

Don't believe the hype? Imagined business futures and overpromising for a decarbonized economy

Frisch, Thomas

Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

Gefördert durch die Deutsche Forschungsgemeinschaft (DFG) - Projektnummer 390683824 / Funded by the German Research Foundation (DFG) - Project number 390683824

Empfohlene Zitierung / Suggested Citation:

Frisch, T. (2023). Don't believe the hype? Imagined business futures and overpromising for a decarbonized economy. *TATuP - Zeitschrift für Technikfolgenabschätzung in Theorie und Praxis / Journal for Technology Assessment in Theory and Practice*, 32(3), 54-59. <https://doi.org/10.14512/tatup.32.3.54>

Nutzungsbedingungen:

Dieser Text wird unter einer CC BY Lizenz (Namensnennung) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier: <https://creativecommons.org/licenses/by/4.0/deed.de>

Terms of use:

This document is made available under a CC BY Licence (Attribution). For more information see: <https://creativecommons.org/licenses/by/4.0>

RESEARCH ARTICLE

Don't believe the hype?: Imagined business futures and overpromising for a decarbonized economy

Thomas Frisch*¹ 

54

Abstract • International climate governance is increasingly focusing on the role of the private sector. This article explores how companies translate the narrative of deep decarbonization into their entrepreneurial visions of the future. Based on a qualitative multiple case study, it shows that overpromising is an essential feature of imagined business futures, and identifies three forms of overpromising: contradiction, exaggeration, and commitment. The research article contributes to the emerging field of hype and overpromising by proposing a contextual and nuanced understanding of overpromising. The results illustrate the power of desirable transformation narratives, but also their limitations and side effects.

Don't believe the hype?: Unternehmerische Zukunftsvisionen und Overpromising für eine dekarbonisierte Wirtschaft

Zusammenfassung • Die internationale Klimapolitik nimmt zunehmend die Rolle des Privatsektors in den Blick. Der Beitrag untersucht, wie Unternehmen das Narrativ einer tiefgreifenden Dekarbonisierung in unternehmensspezifische Zukunftsvisionen übersetzen. Auf der Grundlage einer qualitativen vergleichenden Fallstudie wird gezeigt, dass Overpromising ein wesentliches Merkmal solcher Zukunftsvisionen ist. Es werden drei Formen von Overpromising herausgearbeitet: Widerspruch, Übertreibung und Selbstverpflichtung. Der Artikel leistet einen Beitrag zum noch jungen Forschungsfeld von Hype und Overpromising, indem er ein differenziertes und kontextabhängiges Verständnis von Overpromising vorschlägt. Die Ergebnisse zeigen die Macht wünschenswerter Transformationsnarrative, aber auch ihre Grenzen und Nebeneffekte.

* Corresponding author: thomas.frisch@uni-hamburg.de


¹ Faculty of Business, Economics and Social Sciences,
University of Hamburg, Hamburg, DE

Keywords • decarbonization, imagined futures, overpromising, companies, sociology of expectations

This article is part of the Special topic "Technology hype: Dealing with bold expectations and overpromising" edited by J. Bareis, M. Roßmann and F. Bordignon. <https://doi.org/10.14512/tatup.32.3.10>

Introduction

Companies tend to perceive climate change as a risk. However, a counternarrative has been gathering pace since the Paris Agreement in 2015. This metanarrative (over)emphasizes the opportunities of a decarbonized economy and can be connected to an "incantatory climate governance" model in international climate policy (Aykut et al. 2021, p. 519). A telling example of such an opportunity narrative are companies' claims that they will become climate-neutral, net-zero, or even climate-negative. Critical studies have shown that most of these claims lack a clear understanding of what net-zero means (Fankhauser et al. 2022) and do not hold up to scrutiny, since they exclude certain business activities, lack concrete action plans, or overestimate the maturity and scalability of new technologies, such as carbon removal (Net Zero Tracker 2023). Meanwhile, global greenhouse gas (GHG) emissions continue to rise, not least because of insufficient corporate responses to climate change (Engels et al. 2023). Set in this context, companies' climate commitments may not be taken seriously or could even lead to further 'climate delay' (Lamb et al. 2020) and 'time-buying' for a fossil-fuel-based economy (Boettcher et al. 2021). This article explores how companies construct imagined business futures in response to decarbonization pressure and argues that overpromising is a distinct feature of these imagined business futures. Based on a case study of 20 international companies from various industries, it identifies three forms of overpromising: contradiction, exaggeration, and commitment.

