

Erasmus Platform for Sustainable Value Creation

# Case study

## Air France - KLM

Willem Schramade



# **Air France - KLM:** a sustainable finance case study

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**Important:** this company analysis was done for educational purposes. It is not an investment recommendation nor does it in any way reflect the opinion of RSM, Erasmus University. Target prices were calculated only to illustrate ways of thinking about value.

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# 1 Abstract

This is the second in a series of RSM case studies on sustainable finance. Using a list of questions, we show how to integrate sustainability into investment analysis by connecting sustainability to business models, competitive position, strategy and value drivers. Here the questions are answered for Air France - KLM, a company that faces substantial sustainability headwinds, on both the social and environmental dimensions.

Our findings suggest that Air France - KLM creates too much value on S (social) for its pilots, at the expense of value destruction in F (financial) and E (environmental) terms. We explore the likely (and substantial) impact of a serious carbon price. This could put the company out of business, but could also help it to solve its S problem. The case highlights the need for fundamental analysis (that is, going well beyond ESG ratings) to properly assess a company's transition preparedness, which we deem the essence of corporate sustainability.

## 2 Introduction

In this case study we analyse airline company Air France - KLM (henceforth AFK) from a sustainable finance perspective. As argued in our Philips case study (Schramade and Schoenmaker, 2019), analysts often struggle to integrate sustainability into investment analysis, partly because sustainability is so context specific and hard to capture in ratings and other standardisations. The case questions and answers offer analysts the tools to integrate sustainability in investment (and credit) analysis. AFK's context is very different from that of Philips, as AFK has serious tensions between S, E and F. So, in spite of using the same set of questions (see next section), we get very different answers, different priorities, and different follow-up questions than in the Philips case.

The case should help analysts to do such an analysis, which goes well beyond ratings and historical data patterns. Rather, we explore how one can deal with scenarios that have not happened yet. It requires an active and fundamental approach to assess transition preparedness.

We chose AFK because of the structural headwinds it faces, namely its very high carbon emissions and its labour problem. It is hard to precisely quantify these headwinds, but trying is valuable. First, it shows that they are so substantial that they cannot be ignored from a financial perspective either. Second, it highlights the gaps in reporting and standards that we face and the follow-up questions that beg for answers. For example, based on AFK's current disclosure we cannot determine to what extent the company is capable of dealing with serious carbon prices – nor how it compares to its peers.

This article is set up as follows: in the next section, the list of questions is presented. In the subsequent section, the questions are answered for AFK, starting with the company's business model and value drivers, before diving into strategy and sustainability. It then goes back to the value drivers and the investment case to see how they have been affected by the sustainability analysis. In this way, the analyst develops a holistic view of the company. The final section concludes and reflects.

# 3 The list of questions

The below list of questions (Table 1) has been made over the course of several years of doing ESG integrated investment analysis, and is exactly the same as in the Philips case. More recently, they have been structured as an assignment for the Sustainable Finance course taught at Erasmus University and can be found in our Sustainable Finance textbook (Schoenmaker and Schramade, 2019, Chapter 8).

They are meant to deepen students' and practitioners' understanding of ESG integration by having them apply sustainable finance insights to a real life example – and ideally discuss with fellow students or colleagues. They are 25 questions (even more including sub-questions) in six sections. Although the six sections address different issues, it should become obvious during the analysis that they are very much related.

**TABLE 1 LIST OF SUSTAINABLE FINANCE QUESTIONS FOR ESG INTEGRATION**

Section	Questions
<b>1. Business model &amp; competitive position</b>	<ol style="list-style-type: none"><li>1.How would you describe the company's business model?</li><li>2.How strong do you rate the company's competitive position?</li><li>3.What trends affect the company's business model and competitive position?</li></ol>
<b>2. Value drivers (part 1)</b>	<ol style="list-style-type: none"><li>1.Sales growth: what seems to be a normal sales growth for the company? And what are the drivers of sales growth?</li><li>2.Margins: what seems to be a normal profit margin (EBIT or EBITDA) for the company? And what are the drivers of that margin?</li><li>3.Capital: how capital intense is the company? What do you think is the firm's cost of capital? What is the firm's return on invested capital (ROIC)</li><li>4.Please sketch how you see the company's value drivers going forward?</li></ol>

<p><b>3. Sustainability</b></p>	<p>1.Purpose: what is the company's mission / purpose / raison d'être? In what way does the company create value for society? How does it get paid for that value creation?</p> <p>2.Stakeholders: what are the company's main stakeholders? Please fill out the stakeholder impact tool</p> <p>3.Externalities &amp; impact: Does the company generate serious externalities? Are they positive or negative? How do you assess the chances of these externalities to be internalized? Thresholds: how does the company perform versus the planetary boundaries?</p> <p>4.SDGs: which of the SDGs (if any) does the company help achieve? Which negative SDG exposures (if any) does the company have?</p> <p>5.Impact: to what extent can the company's impact be measured? Does the company report on its impact? How can its impact reporting be improved?</p> <p>6.Material issues: what are the most material ESG factors? I.e., what issues are most critical to the success of the company's business model? Please fill out the given matrix, discussing for each of these most material ESG factors (1) how the company performs on it; (2) whether the company derives a competitive (dis)advantage from it; (3) how they might affect the value drivers</p> <p>7.Sustainability reporting: how do you assess the company's non-financial reporting? Does the company (claim to) do Integrated Reporting (&lt;IR&gt;)? To what extent do you see the seven principles of &lt;IR&gt; reflected in the company's reporting?</p>
<p><b>4. Strategy</b></p>	<p>1.How would you describe the strategy of the company?</p> <p>2.To what extent does that strategy take into account the company's most material ESG issues? Please link to your answer in the sustainability section.</p> <p>3.Is the strategy consistent with the company's purpose?</p> <p>4.What does long-term value creation look like? What are the best KPIs for it?</p> <p>5.What does management compensation look like? To what extent does management have long-term incentives? And are those incentives aligned with long term-value creation?</p> <p>6.How does the company communicate its long-term value creation with shareholders and stakeholders?</p>
<p><b>5. Value drivers (part 2)</b></p>	<p>1.Given all of the above questions &amp; their answers, how do you rate the effect of material sustainability issues on the value drivers going forward? Per value driver, please indicate whether you see a positive, negative or neutral effect</p> <p>2.How would this affect your valuation of the company?</p>



## **6. Investment conclusions**

1. How well prepared do you think Philips is for the transition to a more sustainable economic model?
2. How attractive do you find the company as an investment?
3. What did you find most surprising when answering the above questions?
4. If you were to engage with the firm, what topics would you address?

