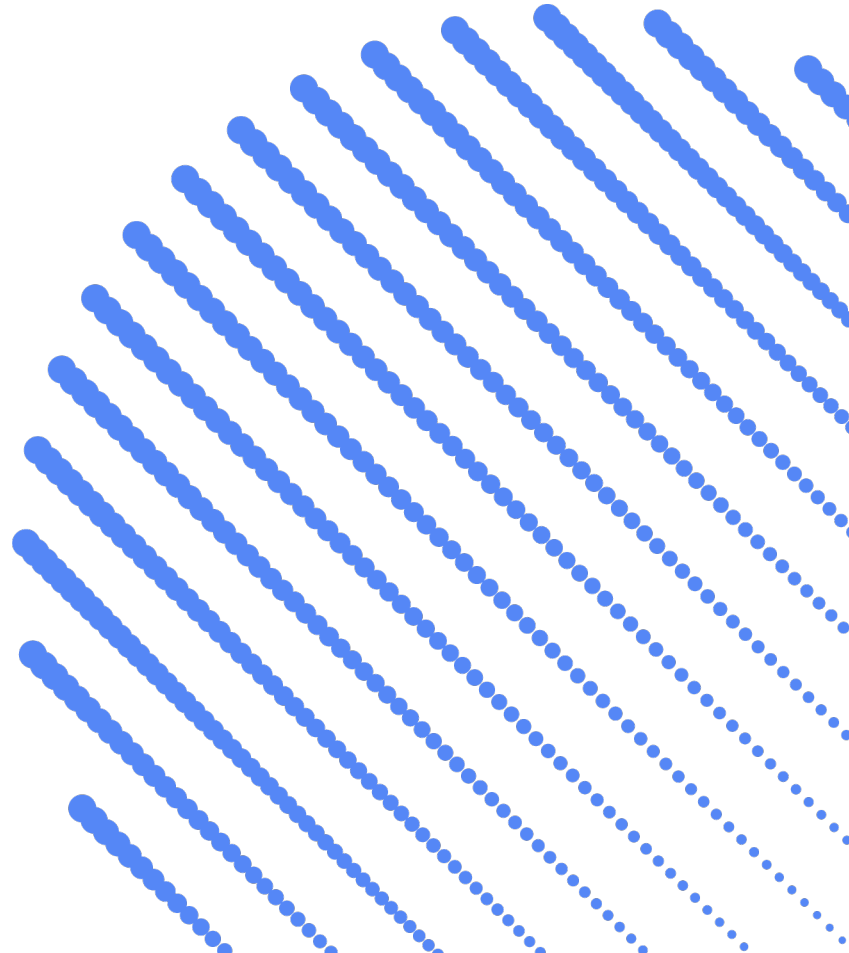




Transition  
Pathway  
Initiative

# Management Quality and Carbon Performance of Energy Companies: September 2019

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# Research Funding Partners



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



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# Key messages

- This slide set reports on TPI's latest assessment of the energy sector, comprising 135 companies involved in coal mining, electricity and oil and gas production. We have expanded coverage from 105 companies last year, and we include a comprehensive assessment of the Carbon Performance of oil and gas producers for the first time.
- Only four energy companies are on Management Quality Level 0, unaware of or not acknowledging climate change as a business issue. Close to 60% of energy companies are on Level 3 – integrating climate change into operational decision-making – or Level 4 – strategic assessment of climate change.
- On average, the sector is just over halfway between Level 2 and Level 3. Reaching Level 3 requires both disclosure of operational GHG emissions and setting emissions targets, so the average energy company is at the stage of putting these both in place.
- Within the sector, electricity utilities perform best, while oil and gas producers are in line with the energy-sector average. Coal mining is the worst performing sector in the TPI database at this time. Within the coal-mining sector, however, we see a divergence between the leaders clustered on Levels 3 and 4, and the laggards stuck on Levels 0 and 1. The leaders tend to be diversified and large-cap. companies.

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# Key messages

- On aggregate, energy companies' Management Quality has hardly improved since last year. Further analysis indicates that there has been progress amongst the largest companies, but that too few companies have moved up from last year, and the new small- and mid-cap. companies that have been added to the database tend to have lower Management Quality.
- Our Carbon Performance assessment includes 109 companies in the electricity and oil and gas sectors. Only 28% are aligned with one or more of the Paris Agreement benchmarks and only 12% will be aligned with the most ambitious Below 2°C benchmark. These shares are similar to those for the whole TPI database as reported in our recent *TPI State of Transition Report 2019*.
- The contrast between the Carbon Performance of electricity utilities and oil and gas producers is stark. Electricity is the best-performing sector in the TPI database on Carbon Performance. Almost half of companies are already aligned with what the Paris Agreement requires by 2030, or will be on the basis of emissions targets they have set.
- Conversely the oil and gas sector is the worst performing TPI sector on Carbon Performance. Only two companies plan to be aligned with the least ambitious benchmark (Paris Pledges) by 2050, namely Shell and Repsol. Setting ambitions/targets including downstream, Scope 3 emissions from use of sold products is key for oil and gas producers to demonstrate alignment with the Paris goals in terms of carbon intensity of energy supply.

# About the Transition Pathway Initiative

# About TPI and this slide set

TPI is a global initiative led by Asset Owners and supported by Asset Managers. Established in January 2017, TPI now has over 50 supporters with \$15 trillion of combined Assets Under Management and Advice.

Using publicly disclosed data, TPI assesses the progress 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 energy sector, including companies involved in mining coal, electricity utilities, and oil and gas producers. It contains our first comprehensive Carbon Performance assessment of the oil and gas sector.



# 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 design principles

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

Outputs should be useful to Asset Owners and Asset Managers, especially with limited resources: *accessible and easy to use*

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

Pitched at a high level of aggregation: *corporation-level*





# 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.

## TPI Tool

The TPI tool enables the assessment of companies' carbon management quality and carbon performance, within a selected sector.

A tutorial to help you use the tool can be found [here](#).

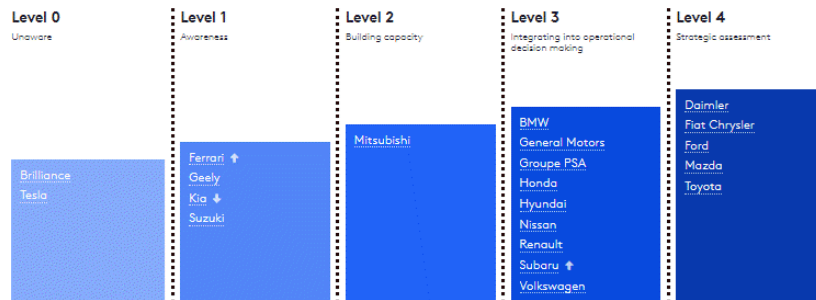
[Download complete data set as an MS Excel file](#) (updated May 2019)

Filter by sector: Autos [Submit] [Clear all]

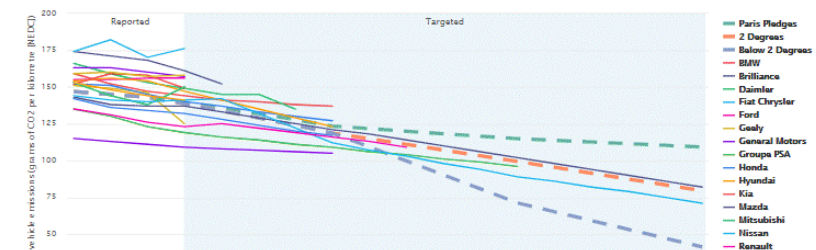
Go straight to a company: [Choose a company]

Filter companies

### Management Quality: Autos



### Carbon Performance: Autos



# 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 (*new question*)

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 (*modified question*)

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 (*new question*)

# Carbon Performance

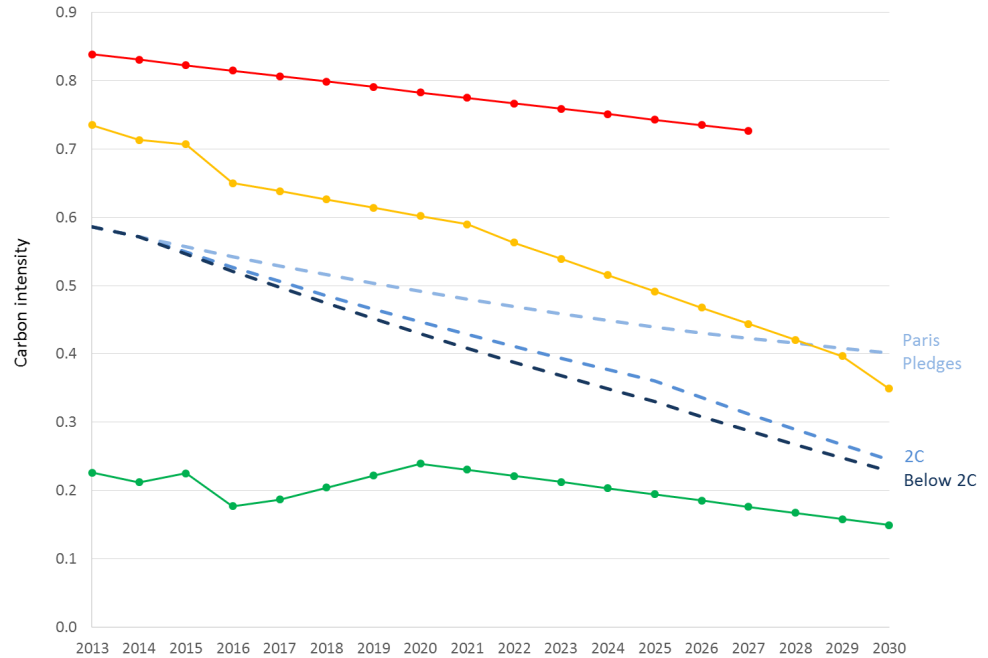
TPI's Carbon Performance assessment tests the alignment of company targets with the UN Paris Agreement goals\*.