 © 2023 by the authors; licensee oekom. This Open Access article is licensed under a Creative Commons Attribution 4.0 International License (CC BY).
<https://doi.org/10.14512/tatup.32.3.54>
Received: 12. 06. 2023; revised version accepted: 20. 10. 2023;
published online: 13. 12. 2023 (peer review)

Theoretical framework

Deep decarbonization means drastically reducing the amount of CO₂ and other GHG emissions in the atmosphere and is imperative for reaching the goals of the Paris Agreement (Geels et al. 2017). The energy transition away from fossil fuels is crucial, yet deep decarbonization requires a radical change in how the economy as a whole is organized (Sovacool et al. 2023) – and it is arguably the most important political project in global climate governance. Since multiple narratives about deep decarbonization compete for hegemony in public discourse, it would be naïve to assume the dominance of a single one or to claim that there exist clear distinctions between opposing narratives. Instead, narratives co-exist, overlap, emerge in different variations, change over time, and they require translations in different contexts (Beck et al. 2021). In the wake of the “incantatory climate governance” model (Aykut et al. 2021, p. 519), companies are increasingly under pressure to clarify their roles within a deep decarbonization scenario. In response, they construct imagined business futures, or – in other words – visions of how they imagine doing business in a deeply decarbonized economy.

Constructing imagined business futures for deep decarbonization

Beckert’s (2016, 2021) concept of imagined futures demonstrates how fictional expectations and narratives are an inherent feature of capitalism and an important source for economic actors’ long-term decision-making, especially in times of uncertainty. Imagined futures are projections of how the future could unfold, a complex *mélange* of known facts, informed assumptions, and judgments about probable developments, enriched with emotional components (Beckert 2021). Credible imagined futures become performative and are powerful resources for guiding organizational strategies and decisions. In our case, companies need to translate the vague imaginability of deep decarbonization into concrete, company-specific, and, most importantly, desirable scenarios, which presents a complex challenge for companies, particularly those in carbon-intensive sectors (Engels et al. 2020).

Companies construct imagined futures to influence and align with the expectations of their institutional environments, of their business partners, and their stakeholders (Beckert 2021). These futures are communicated via narratives and legitimized by “instruments of imagination” (Beckert 2021, p. 1), for example, cognitive devices, such as different methods of planning, forecasting, or scenario-design. Narratives include rhetorical means, such as metaphors or personification, and make use of numbers, images, and graphs (Beckert 2021). Examples in the context of deep decarbonization include the metaphor of green growth, environmental key performance indicators, colorful charts of emission reduction pathways, glossy images of pilot projects, and portraits of people who drive change in the company.

Overpromising and the creation of unrealistic expectations

The disconnection between what companies promise to do and what they actually do has been studied by institutional theory on organizational decoupling (Powell and DiMaggio 1991; Meyer and Rowan 1977), particularly related to Corporate Social Responsibility (Velte 2023). It is well understood how decoupling is rooted in an organization’s search for legitimacy gains vis-à-vis external stakeholders, juxtaposed with structural constraints or certain inter-organizational logics (Suchman 1995; Powell and DiMaggio 1991). Similarly, future-making practices are full of implicit values and presuppositions. Thus, they act as frames of potentiality that require constant re-interpretation and adaptation rather than unambiguous scripts for action. However, there is a difference between necessary flexibility, considering the uncertainty of the future, and generating unrealistic expectations.

The Sociology of Expectations (SoE) is insightful for understanding how unrealistic expectations build a fruitful ground for hype and overpromising. SoE is concerned with the performativity of desirable expectations and is typically applied to innovation processes or early stages of technology development (Borup et al. 2006). It has shown how expectations are key to understanding social and technological change by mobilizing resources and aligning actors toward a desired future. One line of research focuses on the notion of hype, i.e. “a peak of positive expectations, without claiming that these expectations are necessarily and intrinsically inflated” (Bakker and Budde 2012, p. 553). Research has investigated the formation and development of hype, its potential for generating action, and its temporal dimension, particularly the so-called ‘hype cycle’ (Bakker and Budde 2012; Van Lente et al. 2013). Recent studies have suggested a more gradual and context-dependent understanding of hype as a particular form of exaggeration (Intemann 2022) shifting the question toward when or to what extent overpromising is appropriate or not. Others pointed to the fact that desirable and undesirable futures follow distinct but similar logics (Kester et al. 2020). Some authors have started to investigate the mechanisms behind hype creation, including the linguistic features of hype (Millar et al. 2022) and the practices that fuel and prevent hype or those that are suitable for its deconstruction.

