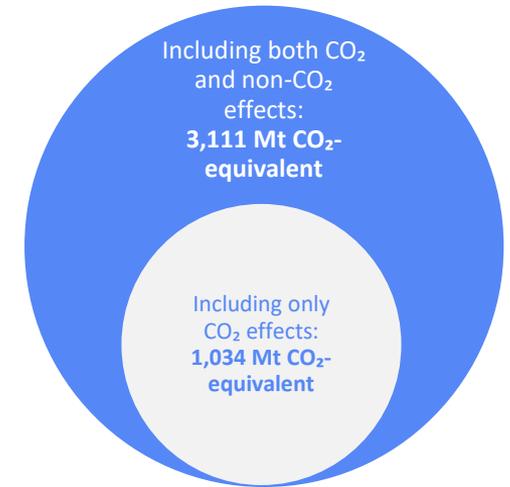


# Non-CO<sub>2</sub> climate impacts of aviation

In addition to CO<sub>2</sub>, aircraft have further climate impacts resulting from the emission of particulates, gases and water vapour. The most important of these non-CO<sub>2</sub> impacts is the creation of condensation trails ('contrails'). Halting anthropogenic global warming will require both net zero CO<sub>2</sub> emissions and reduced non-CO<sub>2</sub> radiative forcing. Our benchmarks follow IEA modelling in not currently including the sector's non-CO<sub>2</sub> effects on warming, due to the high uncertainty in quantifying them. The most recent scientific review of these effects estimates that aviation as a whole is currently warming the climate 3x faster than its CO<sub>2</sub> emissions alone.<sup>1</sup> TPI's benchmarks must therefore be understood as a generous upper bound for airline carbon intensities.

The non-CO<sub>2</sub> impacts of aviation are not measured by airlines, nor are they regulated by any institution, including the International Civil Aviation Organisation (ICAO). This is a risk for investors who seek to align their portfolios with climate goals and, when these additional impacts become better understood and better governed, for those who want to avoid unexpected regulatory pressure on their investments.

## Climate impact of aviation in 2018



<sup>1</sup> Lee et al. The contribution of global aviation to anthropogenic climate forcing for 2000 to 2018, *Atmospheric Environment* (2020), <https://doi.org/10.1016/j.atmosenv.2020.117834>.



# Decarbonising aviation

According to the IEA's Energy Technology Perspectives 2020 report, the primary tool that will allow the decarbonisation of aircraft is shifting fuel use towards biofuels and synthetic fuels made from sustainable hydrogen. Fuel efficiency will also play an important role, with novel developments like blended-wing-body design potentially leading to 20% fuel savings, and ultra-high-bypass-ratio (UHBR) engines enabling 30% fuel savings. Significant R&D investments will be required for these technologies to become viable. Modal shift towards less carbon-intensive forms of transportation is also expected to contribute to the overall decrease in emissions from the aviation sector.

As mentioned in the preceding slide, given aviation's additional non-CO<sub>2</sub> impact on warming, further mitigation measures will be required for air travel to halt its contribution to climate change.



# Inequality and aviation

A unique feature of the aviation sector is the fact that its emissions result from the activities of a very small group of people. Only 16% of the global population was responsible for 62% of aviation emissions in 2018. Within countries, there is further inequality. In the United States for example, the top 15% of air travellers made an average of nine trips, while the national average was just over two trips (IEA ETP, 2020).

