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Excerpt

Climate Governance: Recoupling the Sustainability and Value Perspectives

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Governance of Sustainability

The Role of the Board of Directors and Management in Sustainable Value Creation

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Climate Governance: Recoupling the Sustainability and Value Perspectives

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Abstract

The race to cope with sustainability and climate challenges is accelerating. Governments calibrate their policies to speed up the transformation towards climate neutrality or even net zero. Investors restructure their portfolios to comply with ambitions as set out in the Paris agreement. Companies have also started the journey to transform their businesses. As such, they are challenged to innovate their business models while at the same time generating value for shareholders and addressing broader stakeholder expectations.

Executive management is confronted with climate-related questions on a day-to-day basis. These may involve operations and compliance but also require strategic decision-making. Therefore, boards of directors (BoD) need to integrate climate considerations into their governance approaches without losing sight of the key mandate they have been given – to govern the company and safeguard shareholders' interests. This implies more of a burden for BoDs.

This article discusses how climate and sustainability challenges affect a company's value management. It also reflects how they might be integrated into common BoD governance practices. Additionally, suggestions are provided on how BoD governance could be adjusted to balance the burden for BoDs and manage a company's climate transformation effectively.

1 Climate Change – A New Baseline for Corporate Governance

Climate transformation enters the agendas of corporate boards as different sectors experience climate risk exposures (European Bank of Reconstruction and Development 2017, 20-22) and different stakeholder groups voice their expectations.

- Customers increasingly demand climate-friendly products, especially end consumers. Industrial B2B customers, on the one hand, intend to reduce their carbon footprint (Scope 1, 2, 3 emissions) and, on the other hand, have to demonstrate following the path towards climate neutrality and net zero to their customers (Galonske, 2019a, 2021). In some segments, this is evolving as a *conditio sine qua non* to stay in business whereas other segments move slowly to define their approach to climate challenges.
- Suppliers seek to secure their commercial relationships and hence are willing to incorporate climate considerations into their offering. Therefore, customers have to frame their expectations and signal a 'willingness to pay' for revised, climate-friendly specifications.
- Employees expect evidence that their jobs remain secure and lucrative. They
 also look for meaning and purpose from their work experience.
- Equity and debt investors value climate-friendly businesses over their peers.
 This is reflected in sustainability ratings and valuations for equity participation and differentiating credit terms.
- Regulators and policymakers, especially in Europe, are tightening the grip
 to facilitate climate transformation by weaving climate considerations
 into different regulatory frameworks (European Commission 2021a, b, c;
 2022a, b).

2 Climate Challenges for Boards of Directors

Climate-related topics are not only addressed by senior executives and corporate functions but also by boards of directors (BoD) considering integrating environmental, social, and governance considerations (ESG) – which also comprise climate-related actions – more stringently into their perimeter of responsibility.

What is the nature of climate-related conversations in BoDs? As a starting point, corporate boards (in Europe) have to ensure compliance with legal requirements, act in support and the interest of a company's 'well-being' and its'

shareholders respectively stakeholders (without pursuing personal interests), provide strategic leadership, and initiate and maintain effective organization and processes¹ (Squire Patton Boggs 2021). As such, they have to define how the executive teams should address climate related actions and how the BoDs might also want to integrate climate governance elements into the existing governance set-up and agendas. This requires new skill sets and continuous calibration, interpretation and decision making how to transform businesses.

3 Value Management in a Decarbonizing World

Currently, addressing sustainability and climate agendas is very much delegated to corporate functions and technical experts. From a board perspective, it is a widespread practice to view 'sustainability and climate' as another item on the compliance checklist. This disregards the fact that a) capital markets are increasingly interested in how companies score on 'sustainability and climate' and b) implementing net zero aspirations requires challenging the core of the business and operating models. Just 'fiddling' with energy purchases, isolated circular initiatives, and off-setting of the carbon footprint by acquiring carbon credits fall short of corporate board ambitions to protect and facilitate healthy and profitable businesses (Keck and Tushman 1993). Some companies across industrial sectors have already positioned themselves as climate transformation leaders and are setting standards (Hawcock 2021). However, several companies still have to define their climate response.