Source: authors

Of course, these questions can be answered either very high level or in a very detailed way. And not all questions will need to be answered every time or right away. Ideally, priorities will depend on the needs of the user and the relevance of the particular issue in the context at hand. It certainly should not be a matter of perfectionism or box-ticking, as answering the questions is not a goal in itself but meant to build a good holistic understanding of a company's transition preparedness and investment attractiveness.



# 4 Answering the questions for AFK

In this section, the questions are answered for AFK, an airline company headquartered in France with its main hubs in France and the Netherlands. We answered the questions based on publicly available material. Ideally, the answers serve as a useful illustration and help answering the same or similar questions for different companies as well.

## 1. Business model & competitive position

See Chapter 5 of Schoenmaker and Schramade (2019) for a description of the below concepts and how they relate to each other.

### Business model & competitive position

#### 1.1. How would you describe the company's business model? What are its customer value proposition and profit formula?<sup>1</sup>

AFK's business model is about offering air transport services. The company is organised into four segments:

Network (>90% of sales); this includes both the passenger and cargo operations of its two big brands, Air France and KLM, as well as some other brands;

Maintenance; aircraft maintenance for external and internal customers;

Transavia; a low cost airline that offers passenger flights in Europe;

The above mix shows that the vast majority of AFK's business is about offering air transport, mainly to individual travellers. So, for the remainder of the analysis, we'll focus on that part of the business. There, the customer value proposition is to offer fast, safe, reliable, convenient and affordable transport over medium to long distances.

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<sup>1</sup> Johnson *et al.* (2008) argue that a successful business model has three components:

1. the model helps customers perform a specific 'job' that alternative offerings do not address;
2. the model generates value for the company through factors such as the revenue model, cost structure, margins and/or inventory turnover;

**Key resources and processes:** the company has the people, technology, products, facilities, equipment and brand required to deliver the value proposition to targeted customers. The company also has processes (training, manufacturing, services) to leverage those resources.

In its profit model, the company tries to maximise its sales in the face of high fixed costs (planes, labour) and highly dynamic variable costs (fuel) – as we’ll see, this involves serious social and environmental issues. Maximising sales is about getting good volumes (plane utilisation rates) and good ticket prices. For this, the company uses several brands, algorithms, and diversified pricing schemes. Ingredients for driving sales include a good reputation, a strong set of connecting flights, onboard comfort, customer service, and loyalty schemes.

## 1.2. How strong do you rate the company’s competitive position?

AFK claims to derive competitive advantage from its brands (Air France, KLM) and its hubs (Paris Charles de Gaulle and Amsterdam Schiphol). Capacity constraints at its hubs effectively shut out new entrants. However, its competitive position does not look very strong as the airline industry is highly competitive and faces serious issues such as high and fluctuating fuel costs, and problematic labour relations. In addition, legacy airlines like AFK typically have higher labour costs than low-cost airlines like Ryanair or EasyJet. Moreover, there is increasing competition from aggressive Middle Eastern airlines with deep pockets. And in short-haul, airlines also compete with cars and trains, which typically offer more seating space and less safety hassles.

**TABLE 2 SWOT ANALYSIS**

### Strengths:

- Brands
- Capacity constrained airports

### Weaknesses:

- Strong labour unions
- High personnel cost base
- Weak balance sheet
- Oil price sensitivity

### Opportunities:

- Transavia growth
- Restructuring
- More integration of group brands

### Threats:

- Low cost competitio
- Aggressive Middle East carriers
- Political turmoil / terrorist attacks
- Carbon prices

## 1.3. What trends affect the company's business model and competitive position?

The following trends can be discerned for the airline industry:

- Population growth & rising incomes in Asia
- Climate change / emissions

- Digitalisation

Population growth is a positive trend for the airline industry, but as a European player, AFK's exposure is limited. On the negative side, carbon emissions regulation and pricing are likely to become a serious headwind for the industry, and AFK is no exception. Digitalisation is a question mark. In a recent report<sup>2</sup>, consultants PwC observe:

*"Carriers that invest in owning this data, and in the top-notch analytics needed to mine it, could do as digital leaders in the retail sector do: anticipate customer desires and their willingness to pay with astounding precision. They could also track the effectiveness of nearly every offer and decision—from marketing to pricing to partnerships—throughout the value chain."*

## 2. Value drivers - part 1

### Sales growth

#### 2.1. What seems to be a normal sales growth for the company? Please explain. And what are the drivers of sales growth?

AFK has low and volatile sales growth. Revenue shrank in four out of the last eight reporting years and amounted to €25.8bn in 2017. Drivers of sales include passenger volumes and the (in)ability to charge high prices, which is in turn driven by factors such as customer service, planning, demand and competition. Passenger volumes are expressed in metrics like ASK (available seat kilometres), RPK (revenue passenger kilometres) and load factor (capacity utilisation). Table 3 shows these numbers for 2016 and 2017.

**TABLE 3: PASSENGER VOLUMES FOR THE NETWORK BUSINESS<sup>3</sup>**

Passenger network data	2017	2016
<b>Passengers, millions</b>	83.9	80.2
<b>Capacity, ASK million</b>	286,190	278,807
<b>Traffic, RPK million</b>	248,475	238,183
<b>Load factor</b>	86,8%	85,4%
<b>Passenger revenues</b>	19,630	18,849

<sup>2</sup> PwC, Tailwinds report, 2018 airline industry trends

<sup>3</sup> Network means that this is excluding Transavia, which carried another 14.8 million passengers

Source: 2017 AR, p87

The main drivers of passenger volumes are population, incomes, (the absence of) terrorist attacks, and the viability of alternatives – such as rail connections on the short haul, which is likely to intensify as 1) new high speed rail connections are laid out; 2) rail is much less carbon intensive and will benefit from a serious carbon price. In Section 3 on sustainability, we explore AFK's carbon emissions exposure, and the likely impact of a carbon price.