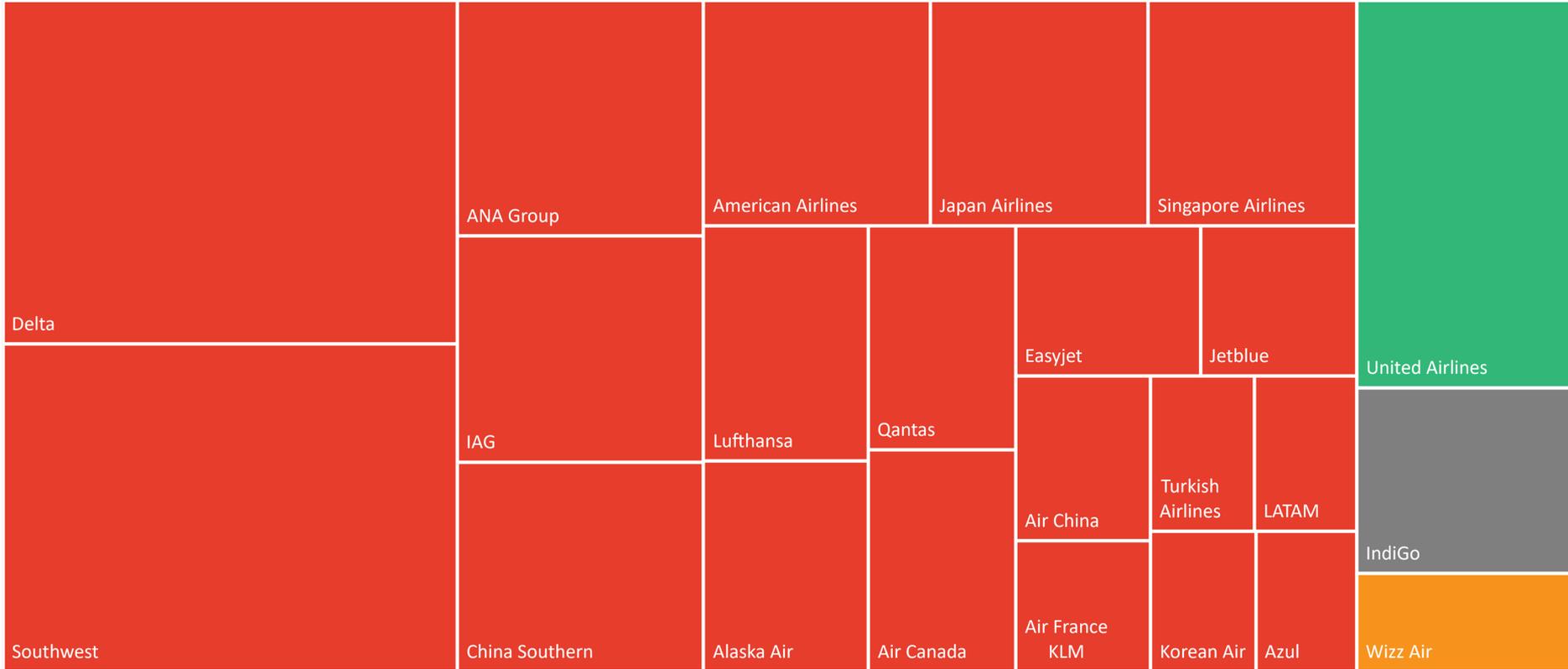
To respond to the unequal responsibility for aviation emissions, frequent-flyer levies have been proposed to discourage individuals and businesses from excessive flying.\* Such policies, along with modal shift in regions with good rail infrastructure, contribute to transition risk for airlines and their investors.

While demand for air travel may decrease in some areas due to modal shift, it is expected to increase overall, with growing demand in emerging economies. As such, the sector must make significant progress in reducing its emissions intensity.

\* The UK's Committee on Climate Change recently proposed a frequent-flyer levy, for example.



# Alignment of airlines, scaled by market cap.



■ Not Aligned
 ■ 2 Degrees - High Efficiency
 ■ International Pledges
 ■ No or Unsuitable Disclosure

