

# The oil industry: is it up to the climate challenge?

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## Foreword.

Using the Carbon Impact Analytics (CIA) methodology, Carbon4 Finance established a ranking of companies within the O&G industry depending on their level of exposure to transition risks.

Based on our data and analysis, we observed historical trends in GHG absolute emissions (Scope 1, 2 & 3) and appreciated the strategies implemented to align – or not – with decarbonation objectives for the world economy.

This briefing note summarizes the results of the CIA (Carbon Impact Analytics) campaign led between June and September 2020 on a sample of a hundred companies of the Oil & Gas (O&G) industry. The CIA methodology aims at measuring stakeholders' exposure to transition risks with a rating scheme (from A+ to E-) and sector-specific KPIs.

# Key messages.

## Scope 3 emissions are the most important, but rarely reported

- **The calculated Scope 3 emissions represent 85% of the total emissions. In other words, if the downstream emissions from a stakeholder's value chain in a sector are not taken into account, then the bulk of its carbon footprint is ignored.**
- Scope 3 emissions are of crucial importance for appreciating transition risk, yet only 1 in 4 companies report them. Not that calculating Scope 3 emissions is easy - collecting the necessary data is indeed long and tedious - but it does show that awareness of the real impact is still too slow among the O&G companies, or that there is a deliberate desire to minimize this impact.
- Moreover, calculation methods vary from one stakeholder to another, making comparison difficult.

## Absolute emissions are on the rise

- In our sample, 1 in 3 companies saw their absolute emissions increase in 2019 compared to 2014.
- The decreases observed are unlikely to be the result of a desire to decarbonise. These reductions are mainly linked to the search for short-term profitability and financial stability, or to structural changes in the markets in which the players operate (variation in the price of crude oil - brent).
- In fact, the announced reduction targets will require real efforts if we hope to achieve the Paris Agreement targets.
- while companies announce vigorous efforts to decarbonize themselves, monitoring absolute emissions over longer and longer periods of time will certainly help to distinguish real efforts from the strokes of luck.

## The major stakeholders are still very carbon-intensive

- Apart from Eni, which has historically been involved in gas, a high carbon intensity was calculated for all the major oil companies.
- The largest stakeholders are not the least exposed to the transition risk, i.e. they remain highly dependent on oil and are not sufficiently involved in natural gas.



## Low-carbon alternatives favoured in corporate strategies

- Renewable electricity generation, biofuel and petrochemical manufacturing: many stakeholders are moving towards these low-carbon activities to diversify their sources of income.



## Promotion of ambitious but vague reduction targets

- The variety of terms used in company announcements makes comparison difficult and too few companies commit to reducing their absolute emissions.
- Reduction targets for Scope 3 emissions remain too scarce, while those covering Scope 1&2 emissions are being set at a wider scale.
- Although companies announced ambitious targets, the decrease in absolute emissions resulting from their implementation would not allow for this industry to contribute to a downward trajectory in GHG emissions limiting temperature rise to 2°C by 2100, which is one of the objectives of the Paris Agreement.
- Fact of fiction ? considering the sector upward trend in absolute Scope 3 emissions, we remain doubtful of the companies' willingness to reduce GHG emissions linked to the use of their products.

Due to the high environmental stakes surrounding the industry, it has historically been followed by many third parties (NGOs, institutional groups, etc.). Globally, it is generally agreed that in the long term, despite the inclusion of Scope 3 emissions in their transition strategy, the major stakeholders have ambitions that are not in line with the Paris agreements.



### **Oil Change International, *Big Oil Reality Check — Assessing Oil And Gas Climate Plans*<sup>1</sup>**

- **Key message:** none of the "big oil" commitments reviewed are ambitious enough - not even BP, which has committed to reduce production and halt exploration.



### **Transition Pathway Initiative, *Carbon Performance of European Integrated Oil & Gas Companies: Briefing Paper*<sup>2</sup>**

- **Key message :** the commitments made under Scope 3 are not ambitious enough for an alignment with the 2°C scenario. Shell and Eni stand out as the most ambitious companies in the sector.

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1. <http://priceofoil.org/2020/09/23/big-oil-reality-check/>  
2. <https://www.transitionpathwayinitiative.org/publications/58.pdf?type=Publication>

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# 1 Our methodology

The CIA methodology makes it possible to model the carbon footprint of each stakeholder's different activities; the overall rating is a result of the weighted total of these different footprints.

For example, for a company involved in oil, power generation, and petrochemicals, each segment is analysed separately, and the overall score for that stakeholder will be the weighted sum of the scores obtained.

**The following section presents the CIA methodology applied to Oil & Gas activities only.**

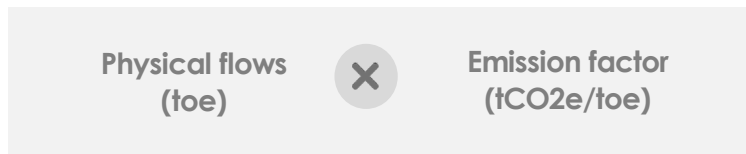


# 1.1 Calculation of induced emissions

## Scope 1&2

For each activity, an emission factor is associated with a physical volume that is either published by the stakeholder (primary data) or estimated by the analyst if the information is not directly available (secondary data). These emission factors are updated annually, during the methodological review of the sector concerned.

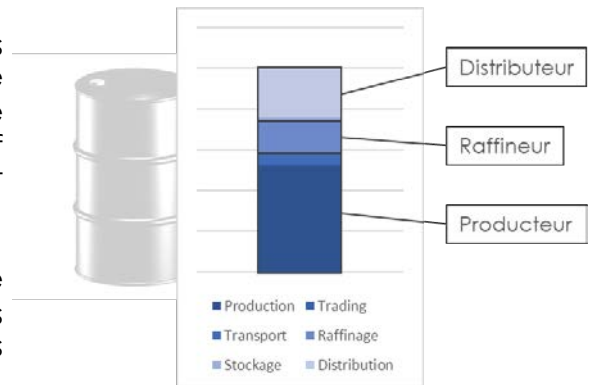
### Induced emissions scope 1 et 2 (tCO2e) :



## Scope 3

Scope 3 emissions calculated for O&G activities correspond only to downstream emissions related to the combustion of the products managed by the stakeholder. Based on a study of added value, a share of the emissions linked to the combustion of the sold product at the end of the chain is then allocated.

The emissions resulting from the combustion of one tonne of oil equivalent extracted from the ground are thus distributed to all the stakeholders who contributed to its delivery to the market, from production to distribution.



For example, for the same volume, an independent producer will have higher Scope 3 emissions than an independent refiner, since extraction is the step that adds the most value. This approach also avoids double counting in the case of an integrated stakeholder.