## Margins

### **2.2. What seems to be a normal profit margin (EBIT or EBITDA) for the company? Please explain. And what are the drivers of that margin?**

AFK's profitability is low, and unevenly split over Air France (3.7% operating margin 2017) and KLM (8.8% operating margin 2017). EBIT margins hovered around 0% from 2009-2014, but recovered to over 5% in 2017. It remains to be seen if they can maintain that margin, but they do try hard with serious cost reduction targets. The main drivers of margins are: labour costs (€7.6bn in 2017 [29% of sales], excluding lost sales from strikes); fuel costs (€4.5bn in 2017 [17% of sales]); and their ability to make up for those costs with high ticket prices and load factors (i.e., utilisation, driven by sales matching planned capacities). Both labour costs and fuel costs are hard to control, and industry trends don't look good. In a report on the global airline industry, PwC<sup>4</sup> reported the following:

*"Non-fuel costs surged nearly 10% in 2017, to \$561 billion. Labour costs are rising especially quickly. They are expected to account for over 30% of global airline costs in 2018, while fuel costs should only be about 20%."*

## Capital

### **2.3. How capital intense is the company?**

By end 2017, AFK had €24.4 billion assets and €14.8 billion invested capital (IC)<sup>5</sup>. With sales of €25.8 billion, the firm's capital intensity (IC/sales) is 0.6. This is lower than Philips' 1.0 and much lower than the 1.5 we see at a typical aluminium company. However, AFK also has much lower margins than the latter and hence has lower ROIC as well. Moreover, capital intensity will probably rise as operating leases come on the balance sheet as a liability per January 2019 (IFRS 16). AFK's capital structure is quite risky, with long-term debt (most notably long term borrowing, pension obligations and leases) over €10bn by end of 2017, versus less than €6bn in market cap and only €3bn in book equity at the time.

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<sup>4</sup> PwC, Tailwinds report, 2018 airline industry trends

<sup>5</sup> Invested capital deviates from total assets as non-operating assets (such as stakes and excess cash) and non-interest bearing short term liabilities are deducted from total assets to arrive at invested capital

## 2.4. What do you think is the firm's cost of capital? Please explain

AFK's levered beta is 0.66 on a 5-year monthly basis. Due to its leverage (Net debt/Equity<sup>6</sup>=2), its unlevered beta is even lower, at 0.22 (0.66/3=0.22). However, this seems way too low given the cyclical nature of the business and is probably more a reflection of the stock's poor return history than of its operational risk. Over a 20-year time frame, the company's levered beta is 1.42, and for extended periods, airline beta's have been over 2. We therefore deem a beta of 1.5 more appropriate. Assuming a long-term risk-free rate (Rf) of 4% and long-term market expected return (Rm) of 8%, its WACC becomes:  $4\% + 1.5 \times (8\% - 4\%) = 10\%$ . That is significantly higher than AFK's own estimate of 7.5% (AR 2017, p198) – based on a cost of equity at 12.1% (reasonable), and driven down by currently low cost of debt (2.7%).

## 2.5. What is the firm's return on invested capital (ROIC)? Please explain

With NOPLAT<sup>7</sup> at €1.1 billion, AFK has  $ROIC = NOPLAT/IC = 1.1/13.8^8 = 7.7\%$ . This is not high, but much higher than the company made historically: around 0% over 2010-2014 and 5-6% during 2015-2016. It is still below our estimate of the company's cost of capital (10%) and pretty close to AFK's own estimate of 7.5%.

## Value driver overview

### 2.6. Please sketch how you see the company's value drivers going forward in the table below

**TABLE 4: VALUE DRIVER ASSESSMENT FOR AFK**

Value driver	Market implied	Our assessment on the next decade, before ESG analysis	Our assessment on the next decade, after ESG analysis
<b>Sales growth</b>	2%	1%	-2%
<b>EBIT margins</b>	4,5%	4%	3%
<b>WACC</b>	10%	10%	11%
<b>Resulting fair value</b>	€ 10,2	€ 5,5	<€0

Source: authors' analysis

<sup>6</sup> Source: Bloomberg

<sup>7</sup> NOPLAT=Net operating profit less adjusted taxes. See for example Koller et al. (2015).

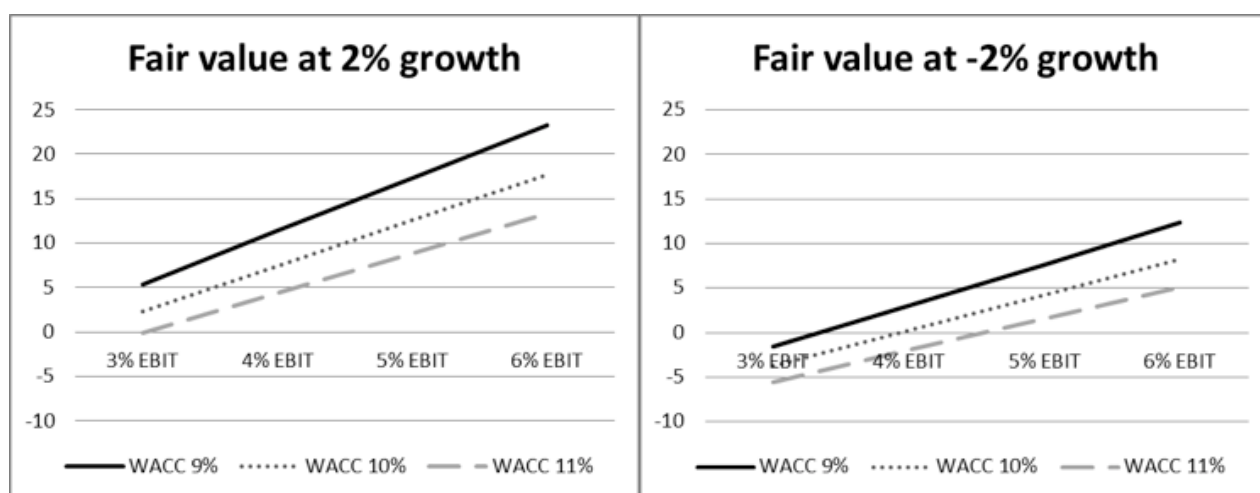
<sup>8</sup> This is last year's IC, hence a different number than in 2.3.

The resulting fair values of €5.5 and 0 are obtained by putting the value driver assumptions in a DCF like the one shown in the Philips case. These fair values are well below AFK's stock price of €10.2 per mid-February 2019. By adjusting our assumptions to solve for the market price, we obtain the market implied value driver assumptions: the market seems to price in 2% sales growth, while maintaining the 4.5% EBIT margins at a 10% WACC. It is quite common to see stocks price in the continuation of recent results.

While we get a negative fair value in our ESG integrated analysis, value and price cannot go below 0. The negative equity value means that fair enterprise value is below the value of debt. In that case, and also in cases where enterprise is slightly above debt value, the equity effectively becomes an option and will be priced accordingly.

Sensitivities on sales growth and margins are shown in Graph 1.

**GRAPH 1: VALUATION SENSITIVITIES**



Source: authors' analysis

The high sensitivity to margins and WACC is extreme, but not surprising given the high leverage and low ROIC.

