

Illustrative cases

We add three cases covering corporate settings where ESG issues are highly relevant. These cases introduce and give background information on the settings of the companies and the issues in focus, as well as suggest topics for discussion and reflection. The purpose of the cases is as a basis for class or group discussions, not to promote one, definitive solution. Any inputs to improve the cases are welcome.

Table 14.1 Overview of Illustrative cases

Topic	Industry	Company
Cost of Capital	Energy	Aker – split
Scenario	Airline	KLM
Market	Energy	Aker – Split
Past Liabilities	Energy	ENBW

14.1 The split of Aker in 2020

July 17, 2020 – Aker Solutions is launching a series of structural and strategic changes to transform the company and enhance shareholder value by spinning off the wind and carbon capture businesses to shareholders and merging Aker Solutions ASA (“Aker Solutions”) with Kværner ASA (“Kvaerner”) to create an optimised supplier company. Source: Oslo Børs.

The Aker corporate sphere is a major Norwegian industrial structure related to engineering and production, primarily connected with the petroleum sector. Within this sphere, Aker Solutions is a Norway-based oil service company focused on manufacturing subsea equipment, engineering and maintenance/modification/operation.



The announcement above has since been executed, including spinning off Aker Carbon Capture and Aker Offshore Wind, raising new capital to these companies and listing them on the informal Euronext Growth exchange (formerly called Merkur market), as well as merging Aker Solutions and Kvaerner. Some key market data (1.10.2020):

The business models of the newly spun off companies are, in short:

- Aker Offshore Wind: Pure-play deep-water wind independent power producer on water depths of more than 60 meters.
- Aker Carbon Capture: Technology, engineering, delivery and operation along the whole carbon capture, transport, storage and utilisation value chain.

Company	MV(E), NOK, gross	Return from 26.8.20	Std.dev. (ann.)
Aker	29.rd	-4%	7.2%
Aker Solution	2.rd	-19%	21.0%
Aker Offshore Wind	rd	41%	86.2%
Aker Carbon Capture	3.rd	14%	50.0%

The market values Aker Solution, Aker Offshore Wind and Aker Carbon Capture as being in the same range. Still, the companies represent three very different propositions from a sustainability perspective:

- 1 Which are the main scenarios that may be relevant for valuing the three companies?
 - a. Carbon emissions
 - b. Technological developments
 - c. National and supranational political developments and regulations
 - d. Demand
 - e. Other
- 2 To what extent may governance, ownership and scope impact the valuation of the companies differently? Is it only about sustainability?
- 3 How may thinking around optionality, including real options, assist in valuing these companies?

14.2 Air France KLM

Air France KLM (AFK) is an airline company headquartered in France. Most of AFK's business (86% of revenues, according to the company's 2019 Universal Registration Document) consists of "Network" activities, which include offering air transportation to cargo and individual travellers. The airline sector is currently under high scrutiny, due to the impact of its activities on the global carbon emission load. Recent reports (e.g. (Air Transport Action Group (ATAG), 2020)) suggest that aviation is responsible for 2 to 3% of greenhouse gas emissions. Given the expected future growth in air traffic, and in the absence of action, this proportion may even increase.

AFK is aware of the risks related to its impact on the environment and is committed to contributing to the achievement of a more sustainable business model in aviation. According to (Air France KLM, Sustainability Report, 2018):

The Group is endlessly innovating so as to be a reference in sustainability. Its ground and flight operations have an impact on the environment, including climate change, noise, air pollution and waste. The Group strives to continuously improve all aspects of its activities to reduce its environmental footprint. In particular, it is contributing to the establishment of a sustainable biofuels industry for aviation.

From a Sustainable Finance perspective, one could make a broader analysis of factors affecting AFK's valuation (e.g., labour problems, as exposed in Schramade (2019)). Spillover effects could also influence several of those different factors simultaneously, creating complex trade-offs. In the following, for simplicity in the exposure, we focus exclusively on carbon emissions.