We use 3 benchmark scenarios, which in the energy sector are:

1. *Paris Pledges*, consistent with emissions reductions pledged by countries as part of the Paris Agreement (i.e. NDCs);
2. *2 Degrees*, consistent with the overall aim of the Paris Agreement, albeit at the low end of the range of ambition;
3. *Below 2 Degrees*, consistent with a more ambitious interpretation of the Paris Agreement's overall aim.

Benchmarking is sector-specific and based on emissions intensity (e.g. tonnes of CO<sub>2</sub> per MWh electricity generated). Data for the energy sector come from IEA. Further details on sectoral methodologies can be found on the TPI website.

\*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.



Company A is not aligned with any Paris benchmark

Company B is eventually aligned with the Paris Pledges, but neither 2C nor Below 2C

Company C is aligned with all Paris benchmarks, including Below 2C

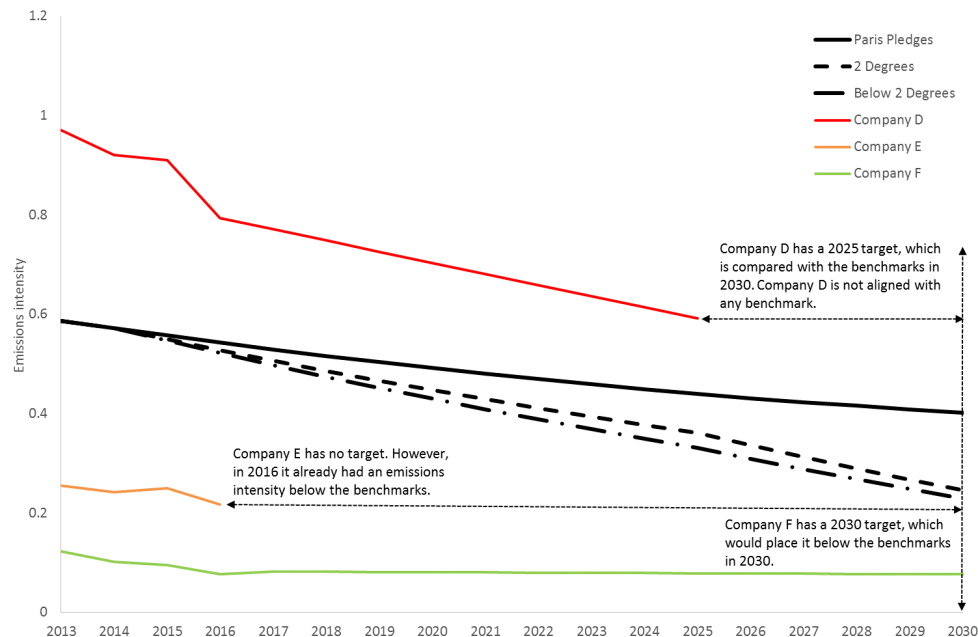
# Reducing TPI's Carbon Performance data to a single indicator of alignment with Paris

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 (2030 for electricity, 2050 for oil and gas).

Using electricity as an example:

- Company with a 2030 emissions reduction target – the company's expected 2030 emissions intensity is compared with the benchmark emissions intensities in 2030;
- Company with no emissions reduction target – the company's historical emissions intensity is compared with the benchmark emissions intensities in 2030 (i.e. a comparison of where the company is now with where it would need to be in 2030).



# The state of the energy transition: overview of results



# TPI coverage of the energy industry

This latest TPI report covers 135 of the world's largest and highest-emitting public companies across three sectors involved in energy supply: coal mining, electricity, and oil and gas.

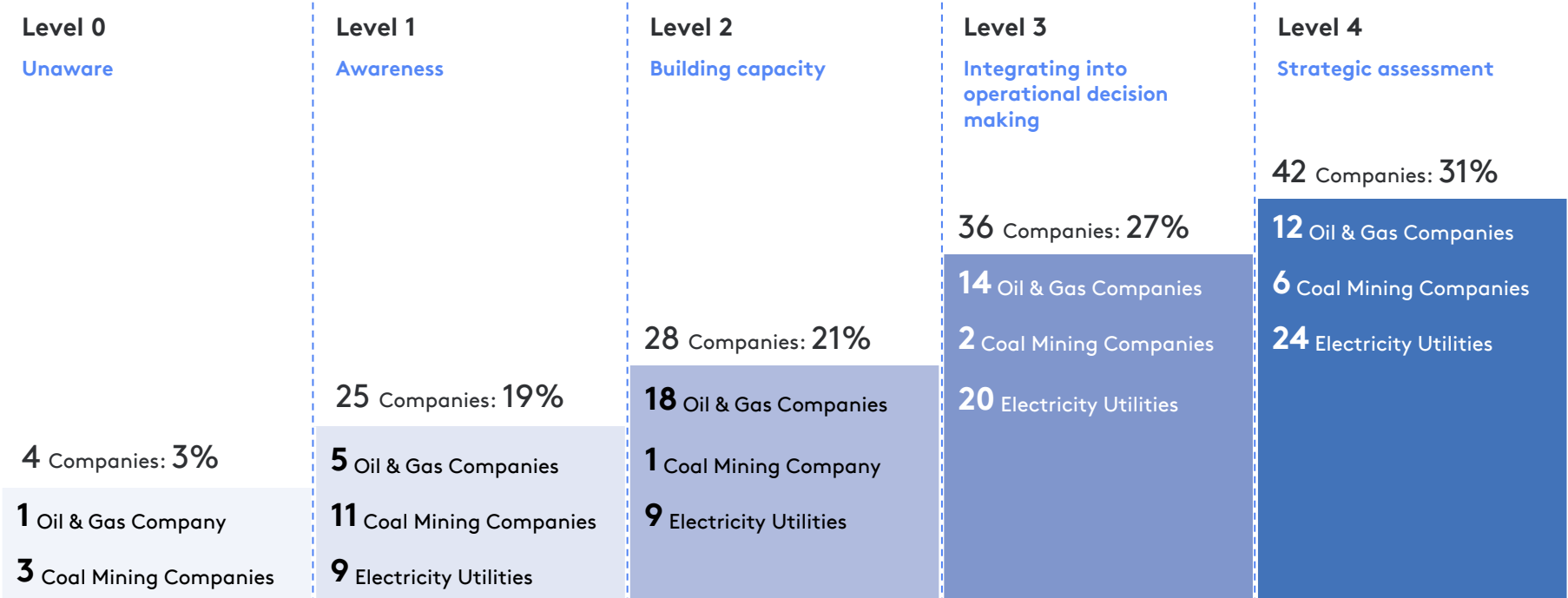
These three sectors are assessed on Management Quality for the third time by TPI, allowing us to track companies' progress. We extend coverage in the electricity sector from 41 to 62, and in the oil and gas sector from 45 to 50. We also cover 23 companies involved in coal mining, compared with 19 last year.

We assess the Carbon Performance of 59 electricity utilities with a significant electricity generation business (compared to 37 last year). Additionally, we provide a comprehensive Carbon Performance assessment of oil and gas producers (all 50 companies) for the first time.

We plan to release a Discussion Paper on how to assess the Carbon Performance of mining companies in the coming months.

Sector	Companies assessed on Management Quality	Companies assessed on Carbon Performance
Oil and Gas	50	50
Coal Mining	23	0
Electricity Utilities	62	59
<b>Total</b>	<b>135</b>	<b>109</b>

# Management Quality level



# Management Quality level

Energy companies' average Management Quality score is now 2.6, meaning the average company is moving towards integrating climate change into operational decision making (Level 3). This is the same average score as last year.

Reaching Level 3 requires both disclosure of operational GHG emissions and setting emissions targets, so the average company is at the stage of putting these both in place.

Within the sector, electricity utilities' average Management Quality score is 3, oil and gas producers average 2.7, but coal-mining companies only average 1.9, making coal mining the worst performing sector in the TPI database at this time.

There are four 4\* companies, which satisfy all relevant Management Quality criteria. They are: BHP Billiton, E.ON, Equinor and Suncor Energy. It has become significantly harder to achieve a 4\* rating this year, due to the inclusion of challenging new and modified questions about lobbying and executive remuneration respectively.