### 3. Sustainability

#### Purpose

#### 3.1. What is the company's purpose / raison d'être? In what way does the company create value for society? How does it get paid for that value creation?

We could not find a reference to the mission or purpose of either the group or Air France, but did find KLM's stated corporate purpose:

*"Moving Your World By Creating Memorable Experiences".*

Frankly, this seems more of a marketing slogan than an authentic purpose. More credible would be something about moving and connecting people. The company creates value by bringing people to other places, and gets paid for doing so, but insufficiently to cover its cost of capital. At the same time, the company (like any airline) also destroys a lot of value with its carbon emissions. On balance, the company is probably value destructive, and the same applies to most of its peers.

## Stakeholders

### 3.2. What are the company's main stakeholders? Please fill out below the stakeholder impact tool

**TABLE 5: STAKEHOLDER IMPACT MAP FOR AFK**

	Employees	Customers	Governmentst	Airports
<b>Goals</b>	Good working conditions & working hours, high salaries & benefits, personal development, professional pride & financial/ job security	Cheap tickets, good services, reliability, safety, range of destinations, big seats, etc.	Jobs, environmental protection, compliance, security measures, tax income, national pride, influence, economic growth	Fees, connections, traffic for retail operations
<b>How the company helps those goals</b>	Pay and job fulfilment	Offer discounts, frills, new routes etc.	Keep running their operations	Keep running their operations
<b>How the company hurts those goals</b>	Job cuts, efficiency measures, utilization maximization	High prices, poor service, delays	Job cuts, high emissions	Bargaining for fees, switch to different airports

Source: authors' analysis

In the stakeholder impact map, two frictions stand out:

1. The friction between what customers want (low prices & high service), and what employees want (high wages and less work pressure) in an unsuccessful profit formula;
2. The governments' conflicting interests of having on the one hand more traffic (and jobs and tax income) and on the other hand lower carbon emissions.



These frictions are serious and are in stark contrast to the Philips case, where the stakeholder impact map found very limited friction among stakeholders. Most companies seem to be in between, with less but still significant frictions among stakeholders. These frictions deserve to be discussed in a group. Our teaching sessions showed that, with a bit of help, a group of students can get to the core of such issues very fast.

### Externalities & impact

To guide the transition towards a sustainable and inclusive economy, the United Nations has developed the 2030 Agenda for Sustainable Development. The 17 UN Sustainable Development Goals (SDGs) stimulate action over the years 2015-2030 in areas of critical importance for humanity and the planet. This should result in a serious reduction in negative externalities. The corporate sector too is increasingly working on the internalisation of externalities, which is a threat for some and an opportunity for others (e.g. Schramade, 2017). However, even if the SDGs are achieved, that does not guarantee that we stay within the planetary boundaries identified by Steffen *et al.* (2015) – beyond which climate may change so dramatically that life on earth becomes hard if not impossible.

### 3.3. Does the company generate serious externalities? Are they positive or negative? How do you assess the chances of these externalities to be internalised?

On the positive side, airlines stimulate economic growth and the exchange of people and ideas. The large negative externality is its impact on the environment. For AFK and its main peers, Table 6 shows the limited availability of carbon emissions data in Bloomberg, the main financial terminal used by financial analysts.

**TABLE 6: AFK'S EMISSIONS VERSUS PEERS**

Company	2016 Bloomberg direct CO2 emissions, mn t	2017 Bloomberg direct CO2 emissions, mn t	2016 sales, EUR bn	2017 sales, EUR bn	2016 emissions /sales	2017 emissions /sales
<b>AFK</b>	28.2	Not available	24.8	25.8	1.17	Not available
<b>Lufthansa</b>	28.5	30.3	31.7	35.6	0.90	0.85

<b>IAG / British Airways</b>	Not available	Not available	22.6	23.0	Not available	Not available
<b>Ryanair*</b>	8.6	Not available	6.6	7.2	1.30	Not available
<b>EasyJet</b>	Not available	Not available	4.7	5.0	Not available	Not available

Source: Bloomberg and authors' analysis

Data availability is limited and so is comparability. Differences in carbon emissions intensity of sales might be a genuine reflection of differences in carbon emissions efficiency, but they might also be driven by differences in the type of flights (short haul vs long haul), measurement, or the ability to charge high prices. Based only on the available data, we cannot tell.

Reporting is poor and target setting is even poorer: recent work by the LSE<sup>9</sup> shows that that none of the world's top 20 stock-listed air carriers have any plans in place to manage their carbon emissions after 2025.

### **3.4. Which of the SDG's (if any) does the company help achieve? Which negative SDG-exposure (if any) does the company have?**

AFK claims to significantly contribute to the realisation of SDGs 7, 8, 9, 12 and 13. That claim is probably correct for SDGs 8 (decent work and economic growth) and 9 (industry, innovation and infrastructure), but not for SDGs 7 (affordable and clean energy), 12 (responsible consumption and production), and 13 (climate action). AFK does make efforts to reduce its environmental footprint, but the company continues to be a heavy polluter and still contributes negatively to these SDGs. Like many others, AFK confuses a less negative contribution with a positive contribution.

### **3.5. To what extent can the company's impact be measured? Does the company report on its impact? How can its reporting be improved?**

The company's negative impact on the environment can be measured to some extent: its emissions are partly reported, but not other effects like its impact on biodiversity. We also have no quantifiable information on the company's social impact. Unlike Philips, the company makes no effort at impact reporting, and it

<sup>9</sup> <https://www.euractiv.com/wp-content/uploads/sites/2/2019/03/TPlstudy.pdf>

does not set impact targets. AFK's social impact could be estimated though, either superficially with models on employee and customer well-being, or more thoroughly by applying the TruePrice or True Value methodology.

On the carbon emissions side, we can do some rough calculations based on the following numbers:

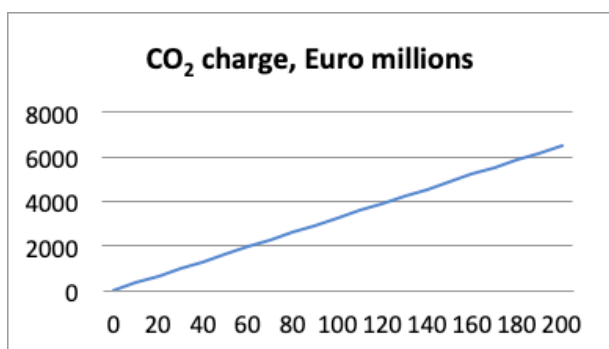
**TABLE 7: AFK KEY FINANCIALS & EMISSIONS**

<b>2017 CO2 emissions, scope 1 &amp; 2, millions of tonnes</b>	32.7
<b>2017 sales, millions of Euros</b>	25,784
<b>2017 EBIT, millions of Euros</b>	1,423
<b>2017 Net income, millions of Euros</b>	-274

Source: AFK AR 2017

Based on 2017 numbers, AFK's negative environmental externality can be made visible by applying a carbon tax to its carbon emissions - regardless of whether such a tax is actually in place or not. The charge is then simply the carbon tax times the amount of carbon emissions. The below chart illustrates the size of the charge at various carbon prices.