### Induced emissions scope 3 (tCO2e) :



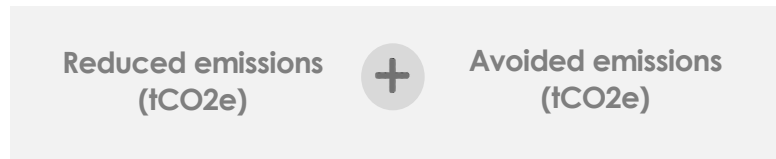
This consideration of the value added by Scope 3 emissions that are calculated by C4F is an important methodological contribution by CIA compared to the very inhomogeneous emissions reported by companies.

# 1.2 Calculation of emission savings

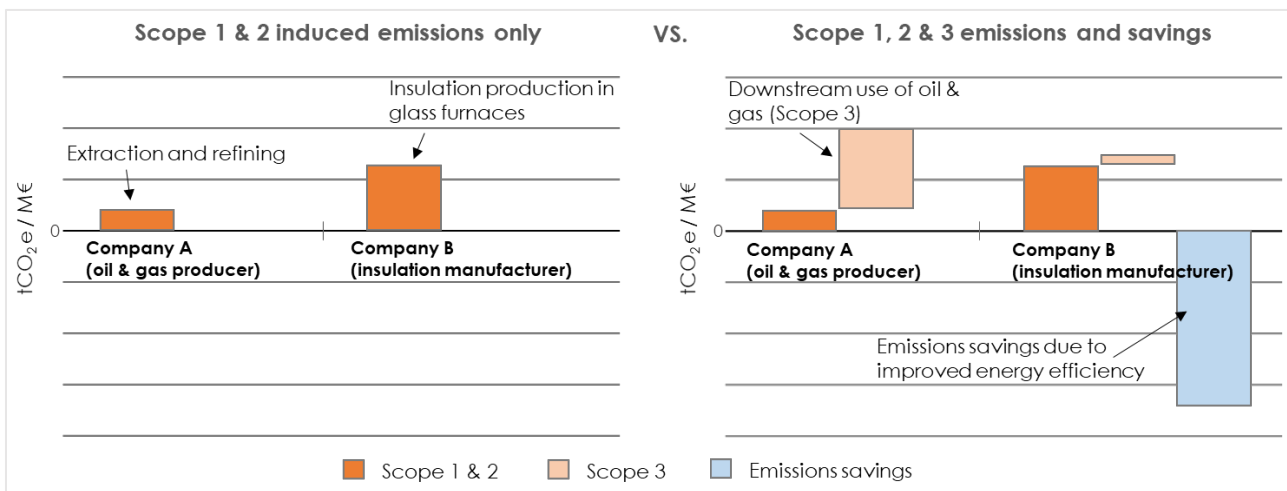
Emission savings measure the speed at which the company is moving to mitigate its transition risk and carbon impact. On the one hand because of its reduction efforts: these are "reduced emissions", where the performance of a stakeholder is tracked over a given period (for example, reduced emissions because of investment in less polluting industrial processes).

On the other hand, because of the positioning of its products and services sold: these are the "avoided emissions", this is where the observed situation is compared to a reference scenario (for example the avoided emissions from the use of biofuel without deforestation compared to petroleum-based fuel).

**Emission savings (tCO<sub>2</sub>e) :**



The graph below illustrates the importance of the saved emissions in the overall assessment of a stakeholder's impact.

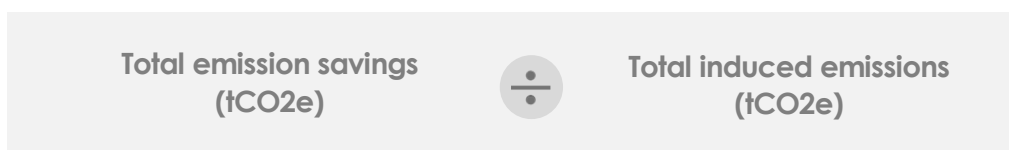


For the O&G sector, reduced emissions are calculated based on the evolution of the carbon intensity of the stakeholder over the last 5 years - between 2014 and 2019 - and only considering the Scope 1&2 emissions. If our calculations show a reduction in this intensity over the last 5 years, this means that the stakeholder has improved its energy efficiency within the scope of its operations and is therefore allocated reduced emissions.

### 1.3 Carbon Impact Ratio (CIR)

In order to be able to compare the efforts of one company to another, C4F has developed the **Carbon Impact Ratio (CIR)** indicator, which expresses emission savings (here only reduced since there are no avoided emissions) as a share of the emissions induced by the company's activities.

**Carbon Impact Ratio :**



For example, a company with a CIR of 1.2 has emission savings 1.2 times higher than its induced emissions. In other words, for every tCO<sub>2</sub>e emitted into the atmosphere, the company saves 1.2 tCO<sub>2</sub>e over the year of analysis.



## 1.4 Calculation of the sector rating

The sector rating for O&G activities corresponds to the weighted sum of 3 indicators ranging from 1 (best possible performance) to 15 (worst possible performance):

- **Absolute past performance – historical view**
- **Relative current performance - a view of the work in progress**
- **Qualitative analysis – a view of its future performance**

### **Absolute past performance**

In order to assess the company's past performance, the change in its absolute emissions (**Scope 1, 2 and 3**) between 2014 and 2019 is calculated using an equivalent method and a comparable scope (i.e. including only the O&G activities presented above). This evolution is then compared with the required reduction in GHG emissions between 2020 and 2025 according to the scenarios published by the IEA, all sectors combined.

As companies in the sector are announcing increasingly ambitious emission reduction targets, our indicator on past performance already allows us to compare its stated ambitions with historical data and, later on, compare the actual decarbonation of the stakeholders with their targets.

### **Relative current performance**

In order to compare the O&G sector stakeholders with each other, the **Corporate Carbon Intensity (CCI)** is calculated, a physical quantity expressed in kgCO<sub>2</sub>e/toe and which only concerns the emissions linked to the combustion of the products managed by the company, i.e. Scope 3 - as opposed to the intensity used to calculate the reduced emissions, which only concerns Scope 1&2 emissions.

### **Qualitative analysis**

The qualitative analysis assesses whether the transition risk has been considered in the strategy implemented by the stakeholder. It is based on 5 criteria:

1. Strategic vision of the stakeholder
2. Transitional investments
3. Emission reduction targets, Scope 1&2
4. Emission reduction targets, Scope 3
5. Governance of energy and climate issues

### **Final score**

The weighted sum of the indicators gives a sector score ranging from 1 to 15.



Although O&G companies are inherently exposed to transition risk, the sector score helps to make a distinction between them, by quantifying awareness, measuring their efforts, and benchmarking their ambitions. In an economy that is moving towards decarbonation and independence away from fossil fuel resources, those that are the least exposed to transition risk will logically be the least affected by systemic change.