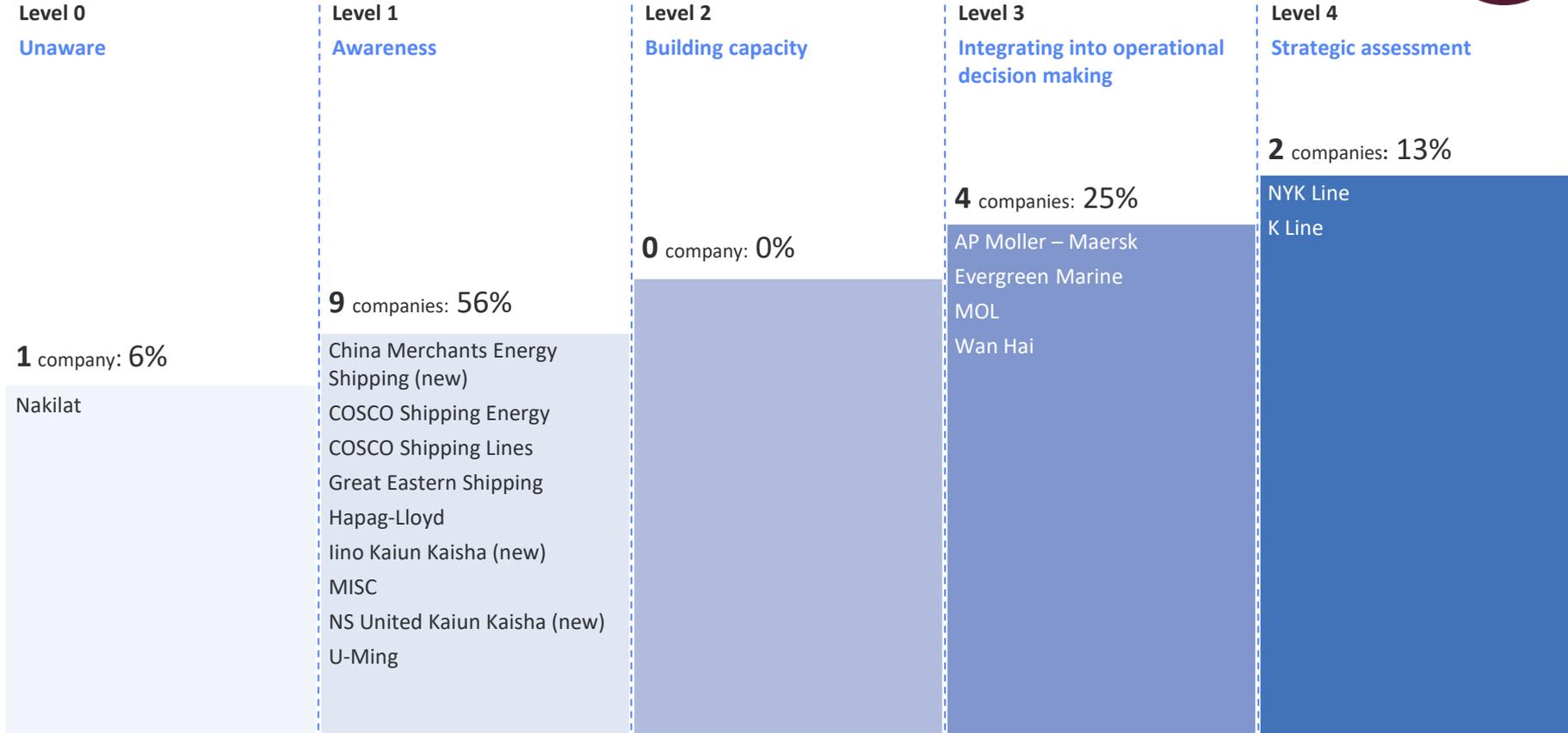


# Sector focus: international shipping



# Management Quality level

Companies' Management Quality ratings may not always reflect their most up-to-date disclosures. TPI updates its assessments once a year.