**GRAPH 2: AFK'S CO2 CHARGE**

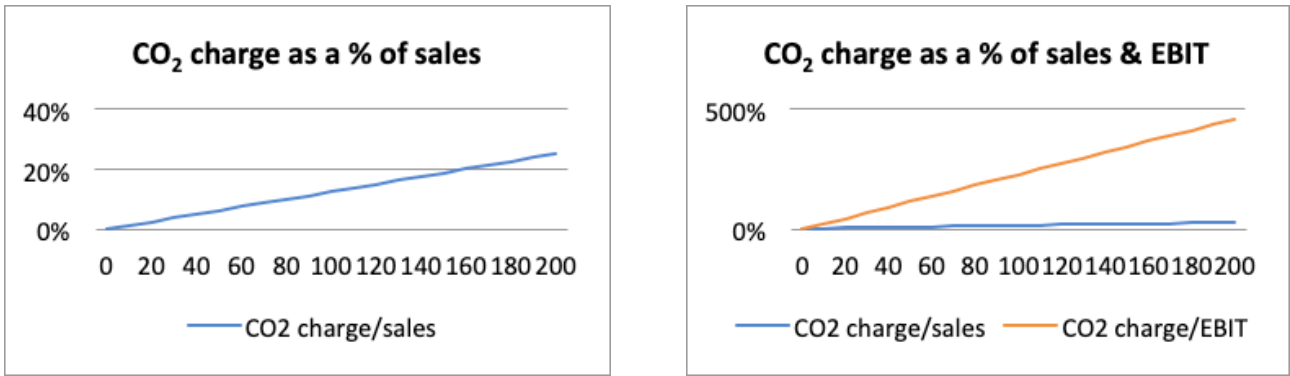


**The horizontal axis represents CO2-prices**

Source: authors' analysis

So, for example, at a carbon price of €100, the charge is €3.3 billion. If such a carbon price were indeed levied, AFK would try to pass on the cost to its customers. Thus, the charge would come on top of ticket prices and sales. In the case of a €100 carbon price, that would mean 13% higher ticket prices and sales. See Graph 3.

**GRAPH 3: AFK'S CO2 CHARGE AS A PERCENTAGE OF SALES & EBIT**

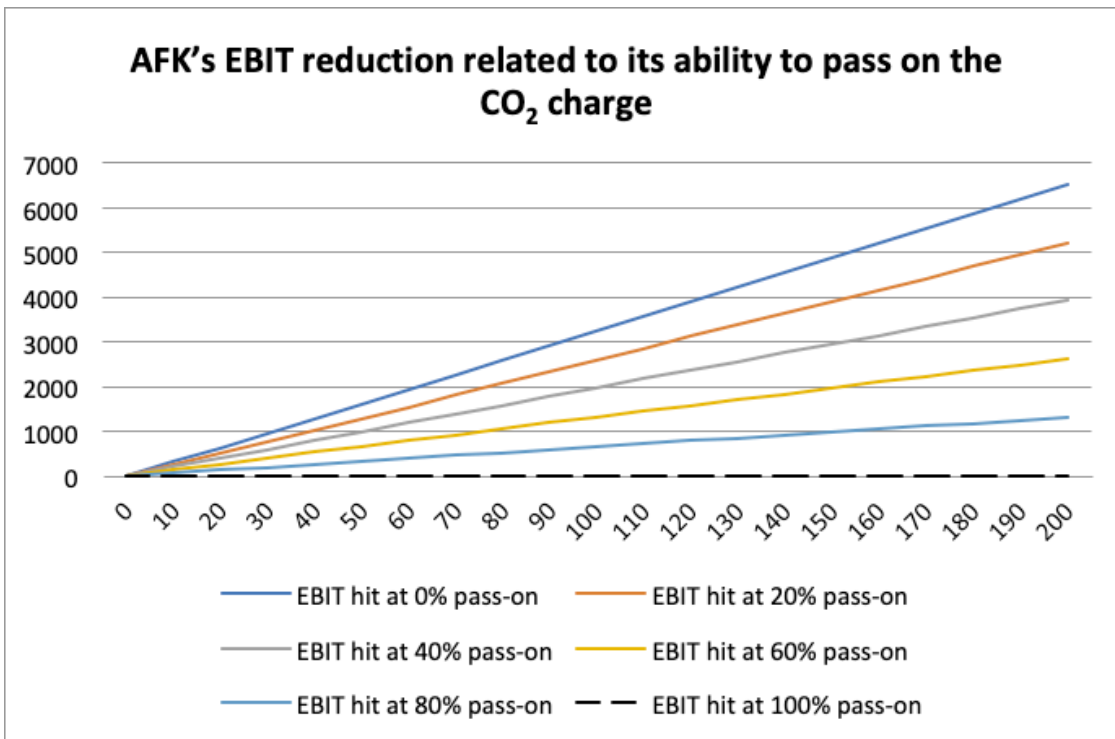


Source: authors' analysis

In reality, AFK's sales would likely go up less than the charge, or would even drop, as passenger numbers would fall in response to higher ticket prices. The charge is even higher when compared to EBIT: 235% of EBIT at a €100 carbon price.

But the actual impact of such a carbon price is unclear as it would depend on the company's ability to pass on the cost (which is likely low in such a price competitive industry). At first sight, the impact could range from 0 (full pass on) to the aforementioned 3.3 billion (0 pass on), as illustrated in Graph 4.

**GRAPH 4: AFK'S EBIT REDUCTION RELATED TO ITS ABILITY TO PASS ON THE CO2 CHARGE**



Source: authors' analysis

However, this is still too simplistic, as it ignores the volume effects. The impact on EBIT is impossible to tell, as you need to take into account the reactions of the airline, its competitors and its clients. The company (and industry) might be able to pass on the charge in its prices to customers (in the hypothetical case of 0 price elasticity), but can still take a hit due to lower passenger volumes, which means less of its fixed cost base is covered. In fact, there could even be a positive effect on EBIT if the company manages to have a lower CO<sub>2</sub> footprint than its peers (thanks to biofuel initiatives & a younger fleet). The ideal scenario would see AFK benefit from a CO<sub>2</sub> advantage and from strong connections to high-speed rail at its hubs – and gain back market share from low-cost carriers. This scenario is not as far-fetched as it may sound: long-haul flights cannot be replaced by train connections and are therefore less likely to be disrupted than short-haul. At least in this respect, legacy carriers seem to be better positioned than low-cost carriers.