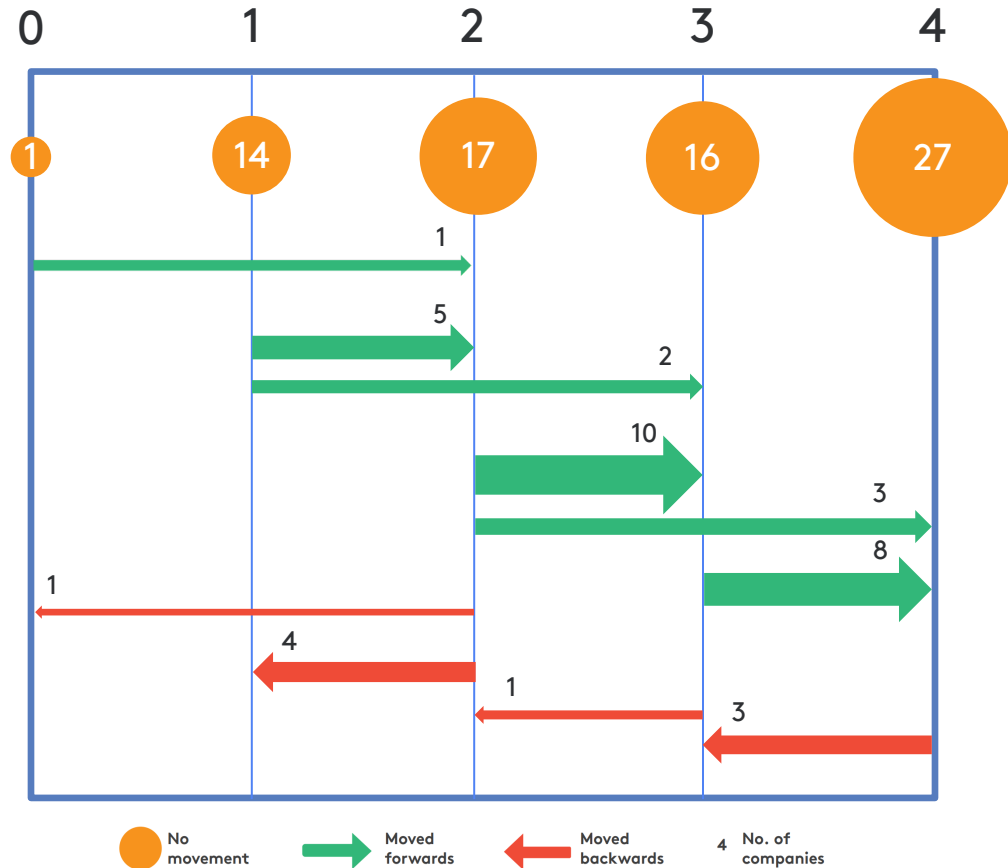
# Trends in Management Quality

We have trend data on 113 companies, which have now been assessed by TPI at least twice. We find that:

- 48 companies on Levels 0-3 stayed on the same level (a further 27 companies already attained Level 4 in their previous assessment and have stayed there);
- 29 companies moved up at least one level;
- 9 companies moved down at least one level.

Since more companies are moving up than down, the fact that the energy sector's average Management Quality score has stayed the same is due to the addition of new companies, which tend to be small- to medium-cap. and have relatively low Management Quality.

Improvements are mostly driven by the electricity and oil and gas sectors, rather than coal. On the other hand, most companies that have moved down a level are in oil and gas as well.



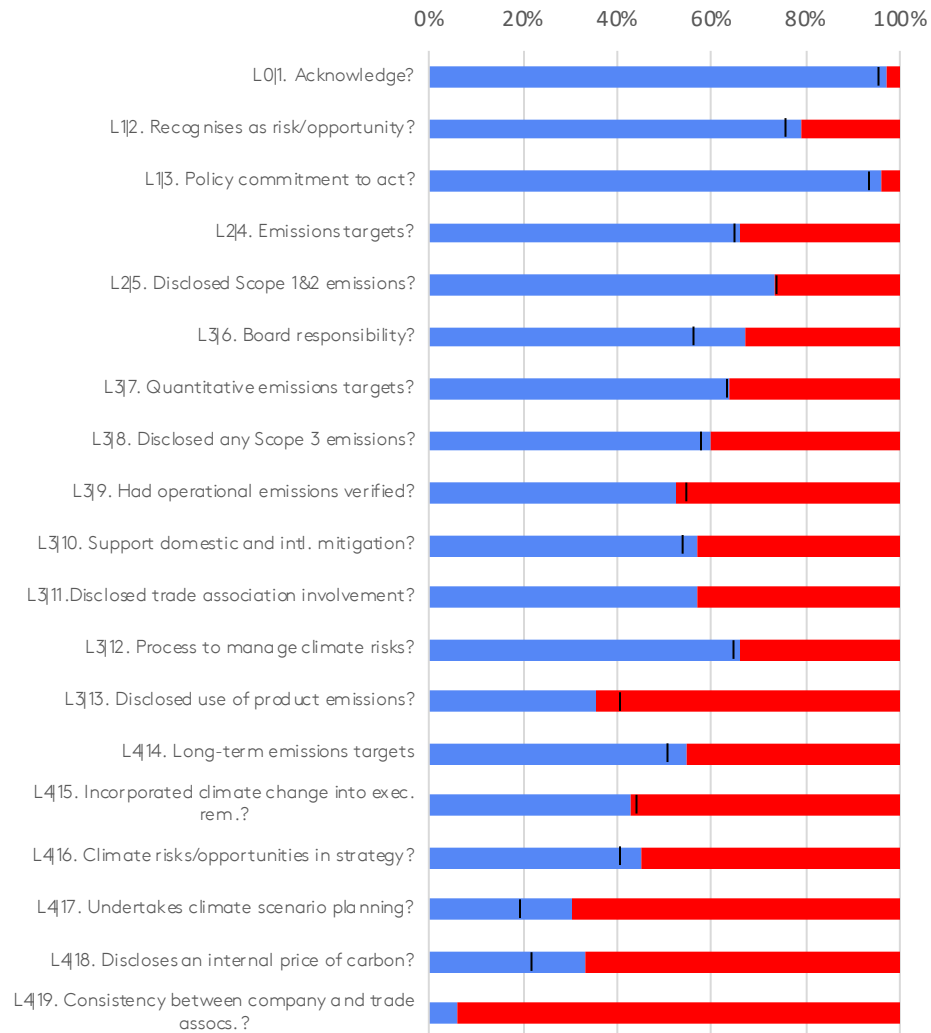
# Management Quality: indicator by indicator

Most energy companies implement the basic carbon management practices, with fewer taking the more advanced steps. We see this general pattern in all TPI sectors.

Compared with averages over the whole TPI database, the energy sector is relatively strong throughout, but particularly on board responsibility for climate change, scenario planning and internal carbon pricing.

Only 36% of coal-mining and oil and gas companies disclose emissions from use of their sold products, despite these accounting for the vast majority of those companies' lifecycle greenhouse gas emissions.

We have added two new questions on lobbying this year (Q11 and Q19). We find that 57% of companies disclose their membership and involvement in trade associations that are engaged in climate issues. However, only 6% ensure consistency between their climate change policy and the positions taken by those trade associations.



\* Q13 not applicable to electricity utilities

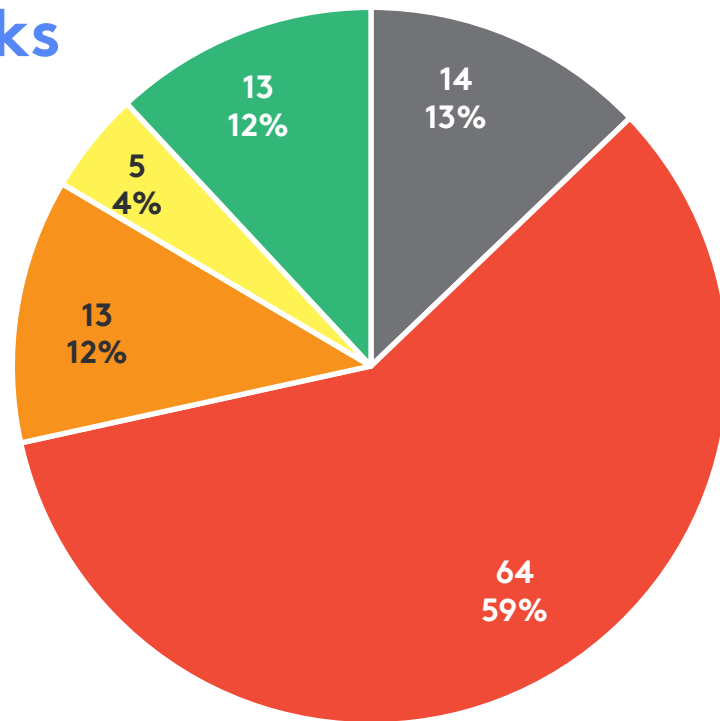
# Carbon Performance: alignment with the Paris Agreement benchmarks

This Carbon Performance assessment includes 109 companies in the electricity and oil and gas sectors.

Only 31 (28%) are aligned with one or more of the Paris Agreement benchmarks. Of those 31, only 13 will be aligned with the most ambitious Below 2°C benchmark. These shares are similar to those for the whole TPI database as reported in our recent *TPI State of Transition Report 2019*.

These results assume companies' carbon intensity does not increase or decrease after the last year for which we have data (see slide 11). Therefore we also repeated the analysis, classifying as Paris-aligned only those companies with 2030/50 emissions targets below the benchmarks. This is a more stringent test of alignment, but the results are almost exactly the same.