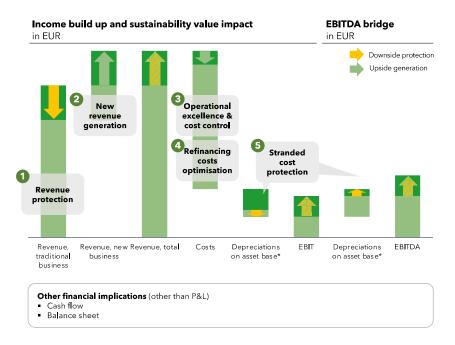
Eventually, not only do negative climate-related financial impacts² on company profit and loss statements (P&Ls), balance sheets, and cash flows need to be avoided (Ding et al. 2021; Tripsas and Gavetti 2000), but value needs to be created as a new generation of carbon light businesses is born. This is not a theoretical exercise; instead, it requires dedicated management and board guidance as a company has to be managed through a transition phase towards carbon-light or even net zero business and operating models. So, what are the sustainability value levers and specifically climate value levers to address in this transition (see Exhibit 1)?

¹ Overview of main obligations (Belgium, Czech Republic, France, Germany, Italy, Poland, Slovak Republic, Spain, England, Wales, and Switzerland); different emphasis across countries

² The International Sustainability Standards Board (IFRS) currently drafts how to integrate sustainability and financial reporting (2022 a, b).

- 1. Revenue protection: Decarbonizing the legacy business is the key objective of many companies. It is the prerequisite to retaining revenues and earnings as customers seek carbon-light products and service offerings. Otherwise, businesses might even become obsolete (and devalued) as they lose their revenue and earnings potential. Transforming a traditional business and potentially avoiding or delaying a shake-out or closure also has a value impact (which is furthermore recognized in the balance sheet).
 - Example: Substitution of traditional engines by early electric motors and hybrid engines in conventionally designed cars (automotive original equipment manufacturers (OEMs)).
- 2. New revenue generation: Identifying and developing new businesses based on changing customer needs, market structure, and regulatory demands is another angle of climate value governance.
 - Example: Evolving new business and service models in transportation with the philosophy to move away from asset ownership and towards asset use and service business models (Galonske 2019b), such as scooters, car sharing, or urban shuttles (Uber, Moia).
- 3. Operational excellence and cost control: Transforming the two above-mentioned revenue sources does not come without cost. Decarbonizing these revenue streams leads to layering on additional costs either one-time transformation costs (e.g. business and product development) or even higher, ongoing costs (e.g. higher energy or process costs, sales/marketing costs, and costs of technology risks). Controlling and reducing potential cost increases linked to low carbon and climate-friendly offerings is key to protecting profitability. Additionally, cost-down benefits might be shared with customers to stabilize demand and win new customers (with spill-over effects accounted for in revenues).
 - Examples: Life cycle services potentially also linked to subscriptions are examples of evolving customer-centric carbon-light business models that aim to reduce the Total Cost of Ownership (TCO) for customers (SEW Eurodrives, Viessmann).
- 4. **Refinancing cost optimization:** Cost of debt lines of credit and corporate bonds for climate-friendly businesses come at a discount³ compared to the financing of traditional businesses.
 - Example: Issuance of green bonds or financing of carbon-light activities associated with lower financing costs (E.ON) (Nhede 2021; E.ON 2022).

³ Sustainability-linked Bonds (SLBs) and Loans (SLLs)



*Current and fixed assets; fixed assets are potentially more exposed to sustainability value impact.

Exhibit 1: Sustainability value and operational levers (Silverbergh Partners 2022)

5. Stranded cost protection: If the asset base of a legacy business faces consistent pressure on its earning power – and not only temporarily as expressed by sustainable value levers 1-3 – this may be subject to an impairment which again would be reflected in the balance sheet and P&L (Caldecot et al. 2016, 5ff). This can be avoided by starting a transformation journey early on and by anticipating regulatory developments to potentially reduce transformation pressure and costs.

Example: Infrastructure assets with stable cash flows (Galonske 2020) and industrial assets (repositioning of tourist destinations in the Alps to maintain cash flows; technical upgrades and lower emissions, e.g. power plants, coating lines).