This article investigates deep decarbonization as a site of ‘hyperprojectivity’ (Mische 2014), where companies engage in ‘anticipatory practices’ (Alvial-Palavicino and Konrad 2019), such as developing imagined business futures for a decarbonized economy. It argues for a context-specific and nuanced understanding of overpromising and identifies three forms of overpromising in companies’ imagined futures: contradiction, exaggeration, and commitment. While overpromising is essential (and inevitable) for the construction of imagined business futures, each type is characterized by different underlying dynamics and not all types of overpromising are problematic, *per se*.

Research design

The article follows an explorative, qualitative research design. It is based on a multiple case study realized within a longitudinal research project covering three years of interaction with 20 panel companies from Brazil, Germany, Hongkong, Japan, and the United States. The methods feeding into the analysis are: three rounds of semi-structured group interviews with sustainability managers; a review of publicly available documents; and interaction with company representatives as part of an ongoing research cooperation. Interview transcripts and company reports serve as primary material for the analysis, supplemented by field notes.

Interviews took place annually between 2020 and 2023. They covered four recurring topics:

1. climate goals and strategy;
2. climate management activities, achievements, and barriers;
3. organizational implementation;
4. external influences and stakeholder interaction.

The Hamburg-based project team organized and carried out the interviews. Academic partners supported arranging and holding the interviews in Hongkong and Japan. The author was involved as an interviewer with Brazilian, German, and US companies.

The author analyzed the transcripts and reports following a Grounded Theory approach with coding until theoretical saturation along three steps of open, axial, and selective coding

(Strübing 2021). The topic of overpromising emerged through constantly engaging with the material, and it became more prominent with the increase of corporate net-zero commitments and parallel reports about the low robustness of these commitments. As there were no direct questions about hype and overpromising, the findings are the result of a thorough reading of transcripts and reports that has necessarily been filtered through the interpretive lens of the author. Due to the short format of the paper, the focus lies on the most prominent themes identified in the material.

The sampling aimed for variety to avoid industry- or country-specific biases. The following criteria were applied for inclusion in the sample: a minimum of three companies per country, from different sectors, with high direct or indirect emissions and capital market orientation. Several companies qualified for inclusion and were approached via networks and local academic partners. Twenty-two companies agreed to participate in a long-term study with annual interviews and regular exchanges (Fig. 1), but two were excluded from the analysis: one ceased to participate after the first year and the other was an insurance company without high emissions. Thus, the final sample comprises 20 companies covering different industries and occupying diverse positions along the value chain. Some are at the core of the energy transition or heavily dependent on fossil fuels, while others are closer to end consumers. All companies operate internationally and are at least indirectly influenced by different regulations due to their supply chains or main customers. They