# 2

## Carbon4 Finance's results

This briefing note summarizes the results of the CIA (Carbon Impact Analytics) campaign led between June and September 2020 on a sample of a hundred companies of the Oil & Gas (O&G) industry. The CIA methodology aims at measuring stakeholders' exposure to transition risks with a rating scheme (from A+ to E-) and sector-specific KPIs.



## 2.1 Our sample

The Oil & Gas global industry represents around 1,300 companies for a total market capitalisation of 4,933 billion euros<sup>1</sup>, of which 34% is attributable to the Saudi Arabian Oil Company (hereafter Saudi Aramco) alone - one of the few NOCs listed on the stock exchange.

The companies covered by CIA represent around **85%** of this total capitalisation, which includes a sample of **102 stocks** including the 20 largest capitalisations in the sector - except for Novatek.

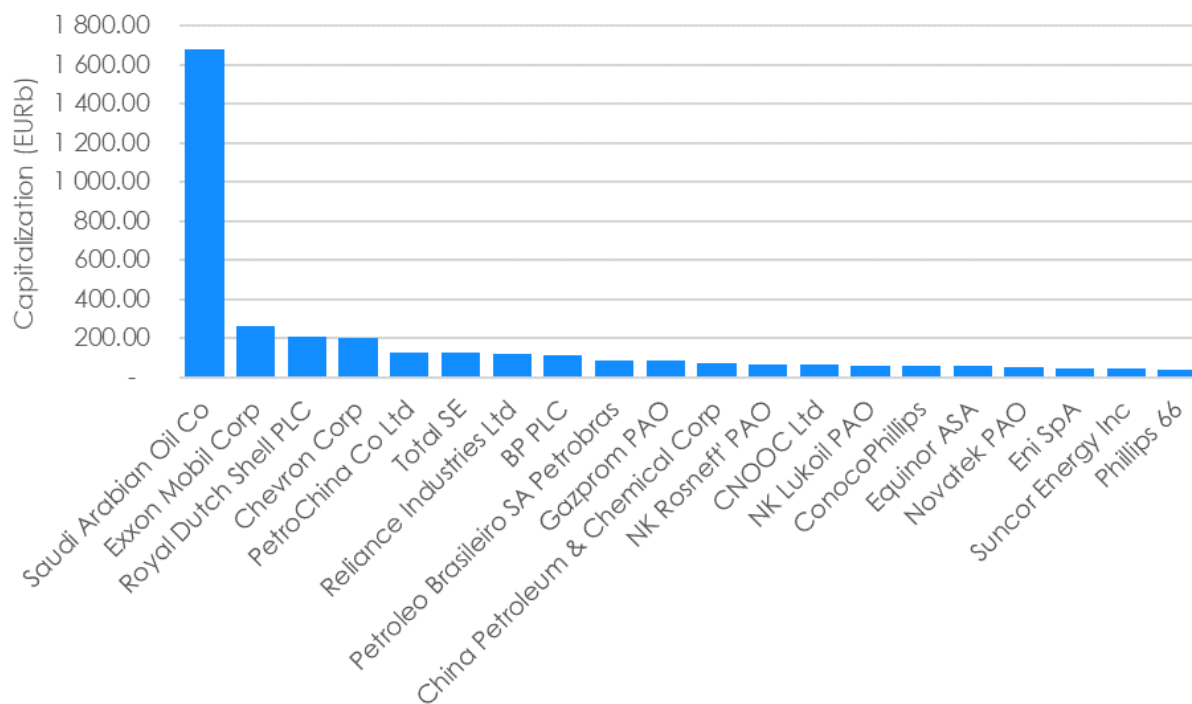


Figure 1 - The 20 largest companies in the global O&G industry, by market capitalisation (in billions of euros)

## 2.2 Ranking of the most emitting companies

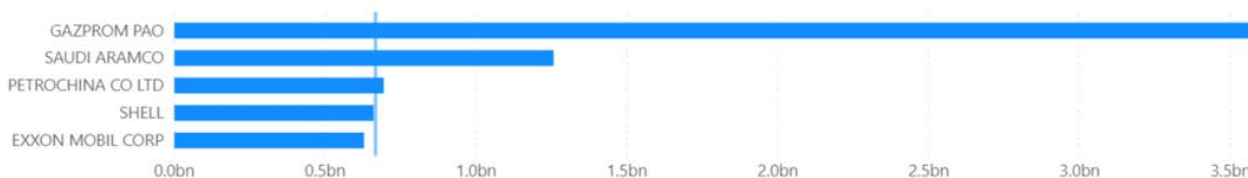


Figure 2 – Top 5 polluters, Scope 3 (milliards de tCO2e)

1. Refinitiv Eikon datas 31/12/2019

In terms of absolute emissions, the stakeholder for whom the largest amount of GHG emissions were calculated for downstream is Gazprom, the Russian gas giant. Indeed, with **3,574 million tCO<sub>2</sub>e**, its Scope 3 emissions account for **nearly 30%** of the sample's Scope 3 emissions. It should be noted that Gazprom is responsible for around 12% of the world's natural gas production (1.40% for oil) and owns numerous gas pipelines in Europe.

It is followed by major NOCs such as Saudi Aramco, Petrochina (listed as part of the CNPC, China's largest oil group) or Petrobras, but also the big oil companies such as Royal Dutch Shell, Exxon, BP, Chevron, Total and Eni.