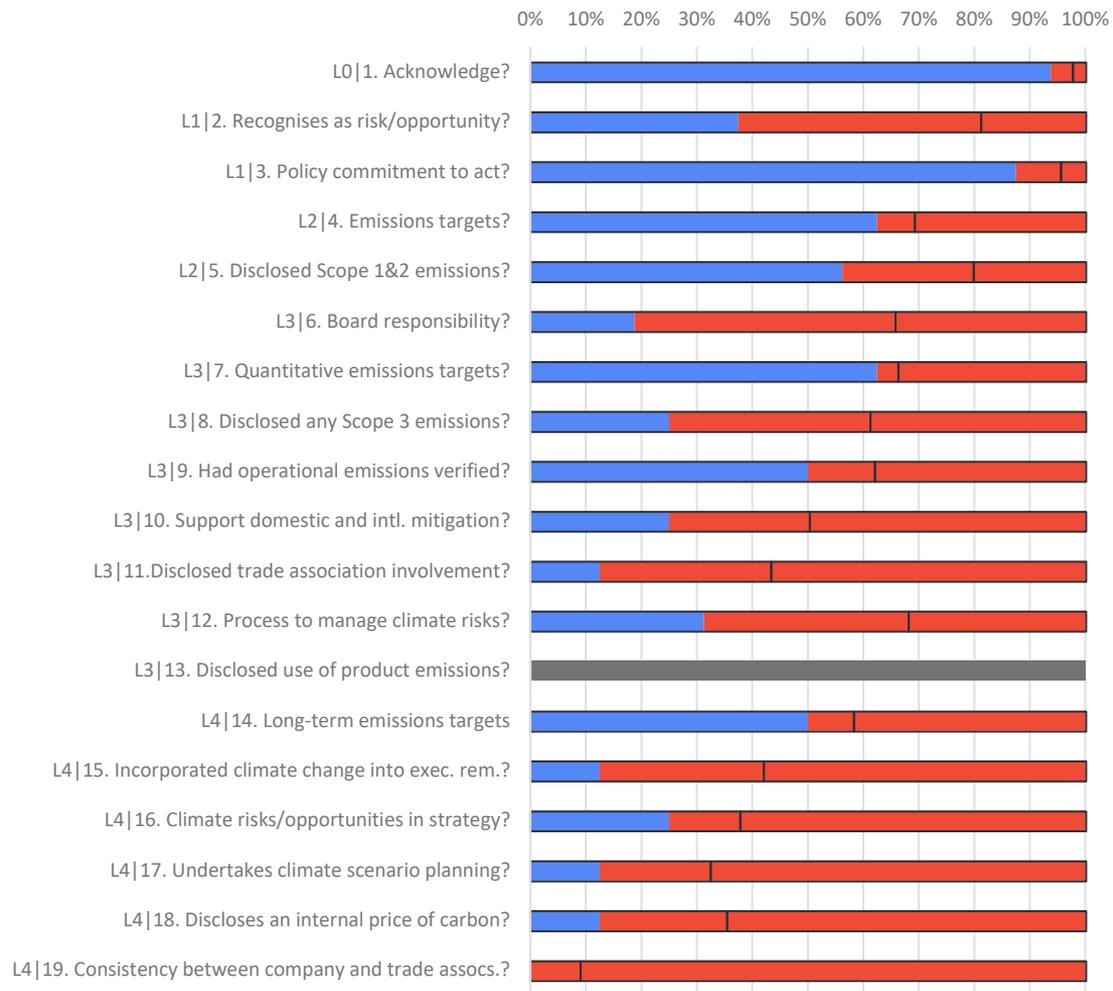


# Management Quality: indicator by indicator

The shipping sector underperforms on all Management Quality indicators when compared to the TPI universe. This holds both for basic indicators (e.g. recognising climate change as a risk/opportunity) as well as for more advanced ones (e.g. undertaking scenario planning). Some of the indicators where the shipping sector differs most dramatically from the TPI average include:

- Recognising climate change as a risk/opportunity for the business;
- Assigning a board member or committee with an explicit climate change oversight mandate;
- Developing a process to manage climate risk.

Nakilat remains the only Level 0 shipping company.



Key: blue = yes, red = no, black tick mark = TPI universe average

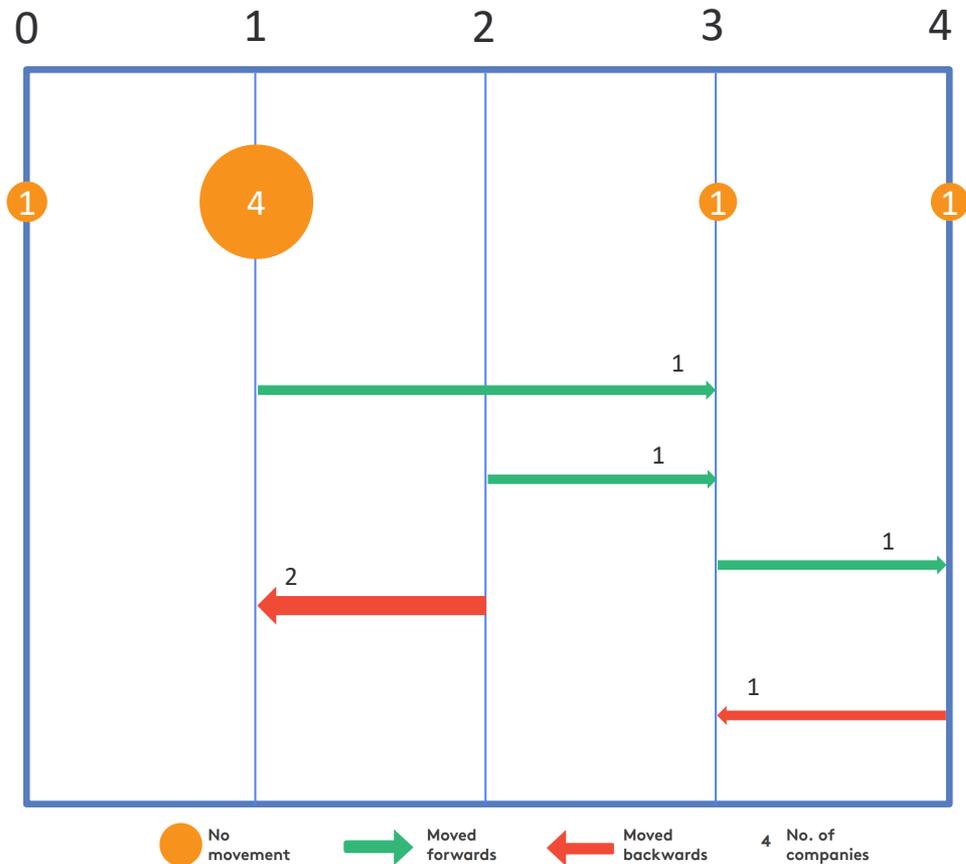


# Trends in Management Quality

The average Management Quality score of international shipping companies is 1.8, the lowest within transportation.

We have trend data on 13 shipping companies, as three companies have been added to TPI's universe for this cycle. Three companies have moved down one level, while three companies have moved up at least one level.

For the two companies dropping from Level 2 to 1 – Cosco Shipping Lines and U Ming – the underlying reason is their failure to continue explicitly recognising climate change as a relevant business risk and/or opportunity in their disclosures. On the other hand, the company moving up from Level 3 to 4, NYK Line, has nominated a board member or board committee with an explicit climate change mandate.