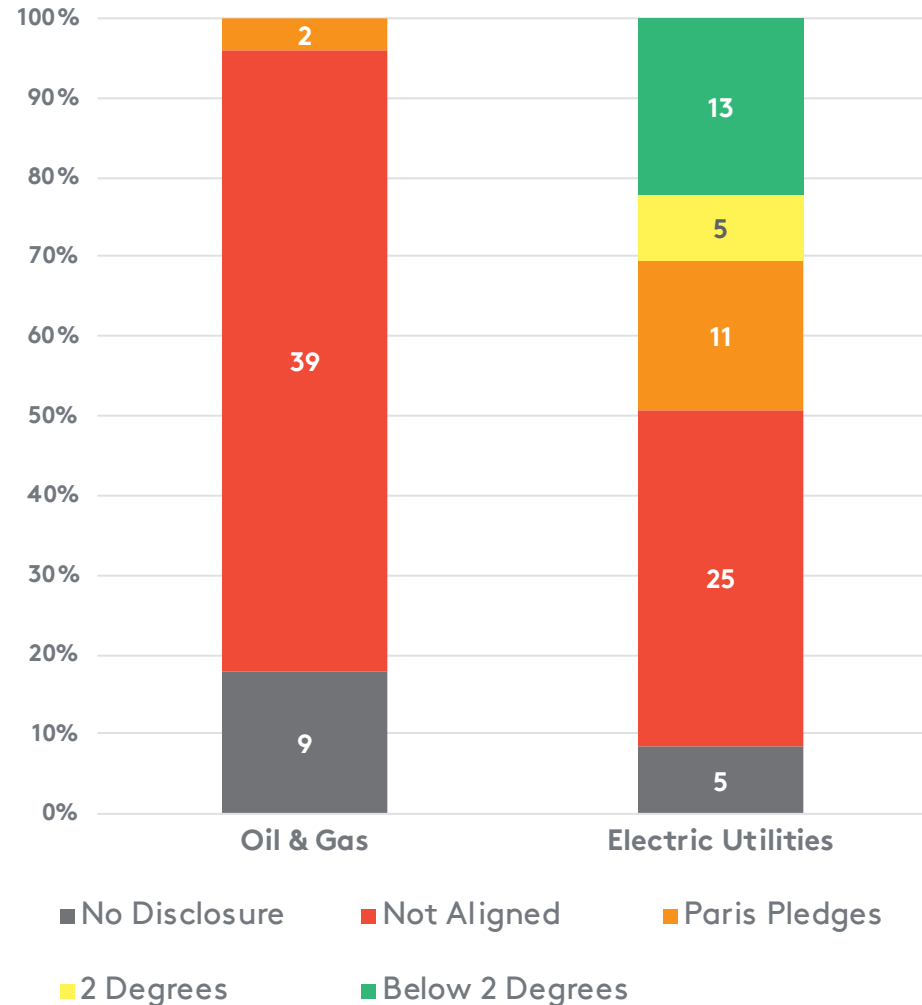
We anticipate publishing a Discussion Paper on Carbon Performance in mining, with a proposed method and initial results, in the coming months.



# Carbon Performance: sector breakdown

The contrast between the Carbon Performance of electricity utilities and oil and gas producers is stark:

- The electricity sector fares better than any other sector in the TPI database on Carbon Performance. Almost half of companies are already aligned with what the Paris Agreement requires by 2030, or will be on the basis of emissions targets they have set.
- Conversely the oil and gas sector is the worst performing TPI sector on Carbon Performance. Only two companies plan to be aligned with the least ambitious benchmark (Paris Pledges) by 2050, namely Shell and Repsol.



# Sector focus: oil & gas



# 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

**1 company**

Targa Resources

**Level 1**  
Awareness

**5 companies**

Oil & Natural Gas  
Petrochina  
Reliance Industries  
Rosneft Oil  
TATNEFT

**Level 2**  
Building capacity

**18 companies**

Anadarko Petroleum  
Cabot Oil & Gas  
Cheniere Energy  
CNOOC  
Concho Resources  
Diamondback Energy  
Encana  
EOG Resources  
Formosa Petrochemical  
Gazprom  
Lukoil  
Marathon Oil  
Marathon Petroleum  
Noble Energy  
Petrobras  
Phillips 66  
Pioneer Natural Resource  
Valero Energy

**Level 3**  
Integrating into  
operational decision  
making

**14 companies**

Apache  
BP  
Canadian Natural Resources  
Cenovus Energy  
Chevron  
China Petroleum & Chemical  
Devon Energy  
Ecopetrol  
Exxon Mobil  
Hess  
Imperial Oil  
NovaTek  
PTT  
SK Innovation

**Level 4**  
Strategic assessment

**12 companies**

ConocoPhillips  
Eni  
Equinor\*  
JXTG  
Neste  
Occidental Petroleum  
OMV  
Repsol  
Royal Dutch Shell  
Suncor Energy\*  
Total  
Woodside Petroleum



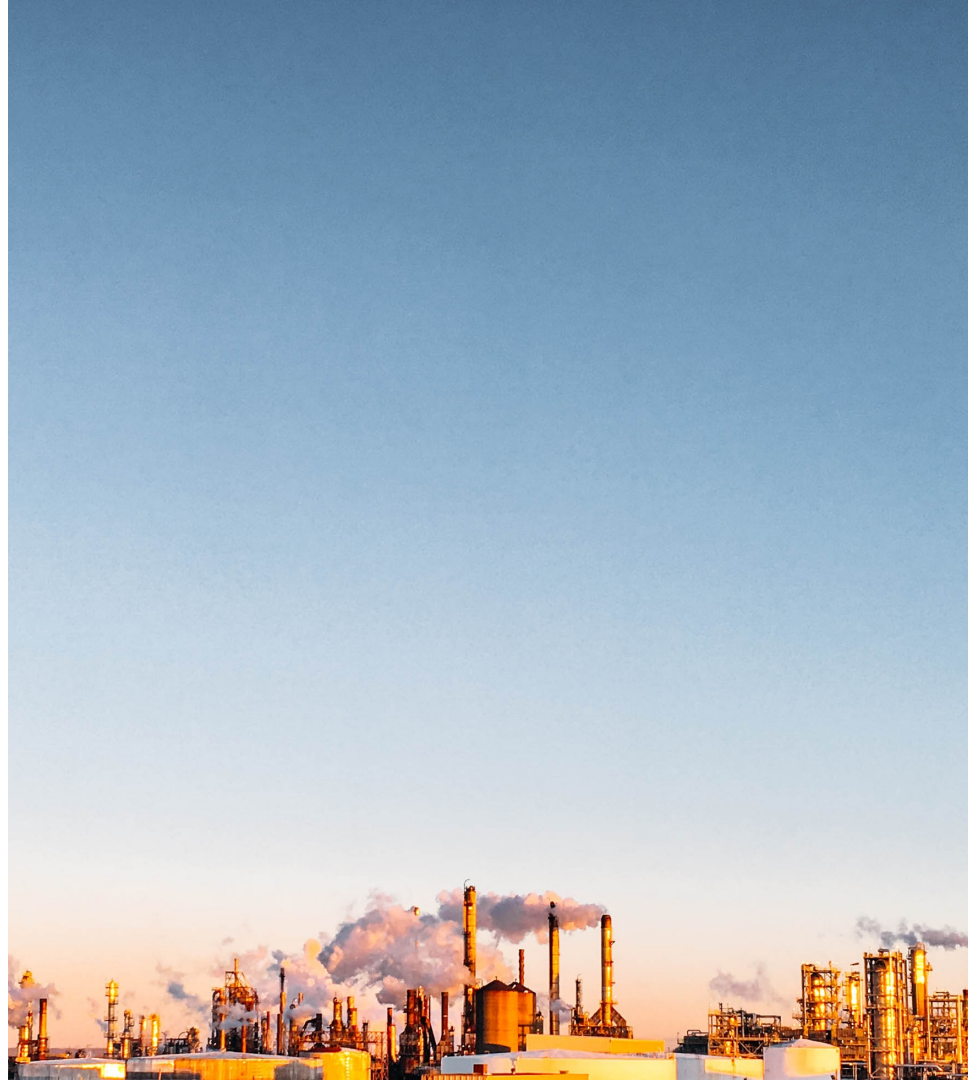
# Management Quality level

Oil and gas producers' average Management Quality score is 2.7, putting the average company in this sector more than halfway between "Building capacity" (Level 2) and "Integrating into operational decision making" (Level 3).

There is only one Level 0 company in the sector, unaware of (or not acknowledging) climate change as a business issue, and there are only six companies on Level 1. These numbers are similar to last year.

There are more oil and gas producers on Level 2 than any other level (18). Still, compared with last year's assessment, there are relatively fewer Level 2 companies (down from 47% to 36%) and relatively more Level 3 and 4 companies (up from 40% to 52%). We are seeing some progress.

There are two 4\* companies in the oil and gas sector, meaning they satisfy all 19 Management Quality criteria that are applicable: Equinor and Suncor Energy.



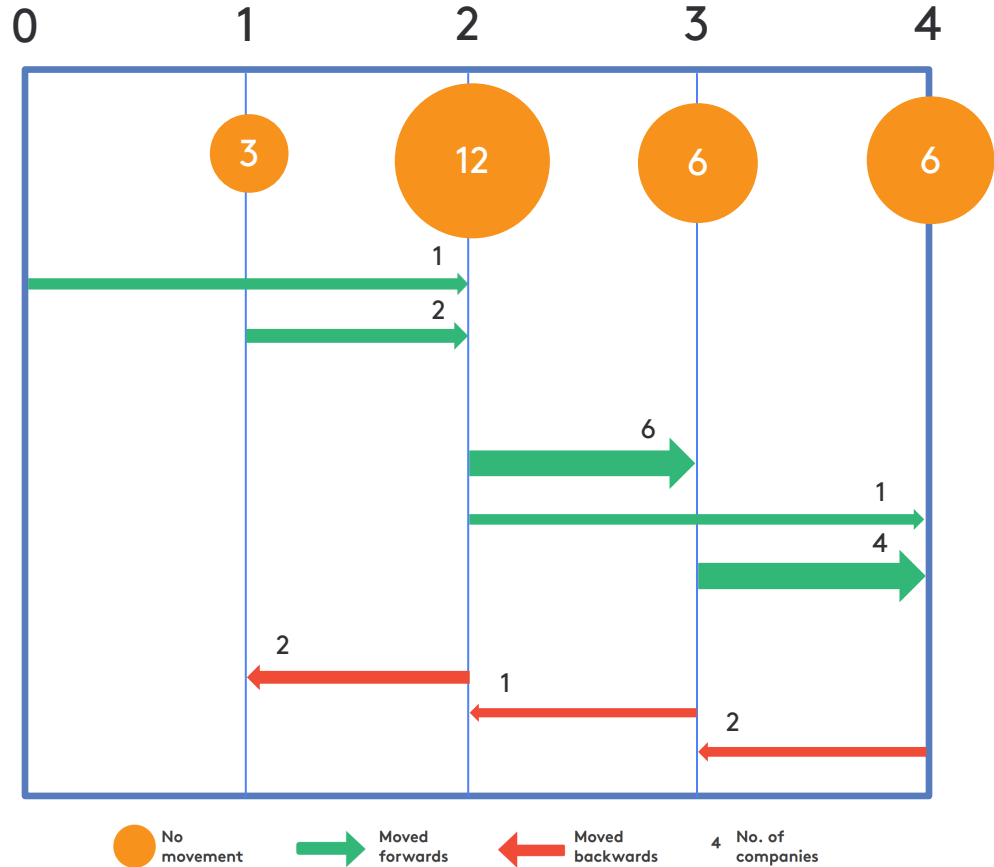
# Trends in Management Quality

The average Management Quality score of oil and gas producers has risen from 2.4 in 2018 to 2.7 this year.