**Thresholds: how does the company perform versus the planetary boundaries?**

In other words: is the firm’s sustainability performance good enough? It is hard to tell and the company does not indicate how big its contribution is versus how big it should be. Then again, neither does Philips. The only company we are aware of that has made a serious try in this respect is Novo Nordisk, which recently launched its Future Fit analysis.

**Material issues**

Not all sustainability issues are equally important (‘material’) from an investment perspective. It is important to identify material sustainability issues, which may differ across companies and industries (Khan *et al.*, 2016).

**3.6. What are the most material ESG factors? I.e., what issues are most critical to the success of the company’s business model? Please fill out the below matrix, discussing for each of these most material ESG factors: how the company performs on it, whether the company derives a competitive (dis)advantage from it and how they might affect the value drivers.**

**TABLE 8: MOST MATERIAL ISSUES FOR AFK & VALUE DRIVER IMPACT**

Material issue	Performance	Competitive edge?	Impact on value drivers?
<b>Carbon emissions</b>	It is not clear how well AFK does versus airline peers. In short haul, the airline industry clearly underperforms the high-speed rail network	AFK has the potential to obtain a competitive edge, given its biofuel initiatives. But there is no evidence yet.	Not enough information, but likely negative on sales & margins going forward, given the edge of high-speed rail

<b>Corporate governance</b>	Four large shareholders including two State governments make this a tricky situation	No, disadvantage	Higher WACC
<b>Human capital</b>	Weak, especially on the Air France side, which is hit by strikes very frequently	No, higher costs than entrants	Negative on margins (already)

Source: authors' analysis

One could also mention product quality, brand, supply chain and digitalisation. But the above three seem most material, and we discuss them below.

### Carbon emissions

As indicated above, carbon emissions are a very material issue for AFK. To address, this, the company presents its Climate Action Plan on page 163 of the 2017 AR, with six main priorities:

- Fleet modernisation & contribution to aeronautics research
- Mobilising the groups internal and external players around action plans enshrining eco-design principles
- Supporting NGO-led environmental programs
- Promoting the emergence of sustainable alternative biofuels for aviation and research into renewables
- Giving customers information on their travel-related CO2 emissions and the opportunity to offset these
- Supporting international efforts to reach a global climate agreement in which the aviation sector would make a just and equitable contribution

These points make sense, but they do raise some questions, such as: what is the progress on these points? What is a just and equitable contribution?

The 2017 AR also refers to IATA's<sup>10</sup> emission reduction targets:

- By 2020, a 1.5% annual improvement in energy efficiency
- From 2020, neutral growth in CO2 emissions, particularly via market-based mechanisms
- By 2050, a 50% reduction in CO2 emissions relative to their 2005 level
- Will AFK exceed these targets? A 1.5% annual improvement in energy efficiency is not good enough versus airline growth.

### Corporate governance

<sup>10</sup> The International Air Transport Association

AFK has a complicated group structure, with heavy government influence, which exacerbates the human capital problem of the group. Moreover, in February 2019, the Dutch government surprisingly took a 14% stake in AFK, putting it on par with the French stake, and ahead of Delta Airlines and China Eastern Airlines. The move was meant to protect the interests of KLM and Schiphol airport (which is wholly owned by the Dutch state). It should also be seen in light of the skewness in the group: KLM is smaller but much more profitable (85% of group operating result in H1 2017) than Air France.

This move sparked a lot of debate on the role of governments in capital markets and the quality of the investment climate. For AFK, it means more uncertainty as it now has four large shareholders with conflicting interest. This could result in actions that hurt minority shareholders.

## Human capital

Personnel is key for an airline and AFK's staff cost amounted to €7.6bn in 2017. Table 9 shows the distribution of AFK's personnel, which is skewed to France. It is especially the 8 thousand flight deck crew (pilots) that drive up personnel cost. They are heavily unionised and have strong bargaining power. And in May 2018, CEO Jean-Marc Janailac resigned over not reaching a pay deal with the unions. However, bargaining power will likely erode over time:

1. they earn much more than at low-cost peers, which seems unsustainable;
2. autonomous flight is possible and basically makes them superfluous. Suppose the 8 thousand pilots are overpaid by €100,000 on average, then the rent extraction amounts to €800 million annually. It also weakens AFK's competitive position vis-à-vis the low cost carriers, which do not overpay their pilots.

**TABLE 9: AFK KEY STAFF NUMBERS**

	2015	2016	2017
<b>Total staff</b>	89,490	87,917	87,312
<b>Ground staff</b>	56,318	54,969	53,185
<b>Cabin crew</b>	24,947	24,757	25,859
<b>Flight deck crew</b>	8,225	8,191	8,268
<b>50 years and above</b>	28,672	30,378	30,318
<b>The Netherlands</b>	30,101	29,747	30,217
<b>France</b>	50,034	49,510	48,961



source: 2017 AR, p142

AFK is frequently hit by strikes, particularly on the Air France side. The word combination 'Air France & strike' gives 89 million hits on Google (25 Oct 2018) vs 1.4 million for 'KLM & strike'. A strike effectively puts the company out of business for several days, costing it hundreds of millions. They typically strike during the holiday season, as they know they hit results hardest then. Surprisingly, Air France scores 4.1 (out of 5) on Indeed and KLM 4.2; Air France scores 3.8 on Glassdoor, and KLM 4.0; Air France - KLM scores 3.3 (i.e., HQ lower). The cynical explanation of these scores is that working conditions are good and that employees are exploiting their bargaining power.

### **Sustainability reporting**

Integrated Reporting (<IR>) aims to improve financial reporting by giving a more complete picture of corporate performance, including non-financial or pre-financial performance.

#### **3.7. How do you assess the company's non-financial reporting? And its approach to sustainability? How credible is it?**

AFK reports on a number of sustainability issues, but it is still a far cry from integrated reporting, as the strategic context is mostly lacking. Unlike Philips, AFK does not offer an visualisation of its business model in its 2017 annual report.

In contrast, Philips's sustainability reporting is very advanced. The company has a long tradition in integrated reporting (since 2008) and sustainability reporting (since 1998). Notable features in its 2017 annual report include targets on circular economy sales, and the target of 3bn lives improved – making it one of the few companies that reports on impact. Philips also has an environmental profit & loss (EP&L) statement.