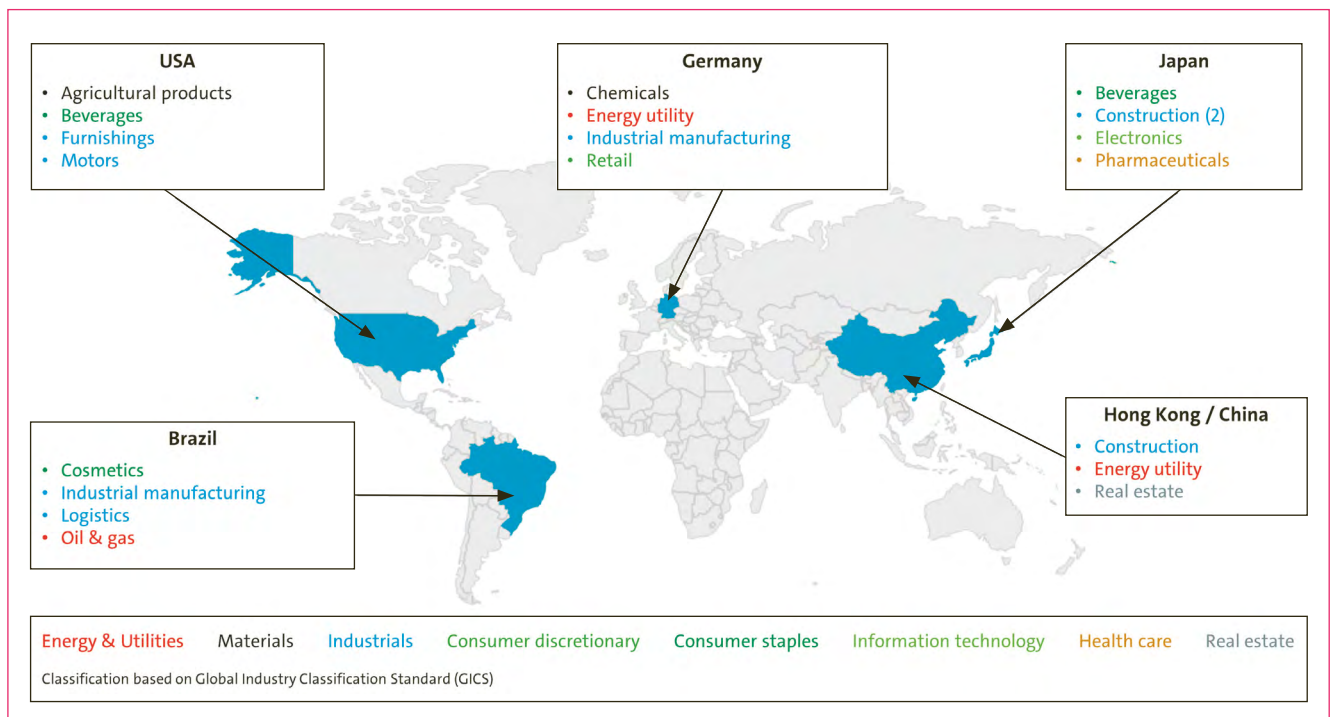


Fig. 1: Sample overview by D°Grees project (Decarbonization: Global Research on Effects in Enterprises and Societies) at University of Hamburg.

Source: author's own compilation

differ in size, revenue, business model, and product portfolio, as well as in the scale, feasibility, and achieved level of transformation.

The combination of a qualitative approach and a huge variety in the cases allows for an in-depth study of company-specific factors and a more comprehensive perspective. However, there is no intention for a comparison based on country, sector, or size, and given the small number of cases, nor is there any legitimacy for this comparison. Instead, the analysis aims to find similarities in the ways companies speak and write about their imagined business futures. This requires reducing the complexity of each case and disregarding influential factors, such as sector-specific challenges or regulatory differences. Yet, the goal of this research is to open up the field of corporate future-making practices for the study of overpromising and to provide resources for follow-up research.

Analysis

Overpromising as contradiction

Overpromising as contradiction is characterized by ignoring, repressing, or downplaying apparent tensions between the necessity for decarbonization and other strategic company goals. Two examples were particularly prominent in the empirical material: business growth versus emission reduction and cooperation versus competition. Many companies claim to have sustainability at the center of their strategies or speak of sustainable growth as a new strategic direction. However, the conflict between growth and absolute emission reduction necessary for deep decarbonization is rarely made explicit or framed as a challenge to overcome: *“You can grow economically, but you have to find ways to decouple emissions from that and bring them down. And I think that is the huge challenge that not only we are facing, but somehow all the players in the field.”* (German company, March 2023) Companies are aware of the difficulty but do not question growth as a goal, which strengthens the overall narrative that capitalism can become ‘green’ or ‘sustainable’. However, a recent study calculated that the decoupling rates between emission reductions and economic growth of high-income countries would need to increase by a factor of ten by 2025 to meet these countries’ fair-share contributions to the 1.5°C target, i.e. considering a country’s historical emissions and its capability to reduce them (Vogel and Hickel 2023). Such an increase in decoupling would require either a radically different type of economic activity – i.e. a departure from the growth imperative – or a quantum leap in technological development, both of which seem very unlikely.

A second area of conflict exists between cooperation and competition: *“There is a sense of teamwork that we have to be part of this trend in Japan, but at the same time, it has become an area of competition, and we are competing to be the first to introduce this area of expertise to the world and increase its value.”* (Japanese company, May 2022) Climate action is a

complex problem and requires concerted action that goes beyond common levels of cooperation in the economy. Companies have expanded collaborative activities with a wide range of stakeholders, particularly with regard to the supply chain, customers, and, to some extent, competitors. However, cooperation predominantly centers on data collection in a supplier-customer relationship, or knowledge exchange and advocacy in initiatives in industry associations or between climate leaders across sectors. While this provides resources and incentives for emission reduction activities, much more cooperation is required to realize a deep decarbonization of emission-intensive industries, particularly in terms of technology and infrastructure development.