If all these value levers are considered in aggregate, ideally, a profitability slip can be avoided, and in best-case scenarios, profitability can even be increased as a company becomes a leader in decarbonizing its business.

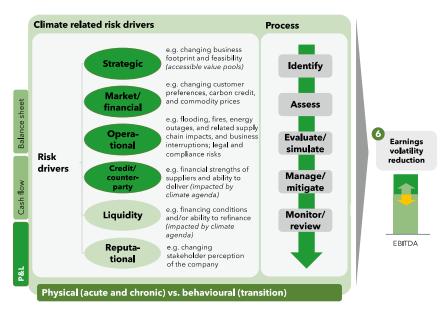


Exhibit 2: Sustainability value and risk drivers (Silverbergh Partners 2022)

However, financial performance is not only determined by the level but also the stability of profits. Hence, avoiding unexpected climate-induced impacts and preparing for potential negative financial consequences needs to be on a board's agenda and aligned with stakeholder preferences (see Exhibit 2).

6. Earnings volatility reduction: Climate-related risk drivers can be identified and treated (Smith 2021) within the established risk clusters. A company's risk inventory should also be expanded to capture climate risks within a company's risk management process. The exposure to climate risk may, however, differ by type of sector (EBRD 2017, 20-21).

Example: Generac – a US utility and generator company – exhibits a rising cost base but adjusts its business portfolio and sales strategy to overcompensate risks with opportunities (Phillips 2021).

In most cases, a company's operational performance⁴ will determine its valuation (see Exhibit 3).

⁴ In this article, valuations of companies without a proven and profitable business model are not discussed.

- 7. Transformation value enhancement: As such, a change in earnings will lead to an adjustment of enterprise value (EV) linked to climate-related (risk-adjusted)⁵ improvements of operational and financial performance. If the equity investors' perspective on the company does not change fundamentally, we can assume that the change of incremental earnings will also impact the valuation accordingly (ceteris paribus).⁶
 - Example: Patagonia, the leader of sustainable outdoor clothing, has exhibited superior double-digit growth over several years by 'only' continuing to sell its established but sustainable line of clothing⁷ (Demkes 2020).
- 8. **Sustainability value positioning:** However, a real breakthrough in the *climate value management agenda* would be, if investors recognise a company's success in the transformation towards a profitable, growing, carbonlight business. This is reflected in higher valuation multiples.
 - Example: Profitable CleanTech companies, as contained in Mirae Asset Groups CleanTech ETF (CTEC), increased their EV/EBITDA multiples from mid-2020 to >30 by early 2021. During 2021, the multiples declined but by the end of 2021 remained significantly above mid-2020 levels. (finerva, 2022) At the same time, relevant S&P 500 sector multiples for IT (~23) remained flat, whereas multiples of energy companies declined (from 16 to 9) (Siblis Research 2022).

⁵ As captured in previous value driver 6.

⁶ Other valuation methods than EV/EBITDA can be applied. This method is used for illustration purposes. Alternative valuation methodologies and the pros and cons of these methodologies will not be discussed in this context.

⁷ Even though the company is not listed, and financials are not known in detail, superior revenue growth is estimated by sector experts. As Patagonia maintains a premium price point and is committed to preserving profitability (without making it the primary goal), enterprise value should increase (at any 'shadow' valuation multiple).

Multiple of earnings valuation

in EUR

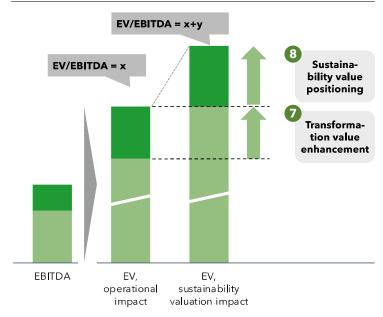


Exhibit 3: Sustainability value and valuation levers (Silverbergh Partners 2022)

4 Climate Value Governance on Corporate Boards

As climate value levers have now been identified, how might these value levers be integrated into a board's value management agenda and structure (see Exhibit 4)?