#### **3.8. Does the company (claim to) do Integrated Reporting (<IR>)?**

No. This is unlike Philips, which has been doing <IR> since 2008.

#### **3.9. To what extent do you see the seven principles of <IR> reflected in the company's reporting? Please fill out the following matrix (see also Table 6.3 in Chapter 6):**

Philips does quite well:

**TABLE 10: PRINCIPLES OF <IR> FOR AFK AND PHILIPS**

Principle	Degree of application for AFK	Degree of application for Philips
<b>Strategic focus and future orientation</b>	~ there is a part on strategy, but it does not explain the company's strategy very well	✓ describe the path to value creation; 'roadmap to win'
<b>Connectivity of information</b>	~ limited	✓ there is quite a bit of cross-referencing
<b>Stakeholder relationships</b>	✓ Air France - KLM has a separate section called 'dialogue with stakeholders' and often refers to its stakeholders – though in a less structured way than Philips	✓ Philips explicitly refers to its stakeholders and to its multi-stakeholder projects
<b>Materiality</b>	~ priorities are not clear and no materiality matrix is given	✓ Philips reports a materiality matrix that rates quite a few E, S, and G issues on business impact versus importance to stakeholders
<b>Conciseness</b>	<b>X</b> report is still hundreds of pages long	<b>X</b> report is still hundreds of pages long
<b>Reliability and completeness</b>	<b>X</b> key issues are missing and the assurance is limited on most reported issues	~ Philips reports 'sustainability statements', which includes references to stakeholders; a materiality matrix, as well as data and targets on items such as lives improved, circular revenues, carbon footprint, waste recycling and supplier sustainability. However, it is not very clear how that affects financial results
<b>Consistency and comparability</b>	~ limited comparability	✓ comparability of data versus other years is good, but comparability with other companies is limited

Source: authors' assessment of the Philips and AFK 2017 annual reports

## 4. Strategy

Ideally, a company's strategy is aimed at long-term value creation (see Schoenmaker and Schramade, 2019, Chapter 5).

#### **4.1. How would you describe the strategy of the company?**

The strategy of the company is not very well described, but seems to be based on hubs and partnerships. As the company puts it in its 2017 annual report (page 70):

*The Air France - KLM Group's ambition is to be a European leader in the air transport industry by offering all customer segments transport offers tailored to their needs, between both Europe and the rest of the world and on intra-European routes on departure from the Group's natural markets. This goal is supported by the Group's different brands which are positioned in complementary markets with their own specific operating models.*

*The network brands, Air France, KLM and Joon, are based on a system of hubs around efficient infrastructure at Paris- CDG and Amsterdam- Schiphol, and take advantage of numerous partnerships to offer a high-density network. They also offer a wide range of top-quality products and services in which digital technologies will enable more personalization to ensure a more effective response to customer expectations.*

*Air France - KLM's expertise in the cargo business supports the Group's airline operations while making a material contribution to their economics. The point-to-point (HOP! Air France) and low-cost (Transavia) brands aim to provide efficient transportation solutions for domestic and intra-European travel. The Air France - KLM Group also plans to develop its positioning as a global reference player in the aeronautics maintenance market by leveraging its recognised know-how in terms of operational efficiency, innovation and technical expertise.*

The company goes on to list its strengths:

- A strong presence in all the major markets
- Coordinated hubs
- A portfolio of strong brands aligned with customer expectations
- A balanced customer portfolio

And on page 70 it says:

*The Group's strategy, whose concrete expression is the "Trust Together" project, must enable Air France - KLM to rise to three major challenges: capture its share of global air transport industry growth, further enhance the customer experience and reinforce the Group's operational efficiency while achieving the competitiveness targets in the "Perform 2020" plan.*

Unfortunately, the company does not explain its strategy in terms of the five elements of a strategy as defined by Hambrick & Fredrickson (2005): arenas, staging, vehicles, differentiators and economic logic.

**4.2. To what extent does that strategy take into account the company's most material ESG issues? Please link to your answer in section 3.**

The strategy is not linked to material ESG issues, which is surprising given the challenges the company faces in human capital and carbon emissions.

**4.3. Is the strategy consistent with the company's purpose? Please explain.**

That is not clear as both the company's strategy and its purpose are not very clear.

**4.4. What does long-term value creation look like? What are the best KPIs for it?**

Long-term value creation for all stakeholders means decent returns on F, E and S:

- F: ROIC above the cost of capital. AFK does not achieve that.
- E: avoid harm and ideally improve by providing solutions to others in reducing their harm. AFK does do harm and tries to reduce it. Possible KPIs include carbon emissions; carbon emissions savings.
- S: similar to E in terms of avoiding harm and providing solutions. In some respects, AFK seems to give too much value to employees, especially pilots. KPIs: salaries, NPS, local medical scores, employee satisfaction.

In sum, AFK's value creation/destruction process is rather unbalanced. More generally, the criteria for value creation in terms of E and S are not fully clear, but KPIs to proxy them are available.

**4.5. What does management compensation look like? To what extent does management have long-term incentives? And are those incentives aligned with long-term value creation?**

Page 43 of the 2017 AR outlines that over 2017, the CEO's compensation was €600,000 in cash, plus variable compensation. The variable compensation was 60% based on financial targets and 40% on qualitative performance in terms of governance, strengthening of internal group alliances, and the "Trust together" project. So, it was partly tied to human capital ("Trust together" project), but not to environmental performance.

**4.6. How does the company communicate its long-term value creation with shareholders and stakeholders?**

This is not clear.

## 5. Value drivers – part 2

In Schramade (2016) it is described how analysts can make adjustments to their value driver assumptions based on how the company's most material ESG issues affect its competitive position.

### 5.1. Given all of the above questions & their answers, how do you rate the effect of material sustainability issues on the value drivers going forward? Per value driver, please indicate whether you see a positive, negative or neutral effect – and please explain why.