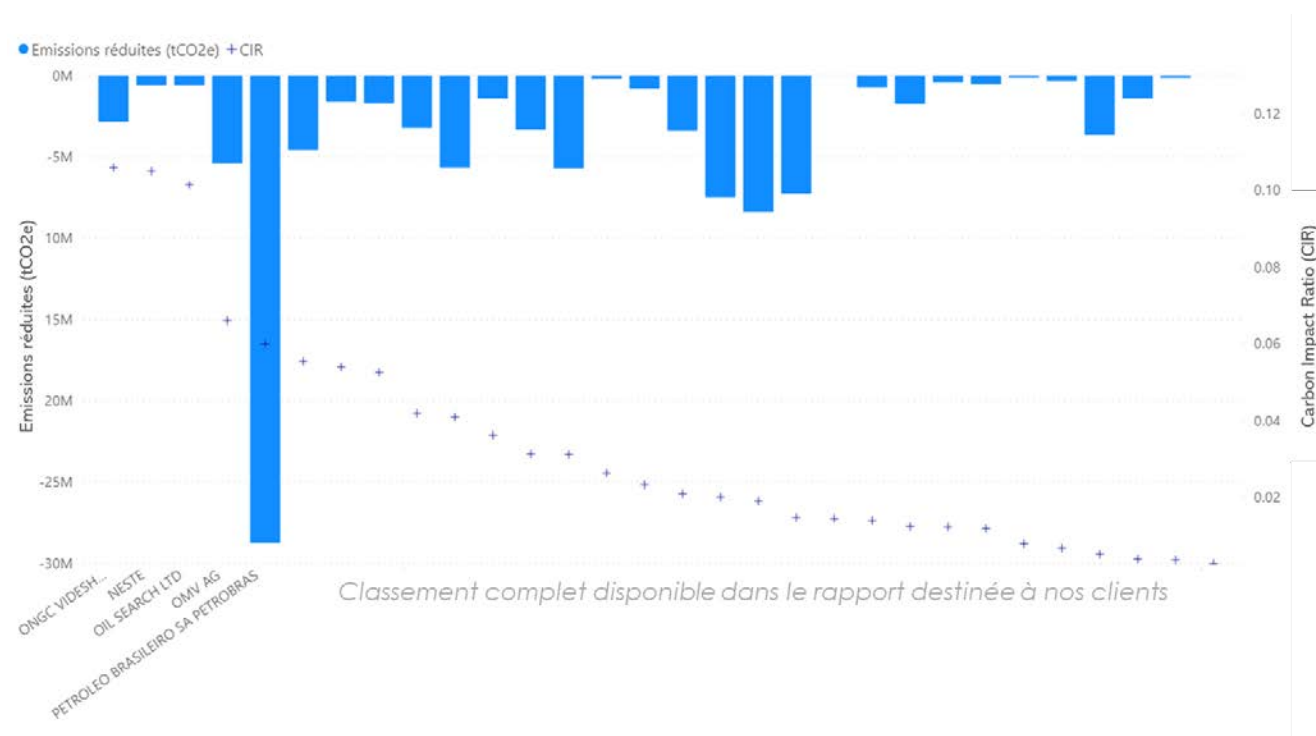
These 15 companies account for **more than 80%** of the total Scope 3 emissions in the sample.

## 2.3 Companies that have begun their transition : Avoided emissions and the CIR

### Focus on Petrobras

Based on our calculations using data published by the stakeholder, **Petrobras** is the company that has achieved the greatest reduction in its operational emissions over the last 5 years, with a 34% reduction in its carbon intensity between 2014 and 2019.

Nevertheless, by taking into account Petrobras' induced emissions, we obtain a [CIR](#) of 0.06, i.e. the reduced emissions compared to 2014 levels represent only 6% of the induced emissions for the year 2019.



## Focus on ONGC Videsh

With a CIR of 0.11, ONGC Videsh is the stakeholder which has the best ratio between what it emits and what it has reduced. While its production volume increased by a factor of 1.77 between 2014 and 2019, its emissions reported in Scope 1 and 2 fell by 36.40%, owing in particular to a significant reduction in the flaring of associated petroleum gases (APG) within its production activities.

Rather than burning them - which emits CO<sub>2</sub> into the atmosphere - ONGC recovers them and transforms them into value-added products, such as liquefied petroleum gas (LPG) or condensates. These products will still be subject to end-of-pipe combustion, but these emissions fall under ONGC's downstream Scope 3.

**The Indian company has therefore moved its operational emissions (Scope 1&2) to its indirect emissions (downstream Scope 3), resulting in significant reduced emissions.**

## 2.4 A look at past emissions

### A) Increase in absolute emissions

The vast majority of the 40 companies with the largest volumes in 2019 increased their absolute emissions compared to 2014.



**Figure 3 – Change in absolute emissions (%), 2019 vs. 2014**

Due to readability, the companies that have more than doubled their emissions are not included in this graph.

Among the non-standard increases, the North American midstream stakeholder, **Marathon Petroleum Corp.** came out on top with +230%. This can be explained by the fact that the company has generally increased its managed volumes (up to x2 in its transport and energy supply activities), but it also started a new natural gas processing activity in 2015, following the acquisition of MarkWest.

## Focus on Repsol

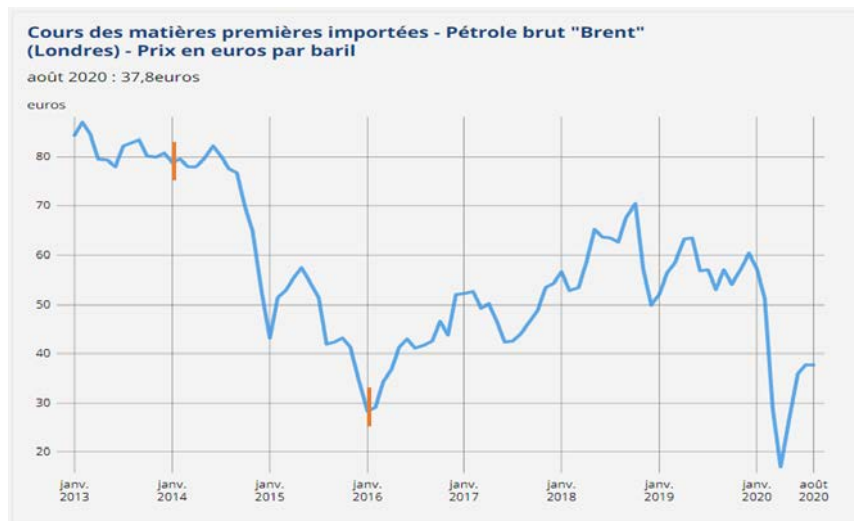
Among the major stakeholders, Repsol increased its absolute emissions by +47.85%, which is explained by the acquisition at the end of 2014 of Talisman, a Canadian oil company. This acquisition resulted in an increase in production volumes (x2), refining activity (x1.11) and retail sales (x1.15). Note that within its production mix, the share of gas increased slightly from 62% to 64%.

It should be recalled that in 2019, Repsol committed to reducing the energy intensity of its products (Scope 1, 2 and 3) by 40% by 2040 (compared with 2010). While the stated ambition is commendable, it must be realised that in order to hope to achieve the objectives of the Paris agreement and limit global warming to 2°C by 2100 compared with pre-industrial levels, absolute accounts for as much as intensity – if not more. Here, however, Repsol's historical trend does not suggest that it is prepared to reduce its absolute emissions.

And it is not the only one: **to a greater or lesser degree, all the majors have seen their absolute emissions increase between 2014 and 2019**, and this upward trend should be put into perspective with the reduction ambitions announced between 2019 and 2020.

## B) For the companies who have reduced their emissions, is it a real desire of mitigating their climate impact?

**There is no way of linking these reductions to a company's real desire of mitigating its climate impact in the long term.** These reductions are mainly linked to economic conditions (search for short-term profitability and financial stability) or structural market changes. An overview of the price of crude oil<sup>1</sup> can also help to understand the variations observed.