Per definition, the board takes final responsibility for all climate value levers even if the management of these value levers is delegated to the executive management. As the climate value levers do not only require decisions on clearly defined strategic or operational questions (Task Force for Climate-Related Disclosure 2017) but are embedded into the fast evolution of regulation, capital markets, and broader customer sentiment, a structured approach is required to adjust the governance of corporate boards (World Economic Forum 2019) and to ensure the implementation of climate transformation roadmaps accordingly. To support appropriate treatment of topics and line-up of expertise and capacity, it has become common practice to delegate overall board tasks to board committees.

BoD governance bodies	Mandate	Role – Climate governance	Responsibilities by value lever
BoD	Ensures that company operates within legal boundaries in the interest of its stakeholders; governs the company	Facilitates climate-related value creation, avoids leakages; provides steer and positioning with stakeholders	1234 5678
Typical core commi	ittees (>95% of leading companies)		
Audit	Ensures quality financial reporting and controls; oversight of handling financial risks	Audits financial impact of climate change and companies' climate-related activities and performance	1234
Remuneration	Advises on senior executive and board remuneration	Takes remuneration view to address climate change and incentives of board and senior management members	1
Nomination/ Governance	Ensures good governance; reviews and recommends board composition and performance, may get involved with senior executive succession planning	Identifies board and senior management talent to address companies' climate transformation challenges (strategic, technical,)	1
Most common add	itional committees (<95% and >10% of lead	ding companies)*	
Risk	Oversees risk function and integrated company risk exposure; advises on methodology, risk taking, and mitigation	Facilitates completion of risk register and evaluation of climate & sustainability risks; provides advise on priorities and mitigation	5 6 7 8
Health, Safety and Environment (HSE)	Oversees HSE function and companies' HSE performance	Provides suggestions & supervision how to cope with climate implications as part of broader HSE agenda	
Corporate Social Responsibility	Provides guidance on ethical, social, environmental topics, and community involvement	Provides suggestions for corporate climate initiatives, implementation of SDGs and communication	8
	Responsibilities for Sustainability value lev	Today, common Leading Supportiners Future Potential additional clir	ng mate governance suppo

Note: Sample - US (S&P 500), UK (FTSE 150), Nordic (OMX, OBX), CH (SMI)

* CH: 'The risk committee is the most commonly found after the core audit, remuneration, and nomination committees. [...] Committees dealing with innovation, digital, and technology are the next most popular, established at 10 company boards [50 %] in the sample'.

Exhibit 4: Sustainability value and board governance of value levers (Spencer Stuart 2019, 2021 a, b, c; Silverbergh Partners 2022)

A common structure of board committees has evolved over time. Audit, remuneration, and nomination/governance committees can be observed in >95 % of all listed companies in the US, UK, Nordics, and Switzerland, whereas Risk⁸, Health and safety, and Corporate social responsibility are not as established but still observable (Spencer Stuart 2018, 2021a, b, c). ESG related committees are in the discussion or are in the process of being established in some companies. This however requires defining interfaces with the established governance structure and responsibilities to influence a company's strategy and operating model.

⁸ In Switzerland, the Risk committee is the most common additional committee. Health and safety and Corporate social responsibility are not as established as in other geographies.

How could the common board committees structure integrate with climate governance requirements, and what are the sustainability value management findings for corporate board climate governance set-ups?

- Audit committees need to 'pick up the ball' to ensure value protection and creation as companies enter the 'choppy waters' of climate transformation. They are the guardians and experts of a company's financial agenda, which again plays out in all climate value levers. The traditional terminology 'audit committee' insinuates reactive behavior. However, to safeguard value creation successfully, audit committees need to get even more involved with strategic, operational, and technical issues. This is the basis for interpreting implications for a company's financial performance. Consequently, future compositions of audit committees might adhere to the fact that a more diversified skill set beyond traditional finance expertise might be required to perform this obligation successfully.
- On the HR front, remuneration and nomination committees need to align how to integrate, incentivize and develop talent tasked with tackling the climate transformation of a company. They might also form a view on how to strike the balance of climate expertise on the board level as oversight capacity (Dalton et al. 1999), business leaders with a climate transformation mindset and climate experts to inform the strategic and operational climate agendas. Without the right and diverse talent (Carpenter and Westphal 2001) and board composition (Desai 2016), initiating change to protect existing revenue streams and generate new revenue streams will be difficult to achieve.
- Risk committees should integrate climate-related risk drivers into their risk register and risk management process. This is within the core of risk management functions and risk committees' expertise. With regard to climate risk, transmission channels need to be understood. (Bank of International Settlements 2021, 10ff). Beyond their traditional perimeter of responsibilities, which to a large degree deals with P&L and cash flow items, they might deepen their view on potential balance sheet implications. For downside protections, they might consider which assets might potentially be subject to a climate-induced re-valuation (stranded assets). Additionally, they might monitor capital market perception and advise on how EV volatility might be addressed.⁹

⁹ This again will influence the P&L as it informs refinancing costs. Potential perception of a value at risk might trigger an impairment which again would require the involvement of the audit committee.