All three value drivers are negatively affected by material ESG issues:

**TABLE 11: VALUE DRIVER ASSESSMENT FOR AFK**

Value driver	Positive/negative/neutral	Explanation
<b>Sales growth</b>	Negative (going forward)	Carbon pricing will come and it will hurt industry growth, notably in Europe
<b>Profitability</b>	Negative (already)	Labour is keeping margins down and carbon pricing is likely to depress them further
<b>Capital</b>	Negative	Governance is an issue and investments are needed to solve the emissions problem

Source: authors' analysis

### 5.2. How would this affect your valuation of the company?

Our assessment gives lower growth, lower margins and a higher cost of capital for AFK, as summarised in table 12 (and shown also in table 4):

**TABLE 12: VALUE DRIVER ADJUSTMENTS FOR AFK**

Value driver	AFK incl ESG disadvantage	Explanation AFK ex ESG disadvantage	AFK disadvantage
<b>Sales growth</b>	-2%	1%	300bps
<b>Margins</b>	3%	4%	100bps

<b>Cost of capital</b>	11%	10%	100bps
<b>DCF value of the stock price</b>	€ 0	€ 5,5	€ 5,5

Source: authors' analysis

Given the extreme outcome (€0 fair value) and the large impact of carbon pricing, we should not stop our analysis here. We apply scenario analysis to better understand AFK's value.

Our scenarios are as follows:

- Bull: airplane manufacturers brilliantly solve the carbon emissions problem & AFK solves its labour problem
- Market: business as usual. This is what the market price implied in February 2019
- Base: AFK will suffer from high carbon prices (and negative growth), but those troubles will allow it to solve its labour problem. The company will shrink, but it survives in an ultimately more sustainable way
- Bear: the carbon price rises in shock that AFK is unable to absorb

The four scenarios have the following numbers associated with them:

**TABLE 13: SCENARIOS & VALUE DRIVER ASSUMPTIONS FOR AFK**

	<b>Bull case</b>	<b>Market base case</b>	<b>Our base case</b>	<b>Bear case</b>	<b>Overall share price</b>
<b>Emissions</b>	Gradual rise & very well managed by AFK	Nothing happens	Gradual rise & managed okay	Rise in shocks	
<b>Growth</b>	4%	2%	-2%	-2% & some years with -10%	
<b>Margins</b>	8%	5%	3%	0%	
<b>Resulting value</b>	35	10	0	0	
<b>Probability (1)</b>	15%	45%	20%	20%	9
<b>Probability (2)</b>	10%	30%	30%	30%	6

Source: authors' analysis

Balancing these scenarios with probabilities is visualised in Table 14, which only contrasts the probabilities of the bull and market base scenarios, since the other two both have (€0 fair value and hence their probabilities can be combined.

**TABLE 14: SCENARIOS & VALUE DRIVER ASSUMPTIONS FOR AFK**

		bull case										
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
market base case	0%	0	4	7	10	14	17	21	25	28	32	35
	10%	1	5	8	11	15	18	22	26	29	33	
	20%	2	5	9	12	16	19	23	26	30		
	30%	3	6	10	13	17	20	24	27			
	40%	4	7	11	14	18	21	25				
	50%	5	8	12	15	19	22					
	60%	6	9	13	16	20						
	70%	7	11	14	17							
	80%	8	12	15								
	90%	9	13									
	100%	10										

Source: authors' analysis

The current price (€10, early Feb 2019) can be read as 20% chance of the bull case, 30% chance of the market base case, and 50% combined chance of our base case and the bear case.

## 6. Investment conclusions

### 6.1. How well prepared do you think AFK is for the transition to a more sustainable economic model?

In our view, AFK does not look well prepared. In contrast, Philips is comparatively very well prepared for a more sustainable economic model, with advanced sustainability thinking and reporting, and its actions in the right direction: efforts on carbon emissions reductions, circular economy, and a more affordable and efficient healthcare system. AFK is in a much tougher predicament and has shown no clear signs of being able to overcome its challenges.

### 6.2. How attractive do you find the company as an investment? Please explain and refer to your above answers.

It is hard to find AFK attractive as an investment. The environmental, human capital and governance issues are severe. The equity looks more like an option than like a solid investment.

### 6.3. What did you find most surprising when answering the above questions?

We found the lack of integration of environmental and social issues into the company's strategy quite surprising.



#### **6.4. If you were to engage with the firm, what topics would you address?**

Questions:

- What are management's views on consumer preferences, technology development, CO<sub>2</sub> pricing etc.? And what are the implications for AFK's strategy?
- What is their view on sustainability thresholds?
- What kind of CO<sub>2</sub> price scenarios do they use? What do they assume in terms of sales and margins?
- How are they going to deal with a rising CO<sub>2</sub> price? How do they compare to other legacy carriers and to low cost carriers?
- How much of the CO<sub>2</sub> price will they be able to pass on?
- What can we expect from their biofuels initiatives?
- Progress on climate targets? What does a fair & equitable contribution from the airline industry look like?
- Do they see scope for cooperation with high-speed train operators in a hub-and-spoke model?
- How are they going to deal with the high costs of pilots (salaries and pension contributions)? How do they compare to low cost carriers?

Feedback:

- Please improve reporting, provide a much clearer strategic view...
- Please give more granularity on impact and the contributions to the SDGs: how big are those in both positive and negative terms?

In addition, data on comparable firms would be most welcome, but ESG data providers or sell-side research would be the more logical source of such comparisons.

# 5 Conclusions and reflections

AFK provides interesting case material due to the significant challenges it faces especially on carbon emissions, human capital and governance. On the website of the Erasmus Platform for Sustainable Value Creation (<https://www.rsm.nl/erasmus-platform-for-sustainable-value-creation/home/>) we also publish similar cases for other companies, which allows for comparing AFK with companies that face much different circumstances. For example, our first case study was on Philips, which is very advanced in sustainability thinking and reporting. For Philips, sustainability is much more of an opportunity than a threat.

During our executive course on sustainable finance, the students (mostly bankers and pension fund professionals) compared AFK's transition preparedness to that of McDonald's and BMW. In their opinion, AFK is the weakest of these three companies since it has least room to manoeuvre. Still, we identified a serious carbon price scenario in which AFK could prosper. For that to happen though, it will have to be successful in dealing with its material issues.

On the carbon emissions side, AFK is exposed to the risk of a serious carbon price. It is unclear to what extent the company can prepare itself for that. Nor is it clear how the company is positioned versus peers. However, we do observe that the company is trying to lower its exposure by updating its fleet and by doing pilots on biofuels. Human capital management at AFK is tough, as the pilots' unions are powerful and often go on strike, resulting in significant losses. Governance is also a major concern, with government involvement likely to override the concerns of shareholders and other stakeholders.

The above analysis was done based on public information, which contains serious gaps. We might have been able to fill some of those gaps by talking to AFK's management<sup>11</sup>. Management's thinking on sustainability issues is likely to go much beyond what is currently disclosed and it typically does not get challenged on these issues by investors – in spite of their relevance to the value drivers. Therefore, engagement on these issues could be very valuable to investors and management alike.

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<sup>11</sup> This would not be inside information, in contrast to stock price sensitive information on yet unreported results.

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