14.2.1 Uncertainties related to AFK's carbon emissions

Regarding its carbon emissions, AFK broadly faces two types of uncertainty, each relating to a different group of stakeholders: governments and consumers. On the one hand, legislative pressure is building up, both on a local and a global level. Governments are currently implementing carbon prices (either in the form of carbon taxes or emission trading)

that could severely influence AFK's profit margins. Several countries plan to use these taxes to raise funds for investment in greener transportation infrastructure, such as rail transportation. Although this alternative does not impose a direct threat for ALK's transnational flights, it may certainly increase competition on a regional level. On the other hand, consumer pressure due to general climate change awareness could also affect AFK's ability to grow sales.

However, friction pushing in the opposite direction accompanies both threats. Governments know that air traffic is important for job creation and tax income, and consumers still want to be connected internationally and be able to travel around the globe.

Besides government and consumer pressures, climate change itself poses a threat to airline companies' business, as air operations depend on weather conditions and may be impacted by natural phenomena linked to climate change (earthquakes, volcano eruptions, hurricanes, floods, etc.).

14.2.2 How the uncertainties could affect AFK's valuation

AFK's profit model is largely dependent on its ability to maximise its sales vis-à-vis its high fixed costs (planes and labour). To maximise sales, AFK must maintain sufficiently high volumes (plane utilisation rates) and attractive ticket prices.

Carbon emissions could impact AFK's cash flows through two main channels:

- Carbon pricing (carbon taxes, emission trading) and the ability to pass these on to passengers (through ticket pricing)
- Volumes (number of passengers, plane utilisation rates)

Flight operations represent 99.7% of AFK's total direct emissions. Ground operations (testing bench, runway vehicles, etc.) represent 0.3%. In its (Air France KLM, Universal Registration Document, 2019), AFK provides the following data regarding its carbon emissions:

		Air France ⁽¹⁾ – KLM Group ⁽²⁾			
		Unit	2018	2019	19/18
Greenhouse gas emissions (Scope 1 GHG protocol) ⁽³⁾	Aviation Fuel [√]	ktons CO ₂	27,571	28,228	+2.4
	Ground Operations	ktons CO ₂	62.3	60.7	-2.6
Greenhouse gas emissions (Scope 2 GHG protocol)	Electricity	ktons CO ₂	46.2	7.6	-83.5
Greenhouse gas emissions (Scope 3 GHG protocol)	Upstream emissions from fuel production	ktons CO ₂	5,685	5,907	+3.9
Total carbon emissions		ktons CO ₂	33,365	34,203	+2.5
Offsetting	Mandatory	ktons CO ₂ credits	3,106	3,253	+4.7
		ktons CO ₂ credits	0	24	n.a
		ktons CO ₂ credits	0	98	n.a

[√] Figures verified by KPMG for 2019 (reasonable level of assurance).

(1) Air France Group scope: all flights under AF and AS code operated by Air France, Joon and HOP!, all flights under TO code operated by Transavia France.

(2) KLM Group scope: all flights operated by KLM, KLM Cityhopper, Martinair and Transavia.

(3) CO₂ emissions represent 98% for air transport (Carbon base on January 31, 2020: www.bilans-ges.ademe.fr/).

n.a.: not available

Below, AFK's CO₂ emissions are compared to a selected number of peers.

	CO ₂ emissions (mn t)		Revenues (bil €)		Net income (mil €)		Passengers (million)	
	2018	2019	2018	2019	2018	2019	2018	2019
AFK	33,4	34,2	26,5	27,2	420	290	101	104
Lufthansa	32,3	32,8	35,5	36,4	2196	1245	103	107
SAS	4,3	4,2	4,6	4,5	63	153	29	28
Norwegian	6,1	6,0	4,0	4,4	-145	-96	37	36
Ryan Air	11,7	13,1	7,2	7,7	1450	885	130	142

Source: own collection from financial reports.