This progress is echoed in trend data for the 46 companies that we also assessed in 2017/18. While 27 companies have stayed on the same level (including 6 companies that had already reached Level 4 in 2018), 14 companies have moved up at least one level. On the other hand, 5 companies have moved down at least one level.

Six companies have moved up from Level 2 to Level 3 by setting emissions reduction targets for the first time. Occidental Petroleum has moved up from Level 2 to 4.

Four companies have moved up from Level 3 to 4 and the main factors in this improvement have been apportioning board responsibility and supporting domestic and international climate mitigation.



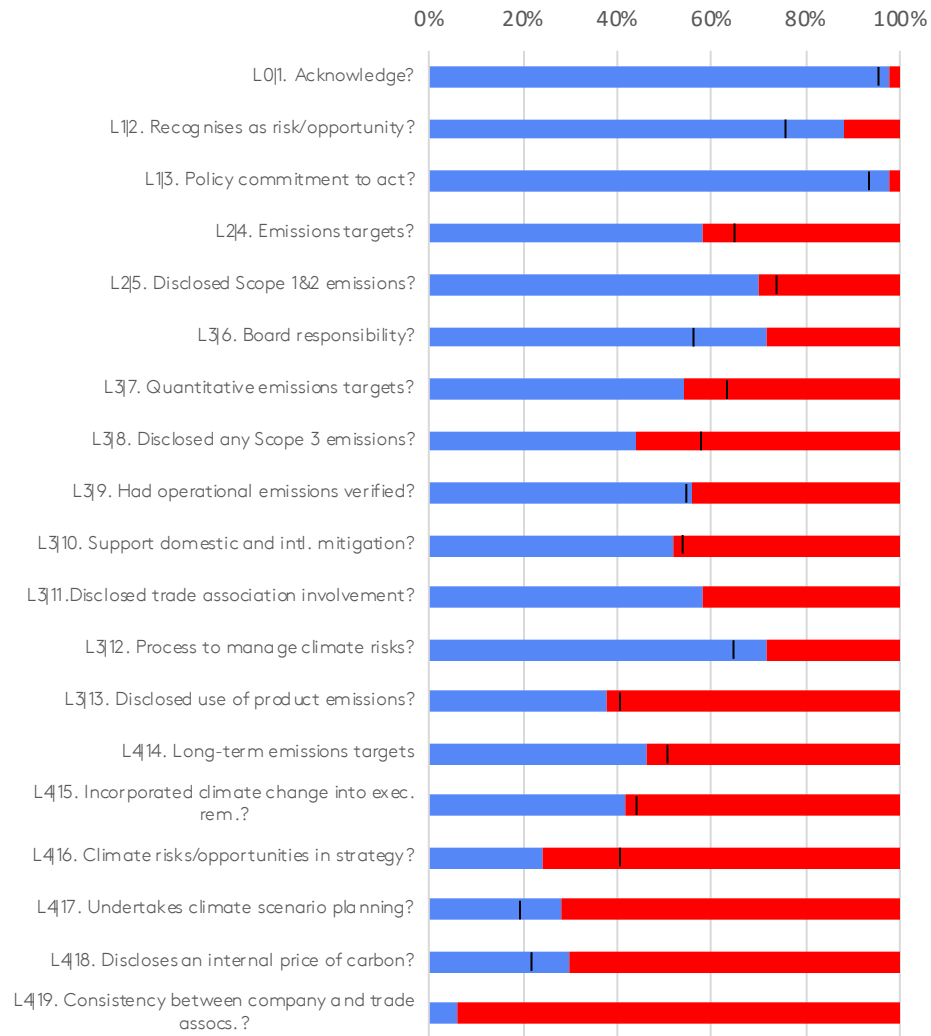


# Management Quality: indicator by indicator

Like other TPI sectors, we see more implementation by oil and gas producers of the basic carbon management practices, less of the more advanced practices.

Oil and gas producers out-perform the average TPI company on explicitly recognising climate change as a risk/opportunity, apportioning board responsibility for the company's climate change policy, managing climate-related risks, undertaking climate scenario planning, and internal carbon pricing.

Conversely oil and gas producers are weaker than average on emissions targets, disclosing Scope 3 emissions from use of sold products, and incorporating climate risks and opportunities in company strategy.



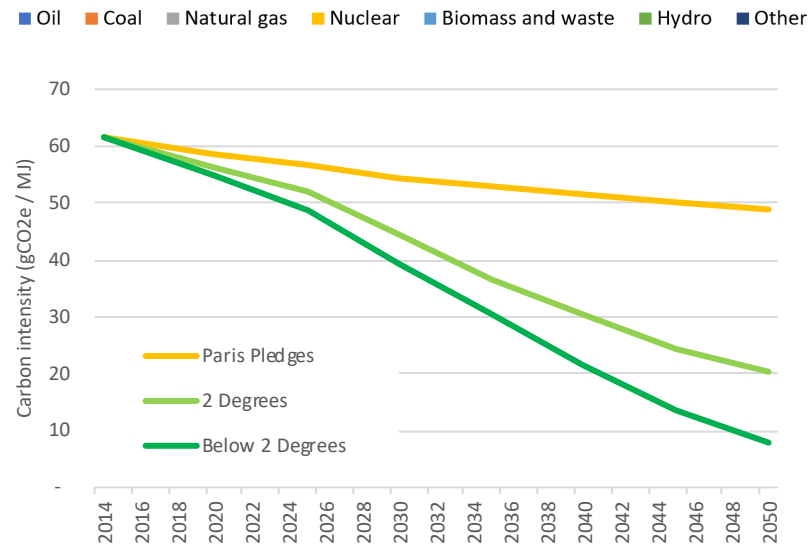
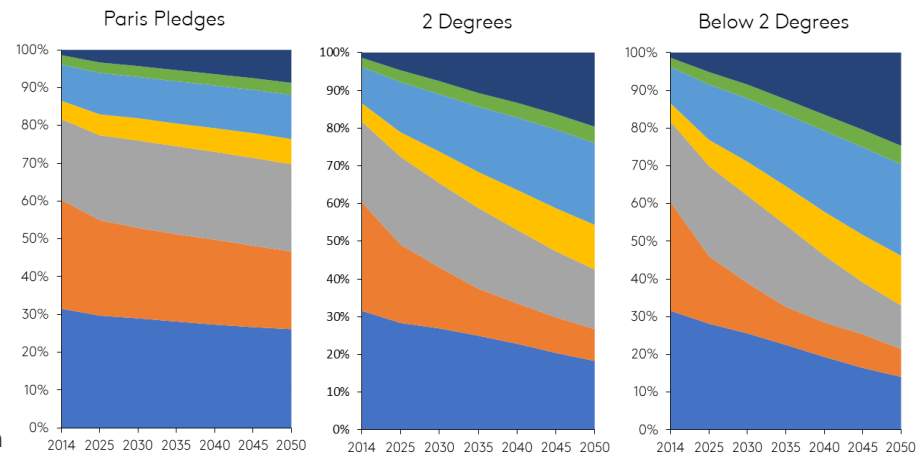
# Carbon Performance benchmarks for oil & gas

In the oil and gas sector, the vast majority of lifecycle emissions stem from use of sold products, i.e. burning oil and gas for energy in buildings, electricity, industry and transport.

We therefore include not only operational (Scope 1 and 2) emissions of oil and gas producers, but also Scope 3 emissions from use of their sold products. Because Scope 3 emissions disclosures are patchy, we have developed a method of calculating them based on companies' disclosed sales of oil and gas products.

We divide emissions by a measure of how much energy a company supplies to obtain our Carbon Performance metric for oil and gas, the carbon intensity of energy supply.

The low-carbon transition means a falling share of fossil fuels in energy supply (top right; IEA data), and therefore a falling carbon intensity of energy supply, as is evident from our benchmarks (bottom right). Our benchmarks now also include methane emissions, which must also decline to meet the Paris goals.

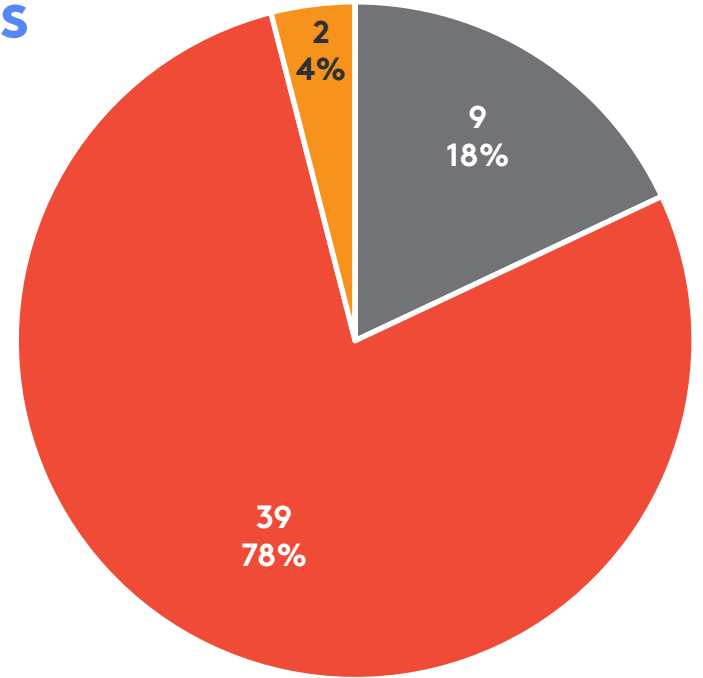


# Carbon Performance: alignment with the Paris Agreement benchmarks

Aligning with the Paris Agreement goals is a major challenge for the oil and gas sector and requires companies to address not only their operational emissions (e.g. from methane flaring), but also their downstream, Scope 3 emissions from use of sold products. Very few companies do so, however, and this largely explains why very few companies are aligned with the benchmarks.