## Focus on ConocoPhillips

In the case of ConocoPhillips, a major North American producer, the company experienced financial difficulties as early as 2015<sup>2</sup> due to the fall in crude oil prices; which led it to sell several assets to repay its debt and distribute dividends to its shareholders. Among these divested assets there were: oil sands projects which were sold to Canadian operators in 2017<sup>3</sup>, as well as its interests in exploration blocks off the coast of Senegal<sup>4</sup>.

These disposals have had an impact on production volumes: the share of bitumen has decreased, as has the share of gas. This decrease is reflected in the Scope 3 emissions: the drop in production volumes leads to a reduction in the combustion emissions for which the stakeholder is responsible.

1. Source : INSEE statistics

2. <https://www.nytimes.com/2015/01/30/business/2-oil-giants-post-losses-reflecting-price-plunge.html>

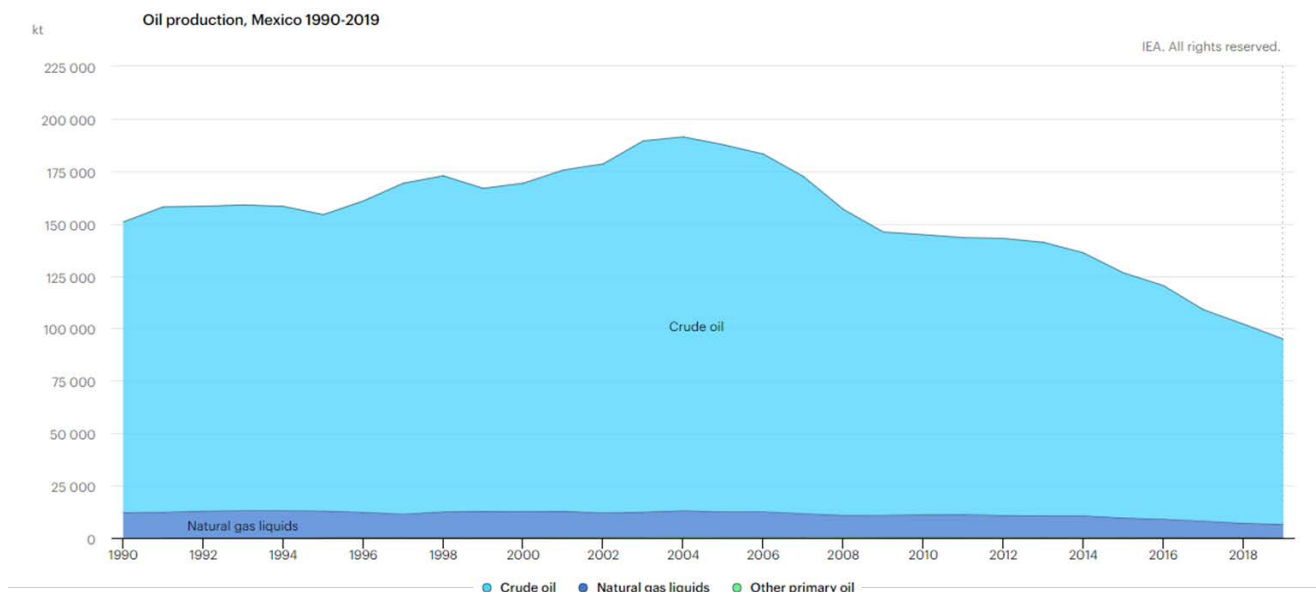
3. <https://www.ft.com/content/38e9a030-14d8-11e7-b0c1-37e417ee6c76>

4. <https://www.financialafrik.com/2016/11/01/conocophillips-acheve-la-vente-de-blocs-dexploration-au-large-du-senegal/>

## Focus on PEMEX

In the case of PEMEX, the drop in its emissions can be explained by the end of its monopoly on the energy market in Mexico<sup>1</sup>. In 2015, already weakened by the downward trend in production volumes since 2005, PEMEX faced the collapse of the price of crude oil, and was bailed out by the Mexican state - the sole shareholder - which at the same time liberalised the market over which it had previously held a monopoly.

The arrival of competition - coupled with the decrease in production volumes of existing assets - logically impacted production activities (-30%) while the volumes of crude oil exported by PEMEX remained unchanged between 2014 and 2019. The domestic refining activity faced an even greater decline (50%), while the imports of refined products from Mexico reached record highs in 2018<sup>2</sup>.



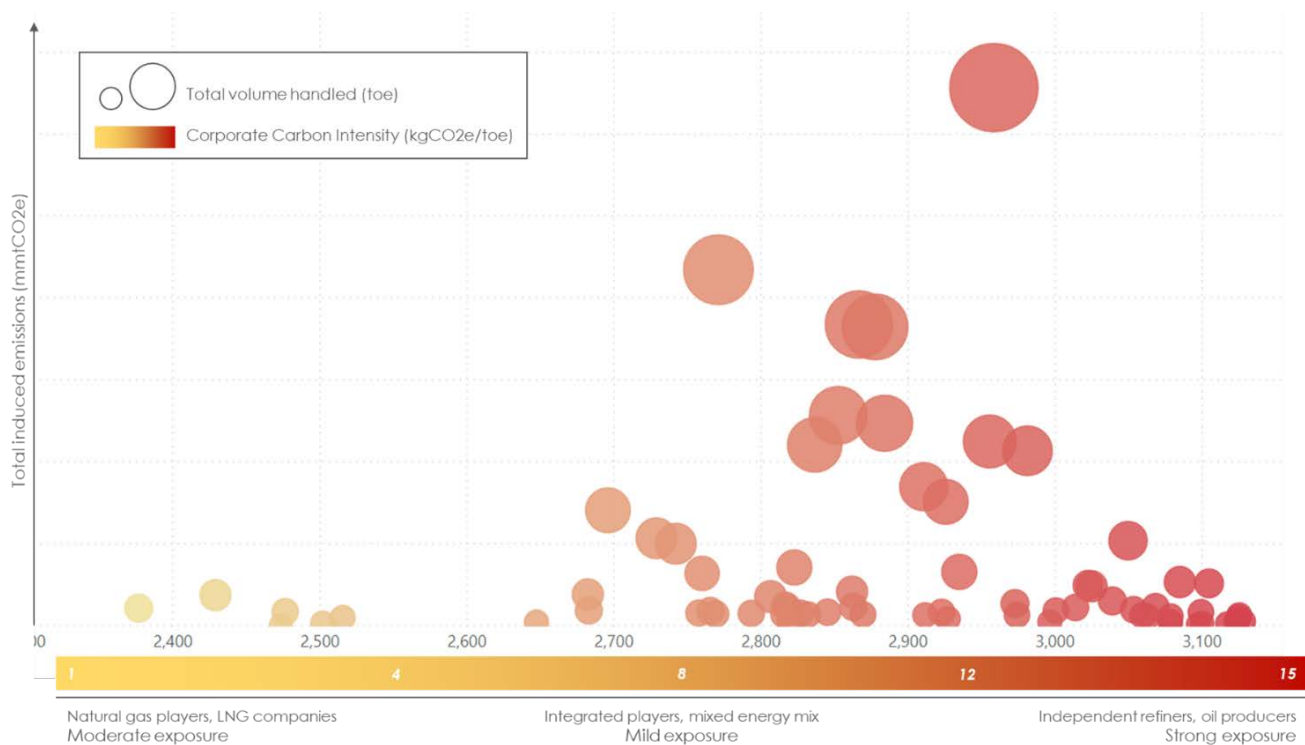
If we add in operational problems that impacted the utilization rate of several refineries in the group<sup>3</sup>, we can better understand the importance of the observed reduction.