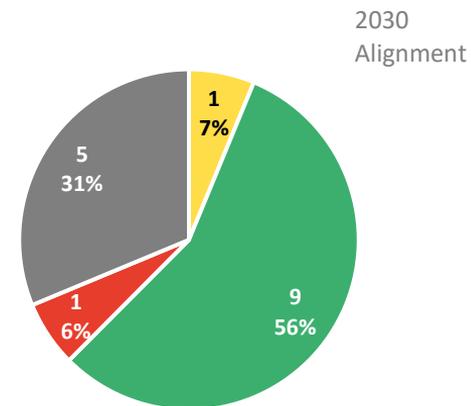
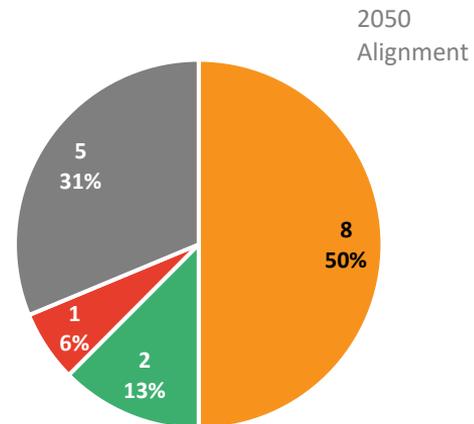


# Carbon Performance: alignment with the Paris Agreement benchmarks

The Carbon Performance of international shipping depends strongly on whether one takes a 2030 or 2050 perspective. More companies are aligned with the Below 2°C benchmark in 2030 than in 2050; nine versus two. The Below 2°C benchmark incorporates the longer-term IMO target of reducing shipping emissions by 50% from the 2008 level, which, coupled with projected rapid growth in shipping activity, results in a low benchmark emissions intensity. A similar logic applies to the 2°C benchmark. Companies' full transition pathways are plotted on TPI's online tool.

Another factor is the lack of long-term emissions targets in shipping. As fewer companies have set targets beyond 2030, their latest available/projected intensity is compared to the 2050 benchmark value. A number of shipping companies are aligned in 2030 by virtue of being less emissions-intensive than the industry average today. However, that alone is not enough to align in 2050.

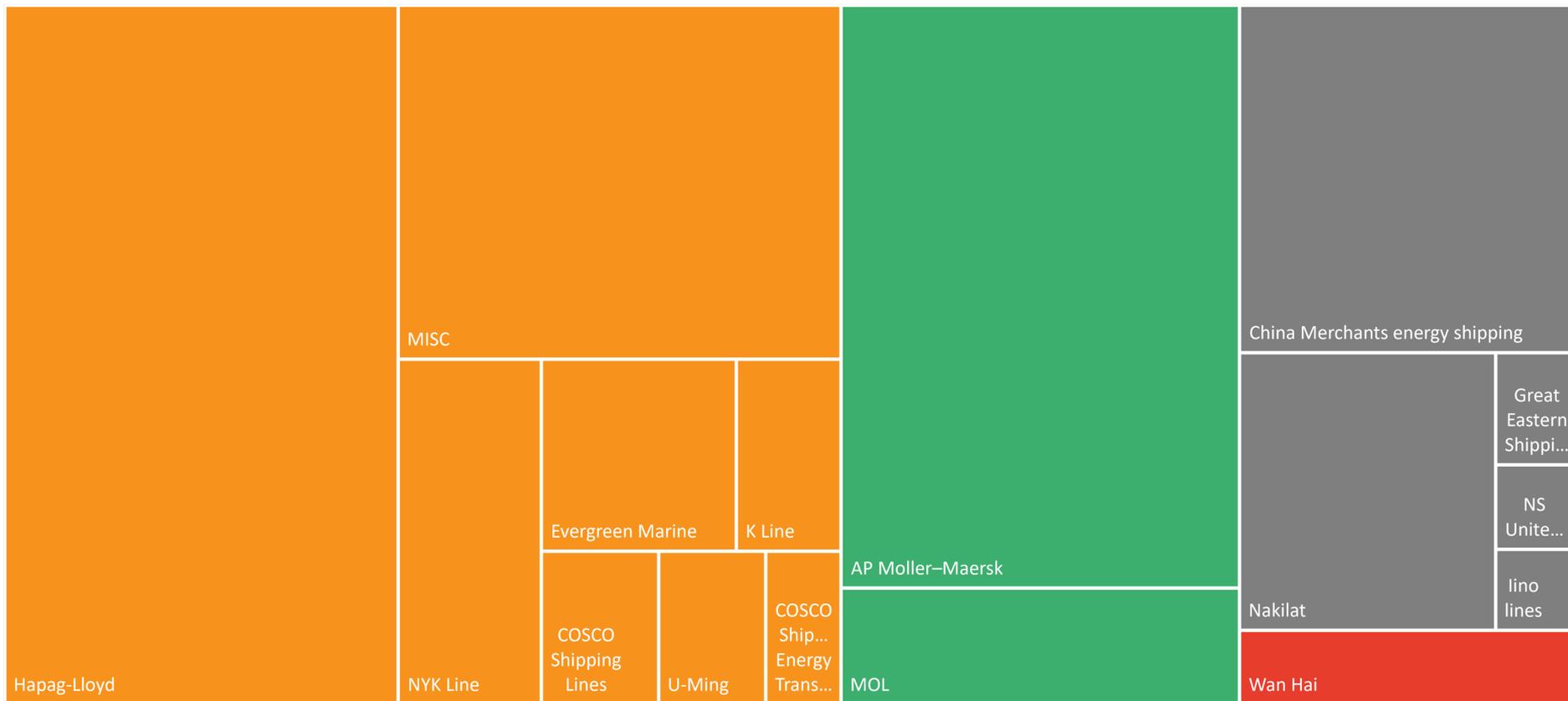
Relative to both 2030 and 2050, only one shipping company is not aligned. Five companies, 31% of those assessed, either do not disclose their emissions from shipping operations, or they do so in a form that TPI cannot assess.