14.2.3 Current trends in the Aviation Industry

In 2009, the International Air Transport Association (IATA) set the target of carbon neutral growth from 2020 onwards, and a 50% reduction in net aviation CO₂ emissions by 2050 relative to 2005 levels. The European Union wants to cut greenhouse gas output by 55% in the next decade, rather than the previous 40%, from a 1990 baseline.

Legislation regarding carbon emissions has shown an upward trend. AFK has been subject to the European Union emission quota system (EU-ETS or European Union Emission Trading Scheme) since 2012. In 2019, AFK's CO₂ emissions totalled 28 million tons, of which 6 million are expected to fall under the EU-ETS requirement (Air France KLM, Universal Registration Document, 2019). As of 2021, AFK will also be subject to the global carbon offsetting mechanism (CORSIA) adopted by the ICAO in October 2016.

Due to the Covid-19 pandemic, AFK reportedly was granted 10.4 billion euros in state-backed loans from the governments of France and The Netherlands. However, these loans have strings attached. Both the French and the Dutch government have made the loans conditional on carbon emission reductions.

President Emmanuel Macron recently proposed an airline duty increase to 30 euros per short-haul economy passenger and 400 euros for long-haul business, from their current 1.50-18 euro range. From Jan. 1, 2021, the

Netherlands is introducing passenger duties worth 220 million euros at pre-crisis traffic. (Frost & Abnett, 2020).

AFK therefore now faces higher pressures in both home markets as well as EU to reduce its carbon costs. These pressures come not only directly from governments, but also from civil society. A group of environmental organisations that includes Greenpeace has recently initiated a legal challenge to demand steeper emissions cuts in return for AFK's aid package.

The effect of the pandemic has not only been felt through regulatory pressures. Due to travel restrictions, airlines in general have seen passenger numbers decline. The pandemic has also led to strong developments in alternative (digital) meeting services, which could affect consumers' willingness to fly in the long-term.

14.2.4 AFK's measures to mitigate uncertainties

AFK summarised its climate action plan in its 2018 Sustainability Report (Air France KLM, Sustainability Report, 2018):

Our Climate Action Plan

- Pursuing fleet modernisation and contributing to aeronautical research.
- Implementing operational measures, such as applying eco-design principles, weight reduction projects, and route optimisation.
- Using and developing sustainable aviation fuels (SAF).
- Providing information for customers on their travel-related CO₂ emissions and the opportunity to offset these.
- Supporting implementation of the global sector-wide climate agreement (CORSIA).
- Supporting NGO-led environmental programs.

Besides the points described above, other actions can be found in AFK's Sustainability Report and Universal Registration Document:

- Carbon risk hedging – at the financial level, AFK claims to have implemented a carbon credit risk hedging strategy in the form of forward purchases
- Reduce fuel consumption – At the operational level, AFK is “committed to exploring all avenues potentially reducing its fuel consumption and carbon emissions (...) The Group also uses an internal carbon price (price range) when taking a decision on whether to proceed with investments and projects, to factor the carbon risk into its decision-making scenarios.” (Air France KLM, Universal Registration Document, 2019)
- Digitalisation – limit use of paper and prioritise digital boarding cards
- Carbon offsetting – via offsetting programs offered during the ticket booking process or donations in favour of financing flower plantation projects
- Ground operations – replace fossil-fired ramp equipment (baggage trailers, boarding walkways, etc.) with electric equipment
- Lobbying

AFK is a member of the representative associations for the airline industry (IATA, ATAG, A4Em FNAM) which engage in lobbying activities directed at the relevant national, European and international authorities and bodies (ICAO, European Union, supervisory ministries in France and The Netherlands) to promote effective solutions for the environment.