As these two examples illustrate, overpromising as contradiction is rooted in some of the defining logics of capitalism and represents a major obstacle to reaching deep decarbonization. Companies as profit-oriented, competitive organizations will not be able to overcome this type of overpromising without systemic changes. However, there is a strong interest within the global economy and its existing power structures to maintain the illusion of a possible decarbonized business future with “continued growth in demand and profit, [but] without substantial contestation and trade-offs” (Tilsted et al. 2023, p. 6).

Overpromising as exaggeration

Critical studies have shown that companies exaggerate in various ways when speaking about their decarbonization plans: by excluding certain business areas or emission categories from their climate targets, by employing strategic or selective disclosures about emissions, and by overestimating the (future) demand for low-carbon products or the scalability of emergent technologies (Net Zero Tracker 2023; Velte 2023). In contrast to contradiction, exaggeration is not a systemic *failure* of the current global economy, but a response to external expectations that a transition towards a decarbonized economy is possible. The past years have seen a tremendous increase in this type of endorsing response, primarily driven by the financial industry.

This increase has produced an avalanche of net-zero targets, fostered the development of new disclosure standards, and given birth to a whole industry that provides tools to track GHG emissions or evaluate companies’ transition plans and climate performance. In this context, how companies imagine a decarbonized business future becomes a matter of reputation and stakeholder management. Even companies that were initially hesitant to announce climate neutrality targets in the first year – *“We wouldn’t promise anything to the outside world where we don’t say we have a very high probability of achieving that, right?”* (German company, November 2020) – did so within this paper’s research timeframe and became guilty of overpromising.

A recurring challenge for companies has been collecting emission data from their own operations and suppliers, which are far from the “real” data: *“So, then we realized: ‘Come on, why [is] your emission so much higher than we were expecting?’ Then we realized that [...] [t]hey are reporting other business units that they have under their companies that are not in our*

value chain, but of course, it affects their total numbers.” (Brazilian company, January 2022) Nevertheless, companies publish numeric data in reports, which are considered when evaluating targets or calculating remaining carbon budgets, suggesting objectivity and a realistic assessment of companies’ emissions.

This clearly illustrates that data-driven climate governance is full of implicit exaggeration, which is known and accepted by their addressees in for example the financial industries. Overpromising as exaggeration is similar to what Intemann (2022) has described in science journalism: it is explicit as well as implicit, gradual, and closely related to value judgments about what is (in)appropriate in specific contexts. Unlike contradiction, there are possible ways of dealing with this type of over-

change and create large-scale support for decarbonization within companies, as well as through the diffusion of norms, such as target setting, across the economy.

Conclusion

This research article investigated how companies translate the narrative of a transition towards deep decarbonization into company-specific imagined business futures. It argued that overpromising represents an essential and inevitable feature of imagined business futures and identified three forms of overpromising: contradiction, exaggeration, and commitment. Each

Dystopian imaginarieness may inhibit climate action because of feelings of fear and apathy.

promising within the current economic system, for example, by combining the pressure for transparency with clear methods of accountability. These initiatives are typically market-based and can more successfully become part of a dominant narrative, such as the popularization of the Science Based Targets initiative or the development of mandatory sustainability standards.

Overpromising as commitment

The final type of overpromising highlights the generative character of high expectations and thus adds a more positive take on overpromising, which can be understood as a form of commitment. An illustrative example is a public announcement of ambitious climate targets without a concrete plan, something frequently mentioned within the research sample: *“If we waited until we had everything figured out, we would never announce. And I think that’s what happens with a lot of companies. [...] If you wait for the perfection, you will never make the plans.”* (Company from the United States, February 2022) While this could be perceived as an exaggeration of a company’s capability of achieving its targets, company representatives stressed the importance of making a public commitment to creating a governance structure within the organization, allocating monetary and human resources or speeding up processes.