- International Pledges
- Below 2 Degrees
- No or unsuitable disclosure
- 2 Degrees
- Not aligned



# Alignment of shipping companies, scaled by market cap.



■ Below 2 Degrees
 ■ International Pledges
 ■ No or unsuitable disclosure
 ■ Not aligned



# 5. About TPI: further information about the initiative and methodology

# TPI strategic relationships

The Grantham Research Institute on Climate Change and the Environment, a research centre at the London School of Economics and Political Science (LSE), is TPI's *academic partner*. It has developed the assessment framework, provides company assessments, and hosts the online tool.

FTSE Russell is TPI's *data partner*. FTSE Russell is a leading global provider of benchmarking, analytics solutions and indices.

The Principles for Responsible Investment (PRI) manages and provides supporter coordination to TPI. PRI is an international network of investors implementing the six Principles for Responsible Investment.



THE LONDON SCHOOL  
OF ECONOMICS AND  
POLITICAL SCIENCE ■



Grantham  
Research Institute  
on Climate Change  
and the Environment



# TPI Governance

## TPI Co-Chairs



Environment Agency  
Pension Fund

## TPI Steering Committee



Environment Agency  
Pension Fund



# Our Supporters



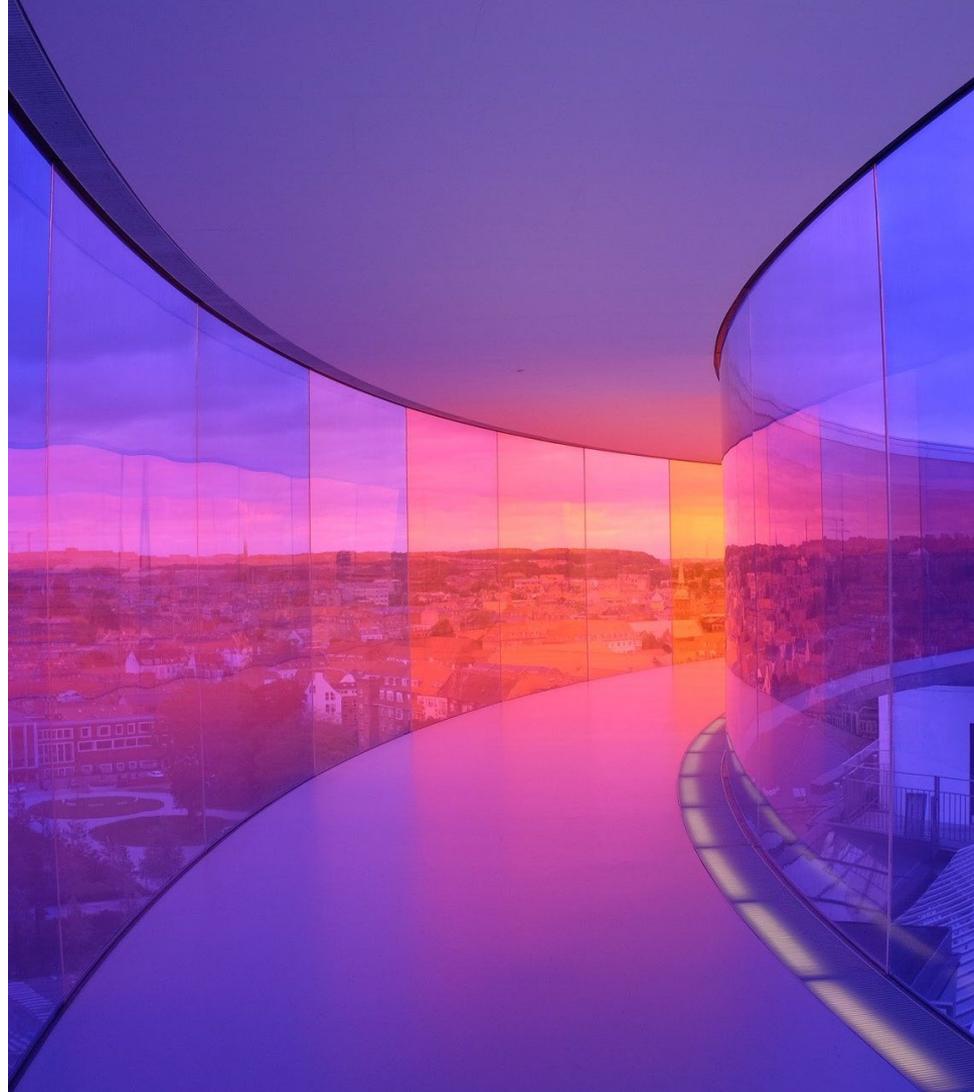
# TPI design principles

**Disclosure-based:** Company assessments are based only on publicly available information

**Accessible and easy to use:** Outputs are designed to be useful to Asset Owners and Asset Managers, especially with limited resources to assess climate change

**Not seeking to add unnecessarily to the reporting burden:** Aligned with existing initiatives and disclosure frameworks, such as CDP and TCFD

**Corporate level:** Pitched at a high level of aggregation



# Overview of the TPI Tool

TPI's company assessments are divided into 2 parts:

1. *Management Quality* covers companies' management/governance of greenhouse gas emissions and the risks and opportunities arising from the low-carbon transition;
2. *Carbon Performance* assessment involves quantitative benchmarking of companies' emissions pathways against the international targets and national pledges made as part of the 2015 UN Paris Agreement, for example limiting global warming to below 2°C.

Both of these assessments are based on company disclosures.