Only 2 companies come into alignment before 2050; Shell (in 2039) and Repsol (in 2034), and this is only with the least ambitious Paris Pledges benchmark. Total are on a similar track, but do not quite reach alignment by the time their target expires (see next slide). No companies will be aligned with the 2°C or Below 2°C benchmarks.

It may not be in the narrow financial interest of all oil and gas producers to align with the Paris goals in this way. For example, a company may possess very low-cost reserves. Such companies can articulate their positioning with respect to the Paris goals in other ways, e.g. by where they sit on the industry's supply curve versus a carbon budget.



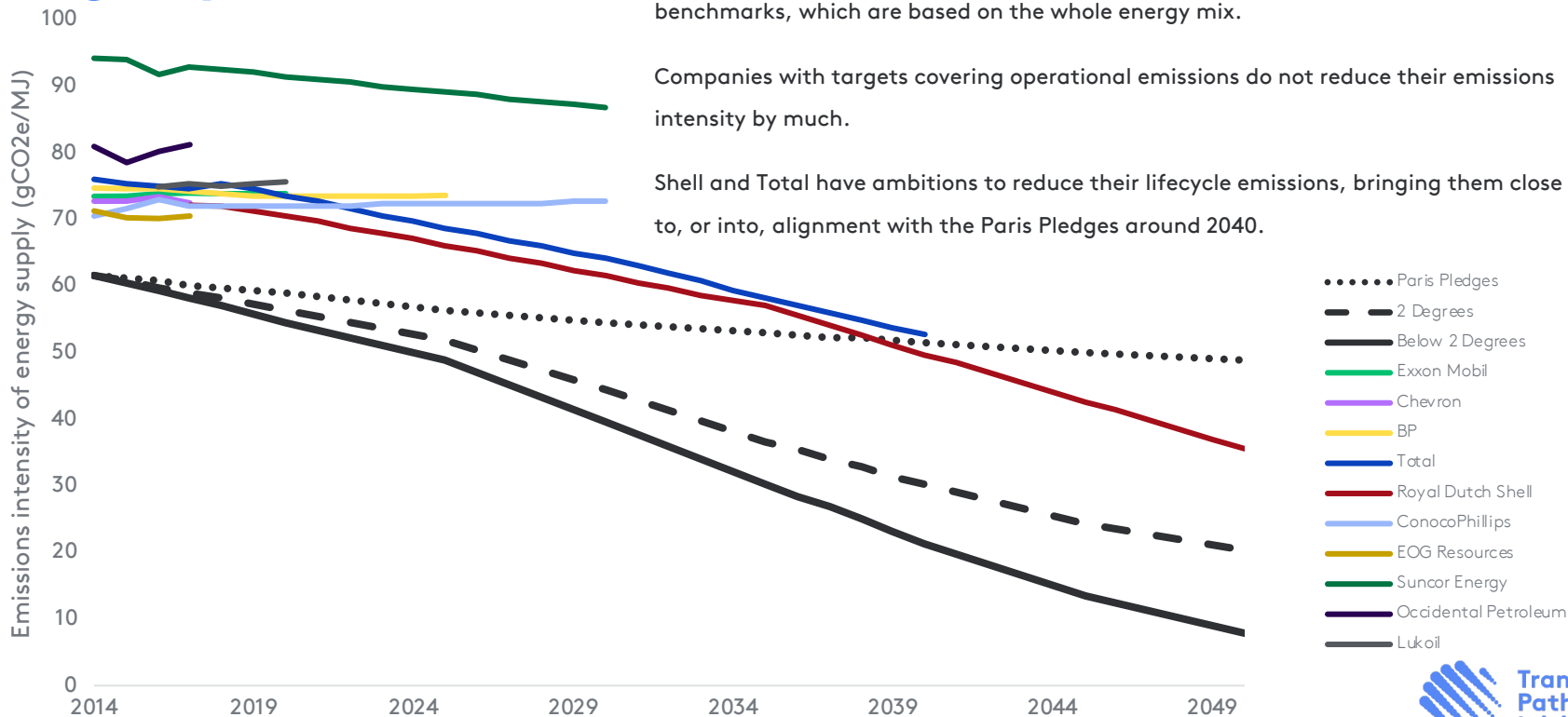
- No Disclosure
- Not Aligned
- Paris Pledges
- 2 Degrees
- Below 2 Degrees

# Carbon Performance: transition pathways for top oil and gas producers

With very few exceptions, oil and gas companies begin out of alignment with the benchmarks, which are based on the whole energy mix.

Companies with targets covering operational emissions do not reduce their emissions intensity by much.

Shell and Total have ambitions to reduce their lifecycle emissions, bringing them close to, or into, alignment with the Paris Pledges around 2040.



# Some key factors affecting companies' emissions intensity

Factor	Effect
Product mix	Natural gas is the least emissions-intensive fossil fuel. O&G producers with a business model that focuses on natural gas will have a lower emissions intensity, all else equal.
Scope 3 targets	Most O&G producers that set targets do so for methane emissions and/or operational emissions. However, Scope 3 emissions from use of sold products account for the majority of lifecycle emissions in this sector. Hence O&G producers aiming for a reduction in Scope 3 emissions from use of sold products can have a significantly lower emissions intensity, all else equal.
Production technologies	Some extraction methods are more emissions-intensive than others. For example, in-situ bitumen extraction is particularly dirty. Consequently companies using these methods, such as many of the Canadian companies in our sample, will have a higher emissions intensity. Further, companies with high methane leakage also have a higher emissions intensity, all else equal.



# Sector focus: coal mining



# 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

**3 companies**

Adaro Energy  
Shougang Fushan Resources  
Washington H. Soul Pattinson

**Level 1**  
Awareness

**11 companies**

ANTAM  
Bukit Asam  
Bumi  
China Coal  
Coal India  
DMCI Holdings  
Inner Mongolia Yitai Coal  
Jastrzebska Spolka Weglowa  
Semirara Mining and Power  
Whitehaven Coal  
Yanzhou Coal Mining

**Level 2**  
Building capacity

**1 company**

China Shenhua Energy

**Level 3**  
Integrating into operational decision making

**2 companies**

African Rainbow Minerals  
Banpu

**Level 4**  
Strategic assessment

**6 companies**

Anglo American  
BHP Billiton\*  
Exxaro Resources  
Glencore  
South32  
Vale



# Management Quality level

Our assessment of this sector includes the world's 23 largest mining companies by market cap. that are involved in mining coal. Our sample includes three types of company: (1) diversified mining companies that mine coal among other products; (2) pit-to-power/integrated companies that mine coal and burn it to generate electricity; (3) pure-play coal-mining companies that exclusively mine coal, but do not burn it. Rio Tinto is no longer included in this sector after its recent exit from coal.

Coal miners' average Management Quality score is just 1.9, putting the average company in this sector at the point of "Building capacity" (Level 2). Coal mining currently has the lowest average Management Quality of all sectors in the TPI database.

We see two distinct clusters of companies in this sector: leaders clustered on Levels 3 and 4, and laggards stuck on Levels 0 and 1. The leaders tend to be diversified and large-cap companies. BHP Billiton is a 4\* company satisfying all 19 criteria.





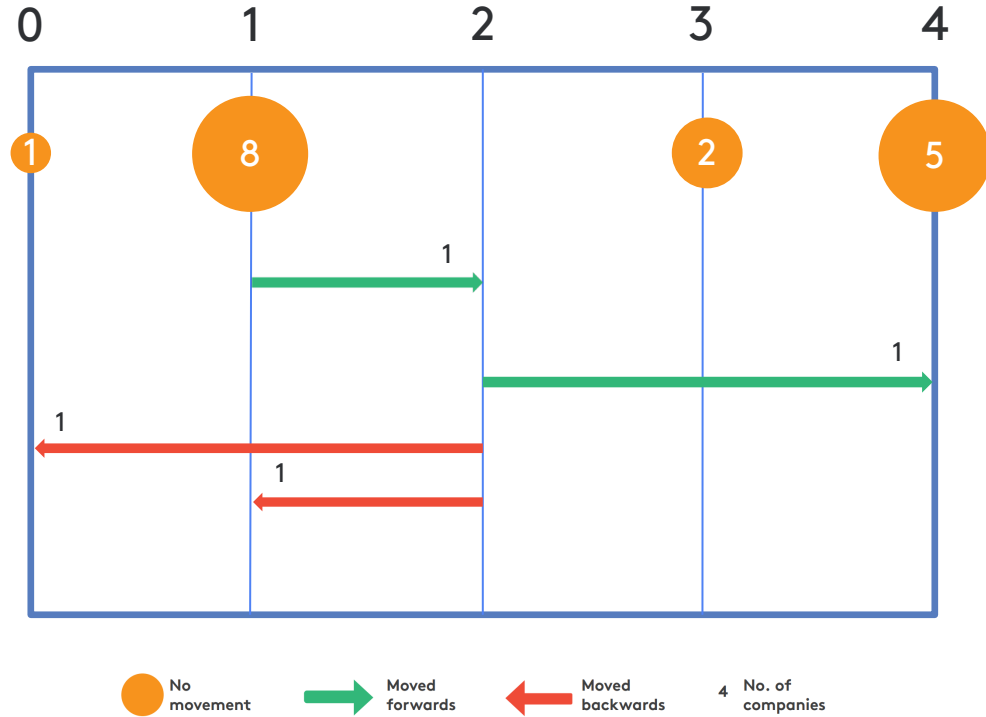
# Trends in Management Quality

The coal-mining sector's average Management Quality score actually fell from 2.2 in 2018 to 1.9 this year.