**However, while companies announce vigorous efforts to decarbonize themselves, monitoring absolute emissions over longer and longer periods of time will certainly help to distinguish real efforts from the strokes of luck - good or bad.**

## 2.5 Energy mix : Gas versus Oil

The Corporate Carbon Intensity (CCI) allows for a comparison of the exposure to transition risk between the different stakeholders and the identification of certain trends.

- <https://www.oblis.be/fr/news/2017/05/04/valeur-semaine-petroleos-mexicanos-540472-et-https://www.wsj.com/articles/mexicos-pemex-steps-up-refinery-investment-plans-1449613321>
- <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MTPNTUSMX2&f=A>
- <https://www.reuters.com/article/us-mexico-oil/mexicos-lopez-obrador-pledges-more-than-11-billion-for-refineries-idUSKBNTKY2C1>



**Figure 4 – Average intensity of products managed by Oil & Gas companies**

In this graph - from which Gazprom has been excluded for readability reasons - several things can be observed:

- The stakeholders that generate the most emissions (y-axis) tend to have a more carbon-intensive energy mix (x-axis and bubble colour), which is logical since Scope 3 emissions are included in the induced emissions.
- Irrespective of emissions, stakeholders who manage a large amount of hydrocarbons (bubble size) also tend to have a more carbon-intensive product mix. In other words, they are currently more dependent on oil than on gas.

Companies with the CCI the weaker (on the left of the spectrum) are independent producers who have chosen to focus mainly on natural gas, including US stakeholders involved only in shale gas and who, in fact, produce small quantities. There are also companies specialising in the production and exportation of Liquefied Natural Gas, such as Australia's **Woodside Petroleum**. The last profile with a low CCI is the pure midstream stakeholder **Targa Resources Inc.**, which specialises in the processing of natural gas at the well outlet.

Conversely, companies with a high CCI (on the right of the spectrum) are refiners of petroleum products, as well as purely downstream stakeholders specialised in distribution to consumers via service stations. Given the nature of the products sold, these companies are more heavily exposed to the transition risk.

The position of the stakeholders who manage the largest volumes is of importance here, even without a look on past performance: the inertia specific to large structures is highlighted, since it is not necessarily the largest companies that are currently best prepared for the transition (intended or forced) to a low-carbon economy.



Among the majors, only **Eni** stands out thanks to its more balanced mix of natural gas and oil. The others are currently more invested in oil than gas.

## 2.6 Estimating future performance – The Top 5

Taking into account all of the qualitative criteria described above, the following 5 stakeholders obtain the best qualitative score.



Neste, a Finnish integrated stakeholder known for its involvement in biofuels, obtained the best qualitative score for 2019, on a par with Eni, an Italian integrated stakeholder. Several stakeholders are behind him, whose ambitious announcements suggest that the climate challenge is better integrated into the short and medium-term strategy.






### A - Strategies of the top 5

**The strategy adopted by these stakeholders is to generate an increasing share of their turnover through activities that are less dependent on fossil resources, to ensure the sustainability of their economic activity in a context of diminishing resources. We can observe significant investments, but also disposals of carbon assets.**

Some are favouring "low-carbon" energies - which include renewable energies and natural gas - by acquiring numerous stakes in existing companies (**Total, Repsol**), while others are moving towards biofuels by adapting existing infrastructures (**Eni**) or building new ones (**Neste**).

An increase in petrochemical activity is also envisaged in the strategy of many stakeholders (**Equinor**): although they generate significant operational emissions during their manufacture, petrochemical products are not intended to be directly burned - although a lot of plastic and textile waste ends up in incinerators. Moreover, chemicals represent a higher value-added activity.

**To sum up, we are witnessing a strategic shift, to varying degrees, and the emphasis is on renewable energies and other low-carbon activities.** The table below summarises the strategies of the best stakeholders and allows comparison.


Stakeholder	Strategy	Time Scale	Investments	Goals
	<ul style="list-style-type: none"> <li>Continuous increase in bio-fuel production capacity (already 25.5% of turnover in 2019) up to 4.5 Mmt in 2022</li> <li>Monitoring the avoided emissions due to the use of its biofuels compared to conventional fuels</li> </ul>	2022 - 2030	40.49%	-4%, 2017-2025 <b>Gross</b> Scope 1 & 2 Absolute (tCO <sub>2</sub> e)
	<ul style="list-style-type: none"> <li>Reduction in production volumes (not quantified), increasing share of gas</li> <li>Diversification towards bio-fuels (conversion of existing refineries) and hydrogen</li> <li>Increasing investment in renewable production capacity</li> <li>CCUS and reforestation projects to offset induced emissions</li> </ul>	2030	3.24%	-80%, 2018-2050 <b>Net</b> Scope 1, 2 & 3 Absolute (tCO <sub>2</sub> e)
	<ul style="list-style-type: none"> <li>Diversification of activities towards natural gas and the sale of electricity to the detriment of oil (currently, electricity accounts for ~2% of turnover, target of 15% in 2025)</li> <li>Increase in renewable capacity by 2.5 by 2025 (7.5 GW)</li> <li>Investments in hydrogen for transport</li> </ul>	2020 - 2025	7.12%	-15.40%, 2010-2020 <b>Gross</b> Scope 1 & 2 Absolute (tCO <sub>2</sub> e)
	<ul style="list-style-type: none"> <li>Focus on renewable electricity generation - with a stated objective of 25 GW of capacity by 2025 - and the use of natural gas in favour of oil.</li> <li>Financing of research on the CCUS (10% of the R&amp;D budget)</li> <li>Investments towards biogas for transport</li> </ul>	2025 - 2030	11.09%	-15%, 2019-2030 <b>Net</b> Scope 1, 2 & 3 Intensity (gCO <sub>2</sub> e/MJ)
	<ul style="list-style-type: none"> <li>Diversification of activities towards renewable electricity and low carbon (petrochemicals), but increase in the share of oil in production (from 35% in 2019 to 50% in 2030)</li> <li>10-fold increase in renewable capacity by 2025 (~5GW)</li> </ul>	2025 - 2030	3.52%	-20%, 2005-2030 <b>Gross</b> Scope 1 & 2 Absolute (tCO <sub>2</sub> e)

Summary table of 5 most ambitious companies' strategies

## BP's ambition

Even though BP does not appear in the top 5 qualitative performances - due to less transition investments, its involvement in source rock hydrocarbons and a more fragile governance on climate issues - the ambition displayed still deserves special attention.