## Management Quality: Diversified Mining

Distribution of companies in the **Diversified Mining** sector according to the management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition.



## Carbon Performance: Diversified Mining



# Management Quality

## Level 0

Unaware

## Level 1

Awareness

## Level 2

Building capacity

## Level 3

Integrating into operational decision making

## Level 4

Strategic assessment

TPI's Management Quality framework is based on 19 indicators, each of which tests whether a company has implemented a particular carbon management practice. These 19 indicators are used to map companies on to 5 levels/steps. The data are provided by FTSE Russell. See our latest *Methodology and Indicators Report, version 3.0*, for more detail.

Company does not recognise climate change as a significant issue for the business

Company recognises climate change as a relevant risk/opportunity for the business

Company has a policy (or equivalent) commitment to action on climate change

Company has set GHG emission reduction targets

Company has published info. on its operational GHG emissions

Company has nominated a board member/committee with explicit responsibility for oversight of the climate change policy

Company has set quantitative targets for reducing its GHG emissions

Company reports on its Scope 3 GHG emissions

Company has had its operational GHG emissions data verified

Company supports domestic & international efforts to mitigate climate change

Company discloses membership and involvement in trade associations engaged on climate

Company has a process to manage climate-related risks

Company discloses Scope 3 GHG emissions from use of sold products (selected sectors only)

Company has set long-term quantitative targets (>5 years) for reducing its GHG emissions

Company has incorporated climate change performance into executive remuneration

Company has incorporated climate change risks and opportunities in its strategy

Company undertakes climate scenario planning

Company discloses an internal carbon price

Company ensures consistency between its climate change policy and position of trade associations of which it is a member

# Carbon Performance

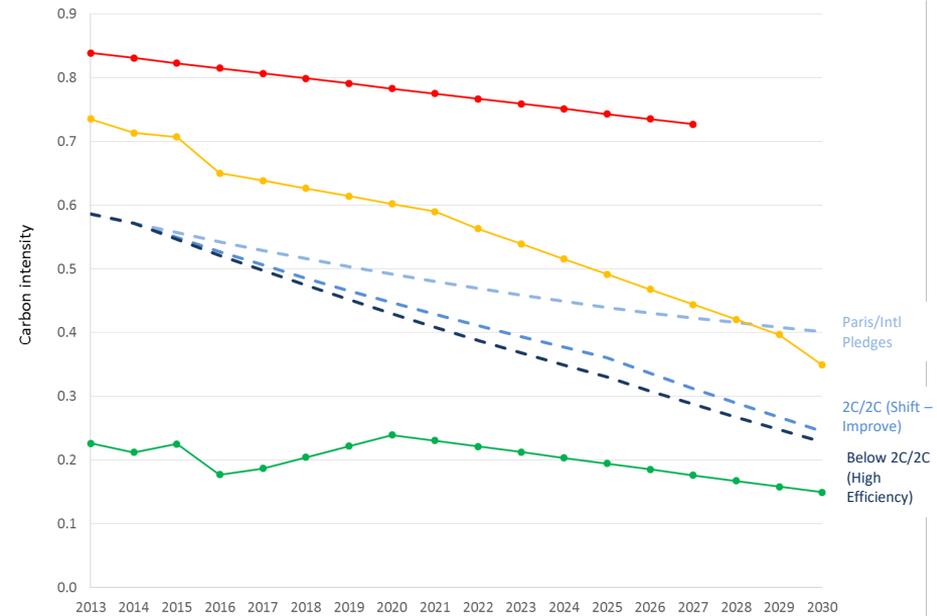
TPI's Carbon Performance assessment tests the alignment of company targets with the UN Paris Agreement goals\*. We use 3 benchmark scenarios for each sector.