This comes despite four companies moving up at least one level from last year, while only two companies have moved down at least one level.

Therefore the reduction in the average Management Quality score is due to adding new companies with a low score (e.g. Washington Soul Pattinson and ANTAM), as well as the departure of Rio Tinto, which was on Level 4.

Eight companies on Level 1 in 2018 have not made any progress.

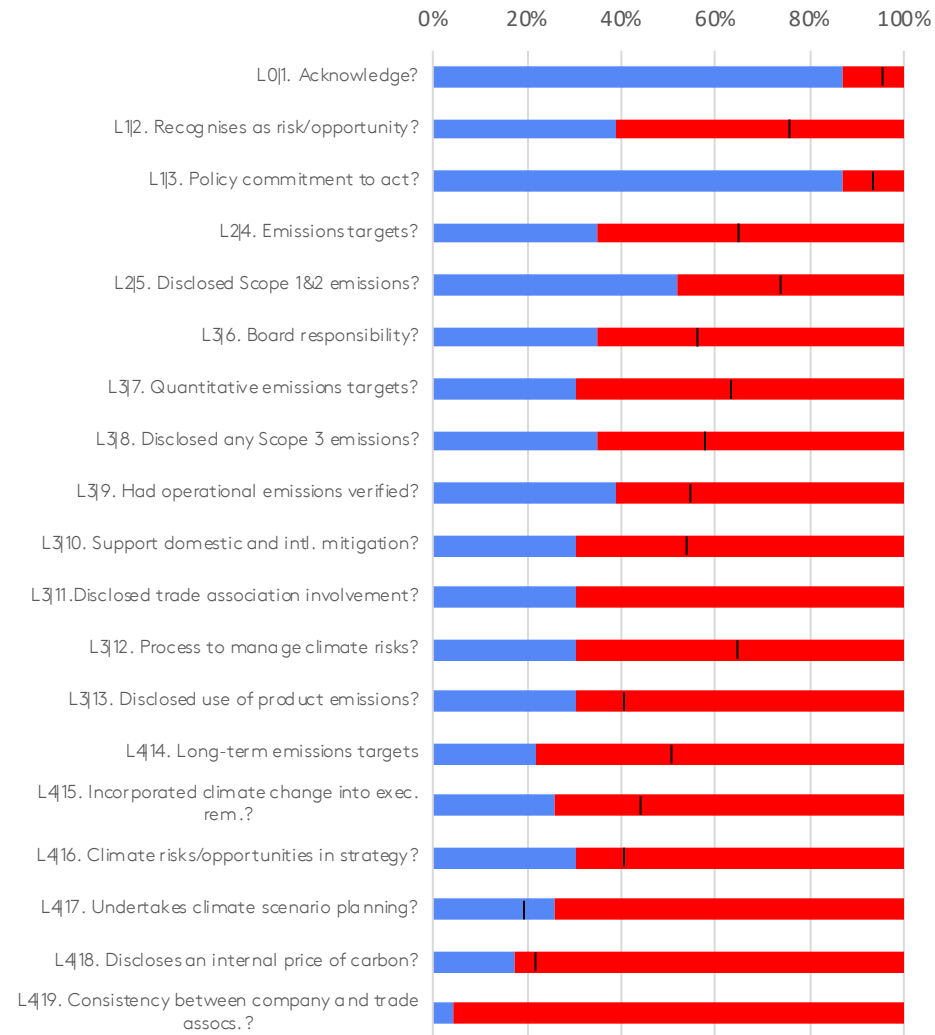


# Management Quality: indicator by indicator

In keeping with the sector's low average Management Quality level, companies involved in coal mining perform relatively poorly on almost all of TPI's individual Management Quality indicators.

This is particularly true for explicitly recognising climate change as a business risk/opportunity, setting emissions targets, disclosing emissions data and managing climate related-risks.

Driven by the leading, large-cap. diversified miners, the sector out-performs the TPI average on scenario planning.



# Sector focus: electricity utilities



# 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

**Level 1**  
Awareness

**Level 2**  
Building capacity

**Level 3**  
Integrating into operational decision making

**Level 4**  
Strategic assessment

**0 companies**

**9 companies**

- Ameren
- China Resources Power
- Chugoku
- CK Infrastructure
- Kyushu Elec Power
- NTPC
- PGE
- Power Assets
- Tenaga Nasional

**9 companies**

- Alliant Energy
- CenterPoint Energy
- CEZ
- Duke Energy
- Eergy
- Fortis
- Innogy
- NextEra Energy
- Vistra Energy

**20 companies**

- Chubu Electric Power
- CLP
- CMS Energy
- Con Edison
- Dominion Energy
- Edison International
- Eversource Energy
- Firstenergy
- Kansai Elec Power
- KEPCO
- Origin Energy
- PPL
- RWE
- Southern Company
- TEPCO
- Terna
- Tohoku Elec Power
- Vectren
- WEC Energy Group
- XCEL Energy

**24 companies**

- AES
- AGL Energy
- American Electric Power
- DTE Energy
- EDF
- Electric Power Development
- Endesa
- Enel
- Engie
- Entergy
- E.ON\*
- Exelon
- Fortum
- Iberdrola
- National Grid
- NRG Energy
- Orsted
- PG&E
- Pinnacle West Capital
- Public Service Enterprise Group
- Red Electrica
- Sempra Energy
- SSE
- Uniper



# Management Quality level

Electricity utilities' average Management Quality score is 3.0 (up marginally from 2.9 last year), putting the average company on Level 3, integrating climate change into operational decision making. Most electricity utilities have disclosed their operational emissions and set emissions targets by now.

The electricity sector is the best-performing large sector in the TPI database at present. More than 70% of companies are on Level 3 or 4.

There are no Level 0 companies. Most of the Level 1 companies are based in Asia. Most of the Level 2 utilities are based in the US. There are 24 utilities on Level 4 (39%) and Europe and the US are well represented on this top level.

E.ON is the only 4\* electricity utility.

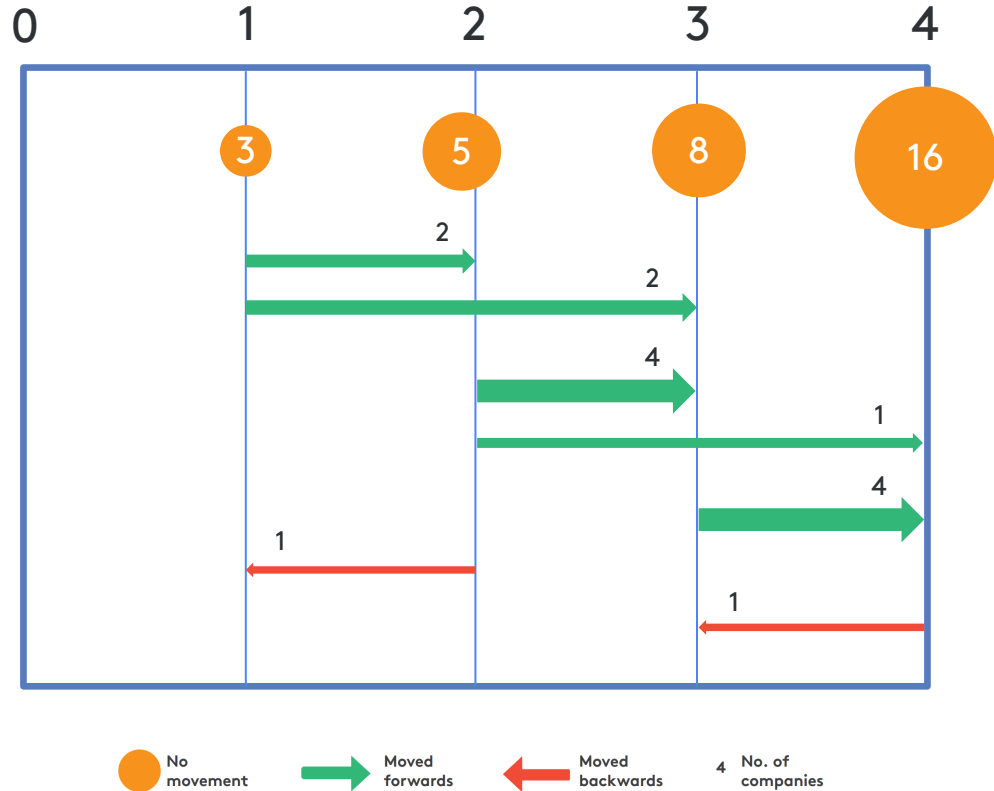


# Trends in Management Quality

We have trend data on 47 electricity utilities, of which:

- 16 companies on Levels 1-3 have not moved since last assessed, and a further 16 companies that had already reached Level 4 have stayed there;
- 13 companies have moved up at least one level;
- 2 companies have moved down one level.

At 42% of companies with trend data, the share progressing up TPI's Management Quality framework is higher in electricity than in the rest of the energy sector. The fact that the sector's average Management Quality score only increases fractionally reflects us increasing the coverage of companies, bringing in small- and mid-cap. utilities that tend to perform less well.