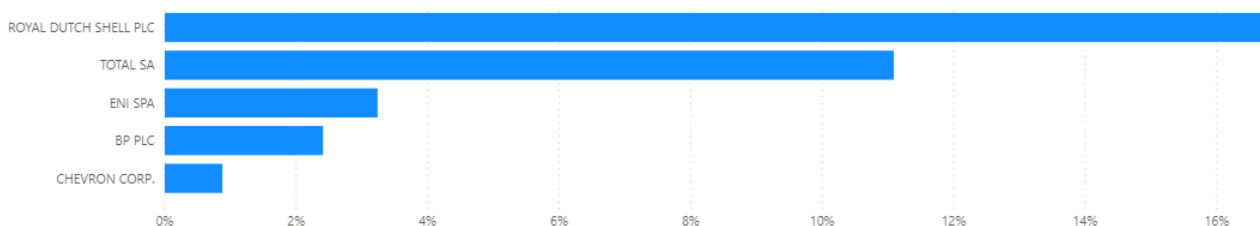
In terms of its strategic ambition, **BP remains the only stakeholder to have explicitly quantified a reduction in its production volumes**, although this objective does not concern all of the company's volumes - notably its 20% stake in Rosneft, another Russian giant which represents 44% of its oil production and 14% of its natural gas<sup>1</sup>.

Acteur	Stratégie	Horizon	Investissements	Ambitions
	<ul style="list-style-type: none"> <li>Sortie progressive des énergies fossiles (-40% en volumes de production d'ici 2030 – hors Rosneft – et arrêt de l'exploration dans les nouveaux pays) pour plus d'activités bas-carbone (renouvelables, biocarburants, hydrogène)</li> <li>Multiplication des investissements vers le bas-carbone par 10 d'ici 2030.</li> </ul>	2025 - 2030	2.41%	-6%, 2015-2025 Gross Scope 1 & 2 Absolute (1CO2e)

These ambitious announcements can be attributed to two factors: on the one hand, the arrival of Bernard Looney at the head of the company in 2020, and on the other hand, the spectacular fall in the price of crude oil following the global economic downturn due to the SarS-Cov 2 pandemic – which necessarily leads to less investments in exploration & production, hence a decrease in production in the medium run.

These outlooks, coupled with the decline of production volumes from existing assets, lead us to think that BP's announcements do not only results from its willingness to limit its GHG emissions, but also from geological and economic conditions.

BP also plans to drastically increase its investments in its low-carbon activities, although the stakeholder has a long way to go. Among the big names, BP is ranked just ahead of Chevron for the share of CAPEX directed towards low-carbon projects.



1. <http://priceofoil.org/2020/09/23/big-oil-companies-still-failing-on-climate/>

## B- Analysis of reduction targets

	Increase in absolute emissions (5y)	Reduction targets (incl. Scope 3)
	+13%	-80%, 2018-2050 Net Scope 1, 2 & 3 Absolute (tCO <sub>2e</sub> )
	+14%	-50%, 2019-2050 Net Scope 1, 2 & 3 Intensity (gCO <sub>2e</sub> /MJ)
	+31%	-60%, 2019-2050 Net Scope 1, 2 & 3 Intensity (gCO <sub>2e</sub> /MJ)
	+12%	-50%, 2019-2050 Net Scope 1, 2 & 3 Intensity (gCO <sub>2e</sub> /MJ)
	+30%	-
	+48%	-40%, 2010-2040 Net Scope 1, 2 & 3 Intensity (gCO <sub>2e</sub> /MJ)
	+9%	-50%, 2019-2050 Net Scope 1, 2 & 3 Intensity (gCO <sub>2e</sub> /MJ)
	+13%	-

### 1) Scope 3 commitments

With the exception of US-based ExxonMobil and Chevron, the other "big oil" companies have all announced reduction targets aimed at achieving carbon neutrality by 2050 with a set of intermediate steps, although these targets are still surrounded by a great deal of vagueness.

Indeed, the reduction targets relate to net Scope 1, 2 & 3 emissions, i.e. taking into account the offsetting efforts undertaken by the company. So, when an O&G company announces an objective for neutrality by 2050, it actually commits to offsetting its induced emissions through the purchase of "carbon credits", funds that will be used to finance reforestation/afforestation projects and other agricultural techniques<sup>1</sup>.

However, **offsetting does nothing to protect against the risks of transition** - be it failed assets, the risk of market loss or the risk of increased costs.

They are also envisaging increasing the use of **CCUS**, a technology that allows carbon dioxide to be captured from the air or at the factory outlet, stored in underground tanks and then reused in an on-demand industrial process (metallurgy, food industry, etc.). Nevertheless, the cost of this technology remains extremely high and the carbon footprint of such a process is still poorly known.

Another limitation: **only Eni has so far committed itself to reducing its absolute emissions (incl. Scope 3)**. The other targets are expressed in terms of carbon intensity of products sold (gCO<sub>2e</sub>/MJ), which does not commit to an effective reduction in absolute emissions. However, it is these emissions that must decrease to remain in line with the objectives of the Paris agreements.

**Given its importance for the O&G sector, it is to be applauded that Scope 3 is gradually being considered in these targets. On the other hand, considering the past emissions and uncertainty surrounding these announcements, there is no way of telling whether the future emissions will be in line with the climate scenarios.**

1. For more information on this subject, please refer to the "Net Zero" initiative launched by Carbone 4.

## 2) Scope 1&2 commitments

While **only 9%** of the companies in our sample have announced a reduction target covering their Scope 3, around 40% are already committed to Scopes 1&2. The positions to be tackled as a priority vary: reducing flaring and gas leaks remains a priority for many stakeholders (Scope 1), while others are turning to electricity produced from renewable sources to power their production sites (Scope 2), or are trying to reduce their energy consumption (Scope 1&2).

However, the time scales differ. While the big stakeholders consider a horizon of 2030 with 2019 as the reference year, the smaller stakeholders are committing to shorter reduction targets, or are still following a previously announced target.