This becomes particularly evident in companies that have only recently begun to think about their roles within a decarbonized economy. A company representative from Brazil explained how sustainability moved from the company’s margins to being one pillar of its strategic planning resulting in increased responsibilities and recognition within the organization: *“We coordinate now more or less sixty people [...] Of course, we are not the number one [priority] because all the areas, all the departments have their own responsibility. But now the doors are open for us, totally.”* (Brazilian company, March 2022) Overpromising as commitment in this sense could even initiate organizational

of them lacks credibility, but in different ways: Downplaying value conflicts between decarbonization and other company goals is rooted in some of the defining logics of capitalism, growth and competition, and the implausible vision of green capitalism. Decoupling external disclosure from internal processes is related to expectations of stakeholders that companies support the transition towards deep decarbonization. However, a public commitment to decarbonizing, even if implausible, also stimulates change and creates large-scale support within organizations and across the economy. The results illustrate the power of desirable narratives, but also their limits and side effects. Dystopian imaginarieness may inhibit climate action because of feelings of fear and apathy. Mainstreaming an opportunity narrative around a decarbonized economy comes with the cost of accepting overpromising and unrealistic imagined business futures. This may be important when initiating organizational change but just defers uncomfortable yet necessary decisions in the long term. In order to prevent further climate delay (Lamb et al. 2020), it is important to have shared, desirable, just, and realistic futures, and to engage in honest and constructive conversation about the degree to which overpromising is productive and appropriate for dealing with the complex challenges of decarbonization.

Funding • The research was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany’s Excellence Strategy – EXC 2037 “CLICCS – Climate, Climatic Change, and Society” – Project Number: 390683824.

Competing interests • The author declares no competing interests.

References

Alvial-Palavicino, Carla; Konrad, Kornelia (2019): The rise of graphene expectations. Anticipatory practices in emergent nanotechnologies. In: *Futures* 109, pp. 192–202. <https://doi.org/10.1016/j.futures.2018.10.008>