For autos and airlines these are:

1. *Paris/International Pledges*, consistent with emissions reductions pledged by countries as part of the Paris Agreement (i.e. NDCs) and through other international forums (e.g. the International Civil Aviation Organisation);
2. *2 Degrees (Shift-Improve)*, consistent with the overall aim of the Paris Agreement, albeit at the low end of the range of ambition;
3. *2 Degrees (High Efficiency)*, a variant of the previous scenario that assumes there is no shift in passengers to lower-carbon modes of transport; instead all emissions reductions are delivered through increased fuel efficiency and low-carbon technology.

For international shipping, as there is little scope to shift to a lower carbon mode, we replace the *2 Degrees (High Efficiency)* scenario with a *Below 2 Degrees (B2D) scenario*.

Benchmarking is sector-specific and based on emissions intensity (e.g. grams of CO<sub>2</sub> per tonne kilometre). See TPI website for further details.



Company A is not aligned with any of the benchmarks

Company B is eventually aligned with the Paris/International Pledges, but neither 2C/2C (Shift-Improve) nor Below 2C/2C (High Efficiency)

Company C is aligned with all Paris benchmarks, including Below 2C/2C (High Efficiency)

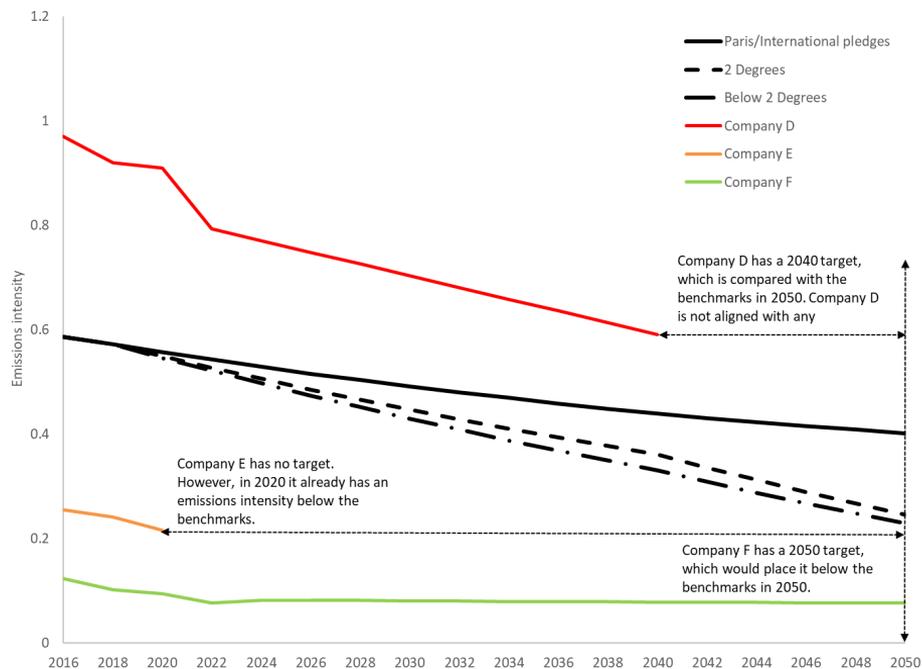
\*We use the Sectoral Decarbonization approach (SDA), which was created by CDP, WWF & WRI in 2015 & is also used by the Science Based Targets Initiative.

# Reducing TPI's Carbon Performance data to a single indicator of alignment with the Paris Agreement

Our Carbon Performance data cover multiple years. How can they be used to answer the simple question: is a company aligned with the Paris goals?

To do this, we compare a company's emissions intensity in the last year for which we have data with the benchmarks at the end of the horizon. For transport companies, we look out as far as 2050, so for example:

- Company with a 2050 target – the company's projected 2050 emissions intensity is compared with the benchmark emissions intensities in 2050;
- Company with no target – the company's historical emissions intensity is compared with the benchmark emissions intensities in 2050 (i.e. a comparison of where the company is now with where it would need to be in 2050).



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