### Zoom

#### A comparison between Eni and BP

Although these two stakeholders have announced similar reduction and neutrality targets in terms of content, the difference in ratings is based on other criteria, notably investment and governance.

The share of Eni's low-carbon investments is 0.83% higher than that of BP over the same period (3.24% for Eni, 2.41% for BP). At the same time, BP has implemented an absolute reduction target on its Scope 1&2 emissions up to 2025. Eni's targets are less ambitious in comparison.

Finally, while both companies include climate performance in their variable remuneration for employees and have set up internal structures dedicated to climate issues; BP does not seem to offer specific training on climate issues to its employees, something that is highlighted in Eni's documents and which earned it a better score for the governance criterion.

## 2.7 Segment notes

The sector score is a synthesis of the three indicators described above, and therefore makes it possible to classify companies by taking into account their history, their current positioning and their future ambitions. Below are the **40 largest market capitalisations in the sector**, classified by sector score.



A high score indicates high exposure to transition risk, while a low score indicates moderate exposure to transition risk.

### A look at the best stakeholder OMV AG

The Austrian integrated stakeholder OMV AG obtained the best sector rating in this analysis campaign. Thanks in particular to a product mix composed of half gas (52%), as well as a reduction in its absolute emissions over the last 5 years (Scope 1, 2 & 3), due to a decrease in its refining and distribution activities despite a constant increase in its production volumes.

Indeed, over the last 5 years, OMV has divested several oil assets to move towards offshore gas, including a strengthening of its shareholdings in assets in Tunisia<sup>1</sup> and Russia<sup>2</sup>. The stakeholder has also divested certain assets in refining<sup>3</sup>.

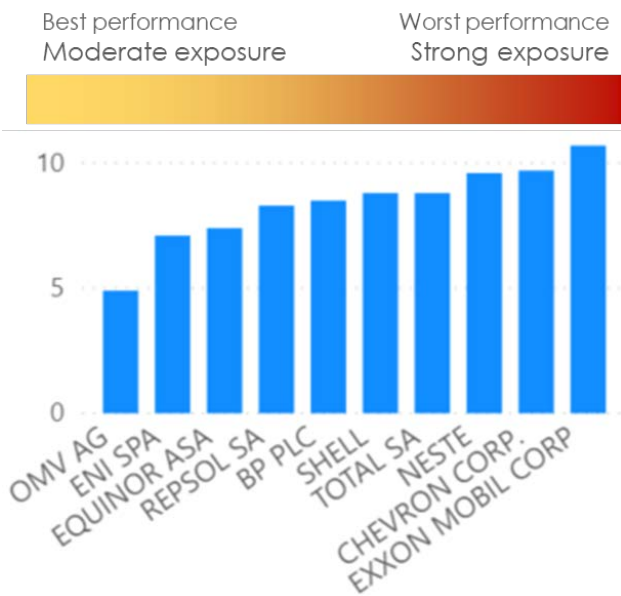
From a strategic point of view, OMV AG plans to increase the share of low-carbon products to 60% of its portfolio by 2025 (52% in 2019), while reducing the energy intensity of its products by 6% by 2025 (compared to 2010), all Scopes combined. The company is also committed to achieving carbon neutrality by 2050, although this notion does not correspond to an absolute physical reality.

1. <https://www.ogj.com/general-interest/companies/article/17272366/omv-to-invest-500-million-in-nawara-gas-field>

2. <https://www.neweurope.eu/article/austrias-omv-enters-russias-yuzhno-russkoye-gas-field/>

3. <https://www.ogj.com/refining-processing/refining/operations/article/17271965/omv-completes-sale-of-bayernoil-interest>

In line with its strategy, OMV has directed 6% of its CAPEX towards transition projects.



Among the big names in the sector, there is a rather striking difference between European and American companies, as the absence of an ambitious strategy at **Exxon** and **Chevron** has a strong impact on their sector rating.

The qualitative rating is the differentiating factor for most of the stakeholders, as the differences observed in the carbon intensity of their products and the evolution of their absolute emissions remain small.

While **Neste** has a certain lead in biofuels, the refining of petroleum products remains its main activity, which therefore presents an extremely high carbon intensity. It is not involved in natural gas, an activity that could contribute to reducing its carbon intensity.

On the other hand, its biofuel production activity is well considered by the CIA method in a dedicated module, and the score obtained via this module puts Neste ahead of all the other major companies.

**Eni** comes out ahead of the other major companies thanks to its past positioning in the field of natural gas and objectives more ambitious than its peers – although not necessarily compatible with a 2°C trajectory. The profiles of **Total**, **Shell** and **BP** are remarkably similar; due to the diverse strategies that they are about to implement, it will be possible to compare the effectiveness of a given strategic choice by monitoring all these companies using the CIA method.

# Glossary

Abbreviation	Meaning
<b>2DS</b>	"2 Degrees Scenario", in which the temperature increase is limited to 2°C by 2100 compared to pre-industrial levels
<b>B</b>	Billion
<b>B2DS</b>	"Beyond 2 Degrees Scenario", in which the temperature increase is limited to 1.6°C by 2100 compared to pre-industrial levels
<b>CIA</b>	Carbon Impact Analytics, analysis methodology used by Carbon4 Finance
<b>EF</b>	Emission factors
<b>IEA</b>	International Energy Agency
<b>K</b>	Thousand
<b>LNG</b>	Liquefied natural gas
<b>LPGs</b>	Liquid petroleum gases
<b>M</b>	Million
<b>NOCs</b>	National Oil Companies
<b>NPS</b>	New Policies Scenario
<b>O&amp;G</b>	Oil & Gas business sector
<b>RTS</b>	"Reference Technologies Scenario", considered as the business-as-usual scenario
<b>SDS</b>	Sustainable Development Scenario
<b>tCO2e</b>	Tonne of CO2 equivalent which measures GHG emissions considering the Global Warming Potential (GWP) of each one
<b>Toe</b>	Tonne of oil equivalent





Launched in 2016 and based in Paris, **Carbon4 Finance** brings to the financial sector the expertise of the consulting firm Carbone 4, which since 2007 has provided services in carbon accounting, scenario analysis and advice in all economic sectors.

Carbon4 Finance offers a complete set of climate data solutions covering both physical risk (CRIS Methodology: Climate Risk Impact Screening) and transition risk (CIA Methodology: Carbon Impact Analytics). These proprietary methodologies allow financial organisations to measure the carbon footprint of their portfolio, assess the alignment with a 2°C-compatible scenario and measure the level of risks that arise from events related to climate change.

Carbon4 Finance applies a rigorous "bottom-up" research-based approach, which means that each asset is analysed individually and in a discriminating manner.

For more information, please visit [www.carbon4finance.com](http://www.carbon4finance.com)