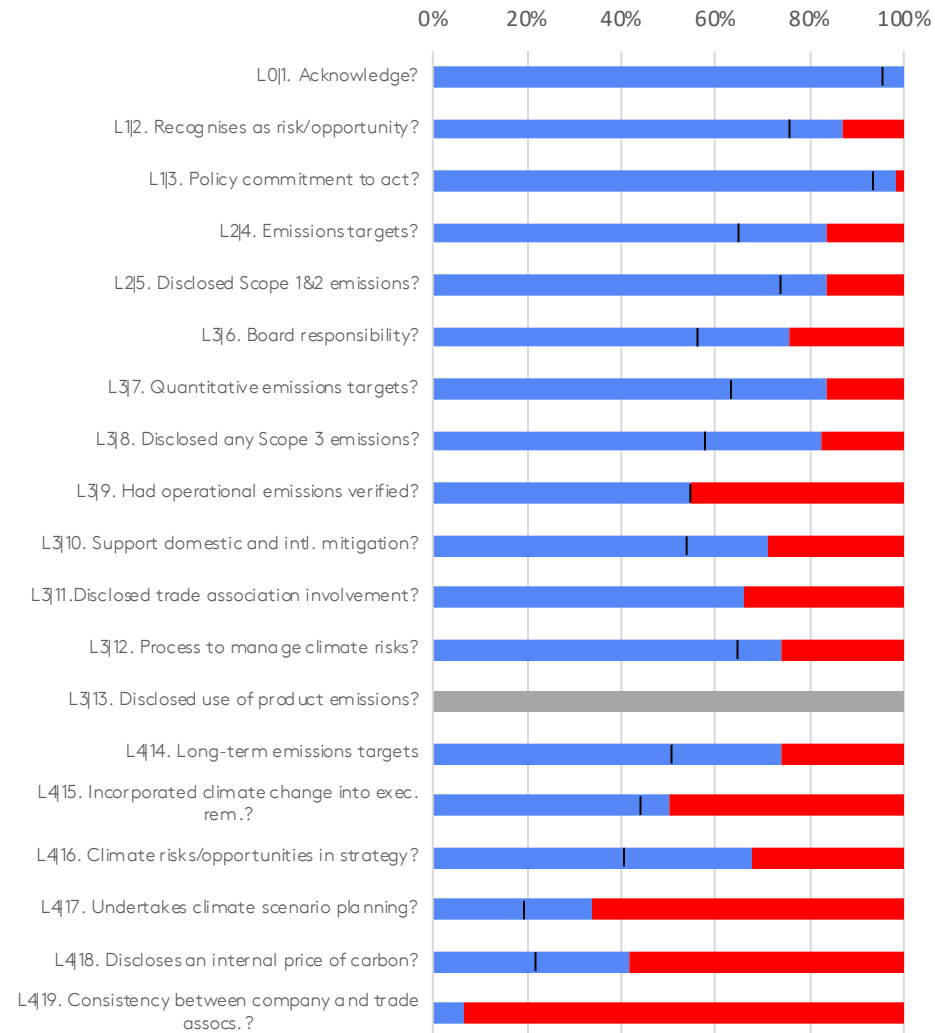
# Management Quality: indicator by indicator

In keeping with other TPI sectors, electricity utilities are stronger on the basic carbon management practices and weaker on the more advanced practices.

However, the share of companies assessed as Yes is higher than average for almost all indicators:

- More than 80% of utilities satisfy indicators 1-5, 7 and 8.
- Utilities are particularly strong on target-setting. Almost 75% of companies have set a long-term emissions target, far in excess of the share of all TPI companies.

Areas for improvement include verification of operational emissions data, as well as incorporating climate change into executive remuneration.



# Carbon Performance: alignment with the Paris Agreement benchmarks

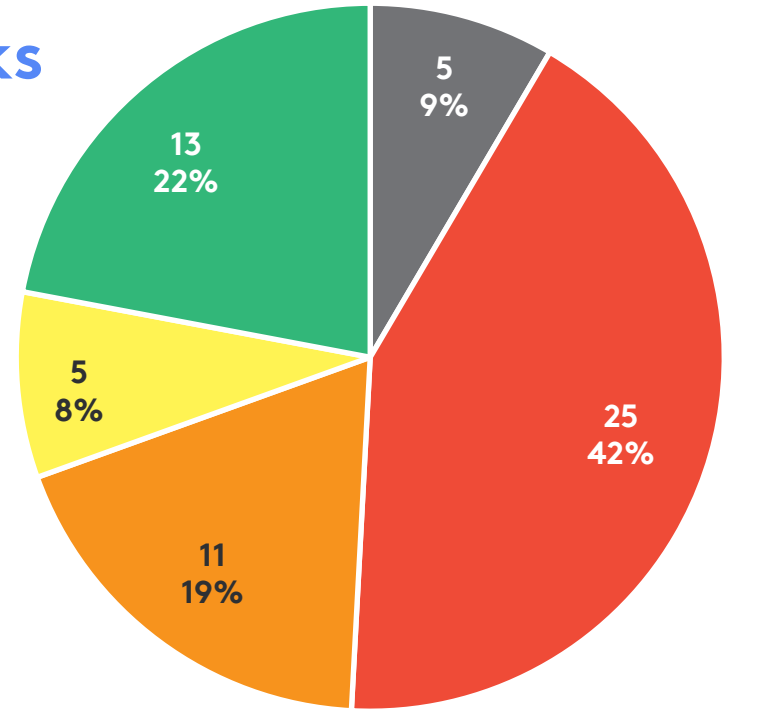
Like Management Quality, Carbon Performance in the electricity sector is relatively strong.

Almost half of electricity utilities are projected to be aligned with one or more of the Paris Agreement benchmarks by 2030. More than one in five companies will be aligned with the most ambitious Below 2°C benchmark.

These shares of companies aligned with Paris are in fact slightly lower than last year, which is attributable to expanding coverage of the sector and including smaller companies that tend not to be aligned.

Some companies, such as EDF, E.ON, Exelon, Innogy, Ørsted and PG&E, are projected to reach nearly zero carbon by 2030.

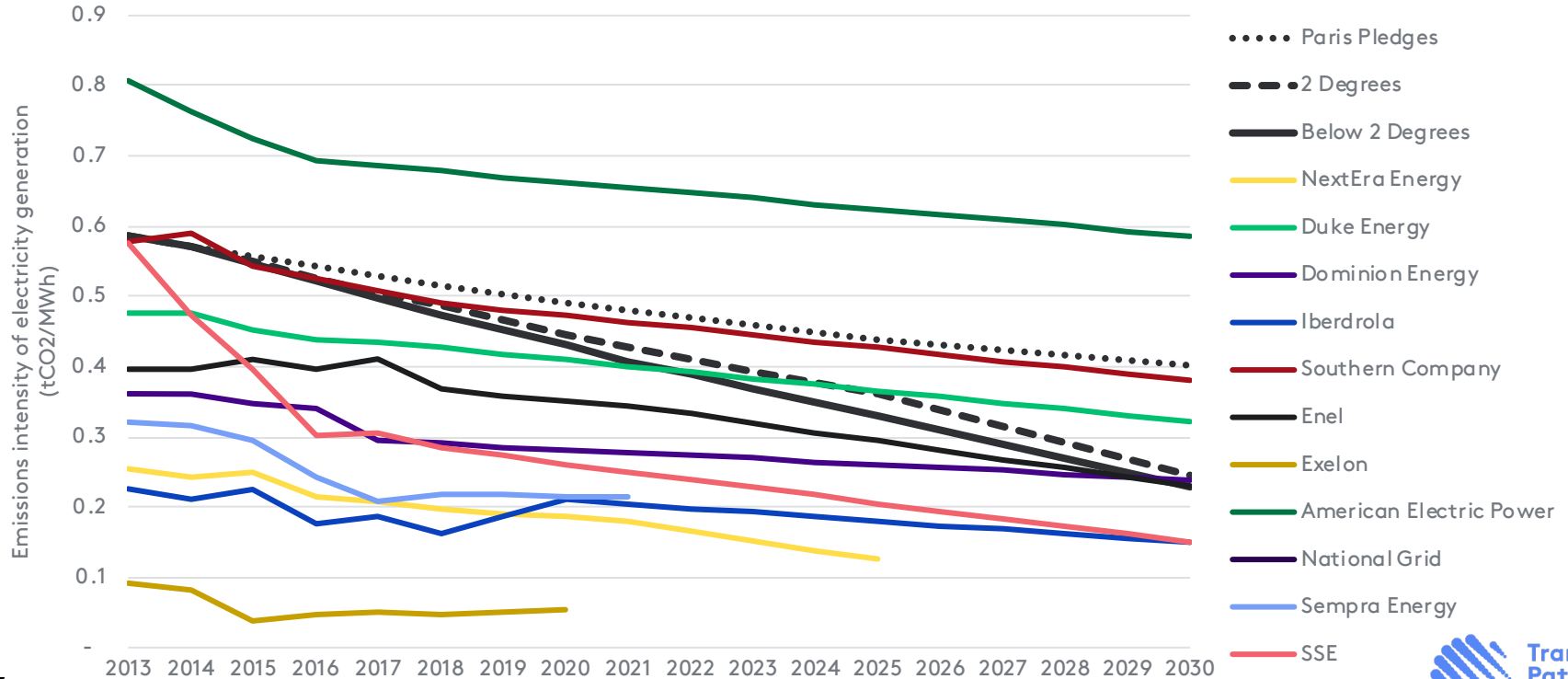
Still, one in two companies is not aligned with the Paris Pledges or has insufficient disclosure to have its Carbon Performance assessed.



- No Disclosure
- Not Aligned
- Paris Pledges
- 2 Degrees
- Below 2 Degrees



# Carbon Performance: transition pathways for large electricity utilities



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