Corporate social responsibility committees influence public perception, which might contribute to substantiating the view of a 'value climate growth stock'. Additionally, they can facilitate the implementation of Sustainable Development Goals (SDGs). This, however, will require coordination between Corporate social responsibility committees and initiatives and the companies' offerings and operations.¹⁰

Aligning climate considerations into corporate governance set-ups requires a coordinated approach. Boards need to decide how they want to address climate transformation (and sustainability), govern these topics and guide the set-up of road maps and their implementation.

Just communicating climate convictions and commitments will no longer be sufficient. Climate-related activities are important from a broader stakeholder perspective but also need to be linked back to the purpose of a company – to create value for its stakeholders by generating profit, and ensuring employment, but also by integrating with broader stakeholder expectations and preserving natural resources. (Elkington 2018). Any bias towards one of these elements will result in an imbalance, placing climate objectives at risk.

5 Summary and Outlook

It has been discussed how climate agendas affect value levers and how these climate value levers might be integrated with established corporate governance and committee structures.

Especially Audit committees need to upgrade their climate expertise beyond the classic finance skill set. They will need to form a view on how climate considerations and transformations affect a company's financial performance. As such, they can and should elevate the debate if they perceive that the BoDs should decide on key directions of the company and climate-related topics. As Risk committees specialize in volatility and contribute to steering the company's value agenda, they might integrate climate risk and global warming-induced valuations of volatility into their area of responsibility.

Remuneration and nomination committees are advised to build expertise on 'climate talent', which will support the climate transformation of the com-

¹⁰ Alignment with investor communications on general guidelines is feasible to ensure consistent communication across all channels.

pany, whereas climate-related communication might also be influenced by **corporate social responsibility committees.**

Board governance should be reviewed and potentially amended to address climate value levers and, ultimately, manage a company through the climate transformation. Only if companies do not lose sight of what defines success in these challenging times, they will be well-positioned to evolve as 'climate transformations winners' with healthy and profitable carbon-light businesses.

References

- Bank for International Settlements (BIS) (2021). Basel Committee on Banking Supervisions, Climate-related risk drivers and their transmission channels, Basel. https://www.bis.org/bcbs/publ/d517.htm
- Caldecot. B. et al. (2016). Inter-American Development Bank (IDB), Stranded assets: a climate risk challenge, New York.
- Carpenter, M. A., & Westphal, J. D. (2001). The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision making. Academy of Management Journal, 44, 639–660.
- Demkes, E. (2020, April 22). The more Patagonia rejects consumerism, the more the brand sells. The Correspondent. https://thecorrespondent.com/424/the-more-patagonia-rejects-consumerism-the-more-the-brand-sells
- Desai, V. M. (2016). The behavioral theory of the (governed) firm: Corporate board influences on organizations' responses to performance shortfalls. Academy of Management Journal, 59, 860–879.
- Dalton, D. R. et al. (1999). Number of directors and financial performance: A metaanalysis. Academy of Management Journal, 674–686.
- Ding, R. et al. (2021). The impact of climate risk on earnings management: International evidence. Journal of Accounting and Public Policy, 40(2), March–April 2021.
- Elkington, J. (2018). 25 years ago I coined the phrase "Triple Bottom Line." Here's why it's time to rethink it, in: Harvard Business Review, https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it
- E.ON (2022). Green Bond Framework,. https://www.eon.com/en/investor-relations/bonds/green-bonds.html
- European Bank of Reconstruction and Development (EBRD) (2017). Advancing TCFD Guidance on Physical Climate Risks and Opportunities, London. https://www.ebrd.com/news/events/advancing-tcfd-guidance-on-physical-climate-risk-and-opportunities.html
- European Commission (2021a). Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting.