- Aykut, Stefan; Morena, Edouard; Foyer, Jean (2021): 'Incantatory' governance. Global climate politics' performative turn and its wider significance for global politics. In: *International Politics* 58 (4), pp. 519–540. <https://doi.org/10.1057/s41311-020-00250-8>
- Bakker, Sjoerd; Budde, Björn (2012): Technological hype and disappointment. Lessons from the hydrogen and fuel cell case. In: *Technology Analysis & Strategic Management* 24 (6), pp. 549–563. <https://doi.org/10.1080/09537325.2012.693662>
- Beck, Silke; Jasanoff, Sheila; Stirling, Andy; Polzin, Christine (2021): The governance of sociotechnical transformations to sustainability. In: *Current Opinion in Environmental Sustainability* 49, pp. 143–152. <https://doi.org/10.1016/j.cosust.2021.04.010>
- Beckert, Jens (2016): *Imagined futures. Fictional expectations and capitalist dynamics*. Cambridge, MA: Harvard University Press. <https://doi.org/10.4159/9780674545878>
- Beckert, Jens (2021): The firm as an engine of imagination. Organizational prospect and the making of economic futures. In: *Organization Theory* 2 (2), p. 26317877211005. <https://doi.org/10.1177/26317877211005773>
- Boettcher, Miranda; Brent, Kerryn; Buck, Holly; Low, Sean; McLaren, Duncan; Mengis, Nadine (2021): Navigating potential hype and opportunity in governing marine carbon removal. In: *Frontiers in Climate* 3, p. 664456. <https://doi.org/10.3389/fclim.2021.664456>
- Borup, Mads; Brown, Nik; Konrad, Kornelia; Van Lente, Harro (2006): The sociology of expectations in science and technology. In: *Technology Analysis & Strategic Management* 18 (3–4), pp. 285–298. <https://doi.org/10.1080/09537320600777002>
- Engels, Anita; Marotzke, Jochem; Gresse, Eduardo; López-Rivera, Andrés; Pagnone, Anna; Wilkens, Jan (eds.) (2023): *Hamburg climate futures outlook. The plausibility of a 1.5 °C limit to global warming – social drivers and physical processes*. Hamburg: Universität Hamburg. <http://doi.org/10.25592/uuhfdm.11230>
- Engels, Anita; Kunkis, Michael; Altstaedt, Sören (2020): A new energy world in the making. Imaginary business futures in a dramatically changing world of decarbonized energy production. In: *Energy Research & Social Science* 60, p. 101321. <https://doi.org/10.1016/j.erss.2019.101321>
- Fankhauser, Sam et al. (2022): The meaning of net zero and how to get it right. In: *Nature Climate Change* 12 (1), pp. 15–21. <https://doi.org/10.1038/s41558-021-01245-w>
- Geels, Frank; Sovacool, Benjamin; Schwanen, Tim; Sorrell, Steve (2017): Sociotechnical transitions for deep decarbonization. In: *Science* 357 (6357), pp. 1242–1244. <https://doi.org/10.1126/science.aao3760>
- Intemann, Kristen (2022): Understanding the problem of “hype”. Exaggeration, values, and trust in science. In: *Canadian Journal of Philosophy* 52 (3), pp. 279–294. <https://doi.org/10.1017/can.2020.45>
- Kester, Johannes; Sovacool, Benjamin; Noel, Lance; Zarazua de Rubens, Gerardo (2020): Between hope, hype, and hell. Electric mobility and the interplay of fear and desire in sustainability transitions. In: *Environmental Innovation and Societal Transitions* 35, pp. 88–102. <https://doi.org/10.1016/j.eist.2020.02.004>
- Lamb, William et al. (2020): Discourses of climate delay. In: *Global Sustainability* 3, p. e17. <https://doi.org/10.1017/sus.2020.13>
- Meyer, John; Rowan, Brian (1977): Institutionalized organizations. Formal structure as myth and ceremony. In: *American Journal of Sociology* 83 (2), pp. 340–363. <https://doi.org/10.1086/226550>
- Millar, Neil; Batalo, Bojan; Budgell, Brian (2022): Trends in the use of promotional language (hype) in abstracts of successful national institutes of health grant applications, 1985–2020. In: *JAMA network open* 5 (8), p. e2228676. <https://doi.org/10.1001/jamanetworkopen.2022.28676>
- Mische, Ann (2014): Measuring futures in action. Projective grammars in the Rio+20 debates. In: *Theory and Society* 43 (3–4), pp. 437–464. <https://doi.org/10.1007/s11186-014-9226-3>
- Net Zero Tracker (2023): Companies. Available online at <https://zerotracker.net/#companies-table>, last accessed on 30.10.2023.
- Powell, Walter; DiMaggio, Paul (eds.) (1991): *The new institutionalism in organizational analysis*. Chicago: University of Chicago Press. <https://doi.org/10.7208/chicago/9780226185941.001.0001>
- Sovacool, Benjamin; Bazilian, Morgan; Kim, Jinsoo; Griffiths, Steven (2023): Six bold steps towards net-zero industry. In: *Energy Research & Social Science* 99, p. 103067. <https://doi.org/10.1016/j.erss.2023.103067>
- Strübing, Jörg (2021): *Grounded theory. Zur sozialtheoretischen und epistemologischen Fundierung eines pragmatistischen Forschungsstils*. Wiesbaden: Springer VS. <https://doi.org/10.1007/978-3-658-24425-5>
- Suchman, Mark (1995): Managing legitimacy. Strategic and institutional approaches. In: *The Academy of Management Review* 20 (3), pp. 571–610. <https://doi.org/10.2307/258788>
- Tilsted, Joachim; Palm, Ellen; Björn, Anders; Lund, Jens (2023): Corporate climate futures in the making. Why we need research on the politics of science-based targets. In: *Energy Research & Social Science* 103, p. 103229. <https://doi.org/10.1016/j.erss.2023.103229>
- Van Lente, Harro; Spitters, Charlotte; Peine, Alexander (2013): Comparing technological hype cycles. Towards a theory. In: *Technological Forecasting and Social Change* 80 (8), pp. 1615–1628. <https://doi.org/10.1016/j.techfore.2012.12.004>
- Velte, Patrick (2023): Determinants and consequences of corporate social responsibility decoupling – status quo and limitations of recent empirical quantitative research. In: *Corporate Social Responsibility and Environmental Management*, pp. 1–23. <https://doi.org/10.1002/csr.2538>
- Vogel, Jefim; Hickel, Jason (2023): Is green growth happening? An empirical analysis of achieved versus Paris-compliant CO₂-GDP decoupling in high-income countries. In: *The Lancet. Planetary Health* 7 (9), pp. e759–e769. [https://doi.org/10.1016/S2542-5196\(23\)00174-2](https://doi.org/10.1016/S2542-5196(23)00174-2)



THOMAS FRISCH

is a PhD researcher in Sociology investigating ongoing transformations in the economy. Since March 2020, he has worked as a research fellow in a sub-project of the DFG-funded Cluster of Excellence “Climate, Climatic Change, and Society (CLICCS)” at the University of Hamburg.