Air France-KLM has always supported the implementation of a market-based mechanism for carbon emissions considering that, provided it is equitable, such a system is more effective from an environmental standpoint than a simple tax. (Air France KLM, Universal Registration Document, 2019)

AFK argues that increases in carbon taxes lead to additional costs for the Group and reduce its ability to invest in energy-efficient aircraft. In response to proposed increases to French passenger duties, Air France-KLM Chief

Executive Ben Smith said new taxes “do not support emissions reductions (...) In fact it’s counterproductive and would deprive us of finances that could otherwise be invested in environmental projects” (Frost & Abnett, 2020).

14.2.5 Possible scenarios and their probabilities

Based on the risks identified above, several scenarios for AFK’s future cash flows can be constructed. The chosen scenarios and their probabilities largely depend on one’s views on the development of the trends described above.

- Regulation:
 - Will the trend of increasing regulation persist?
 - Will legislation be streamlined, to avoid doubling carbon prices on the airline industry?
 - Will the negative economic effects of the pandemic make governments more sensitive to the importance of job creation by the airline industry?
- Consumers:
 - How will the development of greener transportation infrastructure (e.g., rail development) affect AFK’s competitive position?
 - How will climate change awareness and engagement by civil society develop?
 - How will passenger numbers be affected by the recent pandemic (in relation to new remote work possibilities)?
- Effectiveness of AFK’s measures:
 - Will AFK successfully implement measures such as using and developing sustainable aviation fuels (SAF)?
 - How will AFK finance such investments?
 - How will AFK’s lobbying activities and engagement with representative associations shape the legislative landscape?

14.3 ENBW- a German electricity producer

ENBW is an electricity producer from southern Germany that operates a mix of nuclear power plants, coal fired plants and renewable energy installations. ENBW faces at least two major challenges as Germany is phasing out nuclear power and recently decided to do the same with coal fired power plants. These decisions impact ENBW in several ways.

At the *cash flow level*, ENBW must transition energy generation away from CO₂ based sources to renewable sources. At ENBW renewable energies accounted for 32% of the generation mix in 2019, with plans to increase this to 50% by 2025 (Annual Report, 2019).

The impact of the decommissioning of all nuclear power plants is now fairly well understood and its impact on the firm can be seen on the *liability side of the balance sheet*.

Liabilities of ENBW as of 31.12.2019

Equity and liabilities		7,445
Non-current liabilities	Provisions	14,333
	Deferred taxes	890
	Financial liabilities	7,361
	Other liabilities and subsidies	2,156
		24,740
Current liabilities		11,103
Total		43,288

in € million

Breakdown of provisions

Provisions	Pensions	7655.3
	Nuclear	5864.6
	Others	813.2

in € million

The impact of the decision to close coal-based plants on the other hand is not yet fully understood. The firm itself states in its annual report:

Phase-out of coal power: early decommissioning of power plants. The version of the Coal Phase-out Act adopted by the German cabinet and its framework parameters (plans for operators regarding replacement power plants and decommissioning) are open to varying interpretations with respect to the phase-out path. In general, the later decommissioning of brown coal power plants will mean that hard coal power plants are shut down more quickly and thus even new hard coal power plants will be removed from the grid earlier. The German government does not plan to provide compensation for any power plants decommissioned after 2027. We currently identify an increased level of risk in this area.²⁰

A worst-case scenario could be that ENBW faces considerable risk that a substantial part of the asset side of the balance sheet has to be written down. Currently, powerplants account for €4.6 bn. in terms of value. How much of this value is at risk would need to be determined during due-diligence, since the annual report does not provide a break-down of the value attributable to each energy source. Hard coal accounts for 3,586W out of 13,849W installed output.²¹

Looking at the ENBW example, several questions arise:

- 1 Will companies be able to fund the transition of their “brown” side to the green side successfully?
- 2 How can one understand the risk posed to firm’s balance sheets that arise from legacy assets and technologies?

²⁰ ENBW, Integrated Annual Report EnBW, page 108. Accessed 31.08.2020 at https://www.enbw.com/media/bericht/bericht_2019/downloads/integrated-annual-report-2019.pdf

²¹ ENBW, Integrated Annual Report EnBW, page 88.