- European Commission (2021b). COMMISSION DELEGATED REGULATION (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives. Official Journal of the European Union.
- European Commission (2022a). COMMISSION DELEGATED REGULATION (EU).../... amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors and Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities. DRAFT agreed by European Commission on 2 February 2022.
- European Commission (2022b). Just and sustainable economy: Commission lays down rules for companies to respect human rights and environment in global value chains. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145
- finerva (2022). CleanTech 2022 Valuation Multiples. https://finerva.com/
- Galonske, B. (2021). Regionales Klimamanagement an COP21-Zielen ausrichten Von privatwirtschaftlichen Transformationsansätzen lernen. In Sturn/ Klüh, Der Staat in der großen Transformation, Jahrbuch Normative und institutionelle Grundfragen der Ökonomik, Band 19, Metropolis-Verlag, 283–307.
- Galonske, B. (2020). Infrastructure investing Increasing financial stability and prosperity. In Transparency Task Force: Why we must rebuild trustworthiness and confidence in financial services; and how we can do it, London, 229 233.
- Galonske, B. (2019a). Klimanotstand, was nun ...? Silverbergh Partners Insights. htt-ps://www.silverbergh.com/files/SP-Insights_1902_Klimanotstand_Was-nun.pdf
- Galonske, B. (2019b). Funding games Digital technology in mobility. In The Future of Transportation, Executive Briefing, 120–122.
- Hawcock, N. (2021, 27 May). Europe's Climate Leaders 2021: interactive listing. Financial Times. https://www.ft.com/climate-leaders-europe-2021
- International Sustainability Standards Board (IFRS) (2022a). [Draft] IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information, London
- International Sustainability Standards Board (IFRS) (2022b). Staff Request for Feedback on the staff draft of the IFRS® Sustainability Disclosure Taxonomy, London
- Keck, S. L. & Tushman, M. L. (1993). Environmental and organizational context and executive team structure. Academy of Management Journal, 36, 1314–1344.
- Nhede, N. (2021, March 8). E.ON publishes new framework to accelerate green financing. Smart Energy International. https://www.smart-energy.com/finance-investment/e-on-publishes-new-green-bond-framework-to-accelerate-green-financing/
- Phillips, M. (2021, September 15). Climate change calls for backup power, and one company cashes. New York Times.
- Siblis Research (2022). EV/EBITDA (Enterprise Multiple) by Sector/Industry 1995–2022, Helsinki, https://siblisresearch.com/data/ev-ebitda-multiple/

- Smith, P. (2021). UN Environment Programme, The climate risk landscape A comprehensive overview of climate risk assessment methodologies, New York.
- Spencer Stuart (2019). 2019 Nordic Spencer Stuart Board Index, https://www.spencerstuart.com/-/media/2020/february/nordicbi_2019_web.pdf
- Spencer Stuart (2021a). 2021 Switzerland Spencer Stuart Board Index, https://www.spencerstuart.com/research-and-insight/switzerland-board-index/committees
- Spencer Stuart (2021b). 2021 UK Spencer Stuart Board Index, https://www.spencerstuart.com/research-and-insight/uk-board-index
- Spencer Stuart (2021c). 2021 US Spencer Stuart Board Index, https://www.spencerstuart.com/research-and-insight/us-board-index
- Squire Patton Boggs (2021). Quick guides to directors' duties across Europe Overview of considerations for directors when a company is in financial difficulty, Washington. https://www.squirepattonboggs.com/en/insights/publications/2021/12/quick-guides-to-directors-duties-across-europe
- Task Force for Climate-Related Disclosure (TCFD) (2017). Recommendations of the Task Force on Climate-related Financial Disclosures, New York.
- Tripsas, M. & Gavetti, G. (2000). Capabilities, cognition, and inertia: Evidence from digital imaging. Strategic Management Journal, 21, 1147–1161.World Economic Forum (2019). How to set up effective climate governance on corporate boards Guiding principles and questions, Geneva. https://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf
- World Economic Forum (2019). How to set up effective climate governance on corporate boards Guiding principles and questions, Geneva. https://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf