



Impression management of biodiversity reporting in the energy and utilities sectors: An assessment of transparency in the disclosure of negative events

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ABSTRACT

The aim of this paper is to analyse the official corporate reports of selected companies in the utilities and energy sectors to determine whether they report transparently on negative biodiversity-related events or instead present an idealised image through impression management strategies. For this purpose, through a counter-accounting approach, external sources were consulted to find information on incidents with an impact on biodiversity for selected companies from the energy and utilities sectors. 47 incidents linked to 17 companies were identified and the information obtained from the unofficial sources was then compared with what the companies had disclosed in their sustainability reports. Half of the incidents identified were not disclosed at all and those that were informed were, in most cases, partially reported using impression management mechanisms.

1. Introduction

Due to human disturbances, our planet is currently facing an accelerated loss of biodiversity that threatens the stability of the entire system (Rockström et al., 2009). As part of the nine planetary boundaries, the integrity of biodiversity has already exceeded the proposed limit and there is a risk that the remaining processes or subsystems of the Earth-system will collapse (Steffen et al., 2015). There is an urgent need for humanity to realise that it needs to take immediate actions to protect the environment and repair the damage caused, thus preserving biodiversity (Jones, 2010).

The United Nations (UN) 2030 Agenda for Sustainable Development includes in both SDGs 14 and 15 the need for immediate measures to protect marine and terrestrial ecosystems to halt biodiversity degradation (United Nations, 2015). Biodiversity loss is an issue of concern to all social actors and organisations and they are, therefore, responsible for the protection of ecosystems and the overall maintenance of sustainability. Companies have to take necessary actions to protect biodiversity and, moreover, disclose information on these environmental matters through official corporate reports (Panwar, 2023). Environmental accounting has often been neglected in favour of short-term financial matters. Due to the urgency of the current environmental crisis and the rapid loss of biodiversity, there is a need to focus primarily on

environmental accounting in the short-term and rethink conventional accounting for the long-term (Tregidga and Laine, 2022).

Companies should report relevant information related to biodiversity issues in their corporate sustainability reports (SRs), disclosing both positive and negative indicators (Adams, 2004). A relevant motivation for organisations is to enhance their social legitimacy, which can lead to selective reporting (Hrasky and Jones, 2016) and greenwashing statements (Hassan et al., 2020). Companies use impression management techniques to present an idealised image of themselves to stakeholders (Boiral, 2016) and tend to report more the positive aspects than the negative ones (Hassan et al., 2020). This is more likely to occur in most polluting sectors (e.g. mining, energy), as they are more under pressure from public scrutiny (Hassan et al., 2020) and are therefore more willing to manage the reputational risks that negative incidents may cause (Bebbington et al., 2008).

The aim of this study is to examine whether companies have reported transparently in their official reports on incidents that have impacted on biodiversity, as disclosed by external sources, or if they have employed impression management strategies. This paper makes several contributions to the existing literature. First, it further explores the theory of impression management, adding to studies that have followed this theoretical framework in environmental and sustainability accounting domain (Cho et al., 2018) and responding to the call that encourages

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researchers to continue employing other theoretical frameworks outside the traditional legitimacy and stakeholder theories (Adams and Larrinaga, 2019). The theory of impression management has been previously used to investigate corporate disclosure, particularly in relation to environmental and biodiversity disclosure (Boiral, 2016; Talbot and Boiral, 2021), and this study seeks to add new insights to the existing literature. Second, following a counter-accounting approach, the study carries out a comparison between the information gathered by external sources about certain negative events and what the companies involved have actually reported in their official documents, in order to assess any discrepancies between what both sources have reported. To our understanding, it is the first study that follows this approach to assess the transparency of biodiversity-related impacts. Third, it analyses the degree of transparency in reporting negative events and identifies the impression management techniques employed by companies when underreporting biodiversity-related incidents. To this end, we employ the four neutralisation techniques suggested by Boiral (2016), finding out that companies do make use of them when they partially inform about negative events. Finally, the study delves into the literature around the nature of soft and hard disclosure statements (Ong et al., 2016). The paper questions why certain types of incidents may lead to more comprehensive and transparent corporate disclosure practices. It contributes to the debate by concluding that although we agree with previous findings that negative incidents are more likely to be disclosed through soft disclosures, our results show that some biodiversity-related incidents are reported through hard disclosures.

The paper is structured as follows. Section 2 explores the theory of impression management, how it has been used within the field of social and environmental accounting and how it is applied in this study. Section 3 describes the counter-accounting methodology followed. Section 4 presents the descriptive results of the analysis and identifies the impression management techniques used by companies. Section 5 discusses the main findings of the study and assesses whether or not companies report hard statements when it comes to specific incidents that impact on biodiversity. Finally, Section 6 presents concluding remarks, main research limitations and opportunities for future studies.

2. Theoretical framework

The theoretical framework of this study focuses on the notions of impression management based on Erving Goffman's (1959) dramaturgical metaphor. Companies that make use of impression management techniques aim to comply with societal norms and fulfil stakeholder expectations (Merkl-Davies and Brennan, 2011). Therefore, impression management is strongly linked to both legitimacy and stakeholder theories (Perkiss et al., 2021), which are widely used in the accounting field (Adams and Larrinaga, 2019). However, while legitimacy theory implies that companies want to achieve societal expectations and stakeholder theory recognises the different actors in society who deserve to know what actions the company takes, impression management theory arises from the fact that there are inconsistencies between what society expects and the company's values or intentions (Merkl-Davis and Brennan, 2011). Previous studies on biodiversity accounting have primarily used legitimacy and stakeholder theories, and to a lesser extent institutional and actor-network theories (Blanco-Zaitegi et al., 2022). Although impression management theory is not new, its application to environmental and sustainability accounting is relatively recent and not very widespread. Thus, our approach may add new insights to the current literature.

Goffman (1959) analyses human behaviour through the metaphor of the theatre and the concepts of 'frontstage' and 'backstage'. Individuals manage the impressions that others have of them in the same way that actors play a role in front of an audience. The visible and invisible performances of individuals are represented by the actions carried out on the frontstage and backstage (Talbot and Boiral, 2021). On the frontstage, actors are aware that their performance is being examined

and scrutinised, while backstage they are out of public exposure and can be themselves (Goffman, 1959). Frontstage actions are performed consciously, employing impression management techniques (e.g., clothing, verbal expression, physical appearance, body language, posture) with the aim of influencing the audience. Behind the scenes, informal actions occur and it is the place where actors decide what information to present to the audience (Talbot and Boiral, 2021). They will decide whether to over-inform or under-inform the public (Cho et al., 2018), in a worse or a better way (Syarifuddin and Damayanti, 2019). Individuals act differently on the frontstage and backstage, although Solomon et al. (2013, p. 198) consider that "it is unclear whether Goffman perceived impression management to involve deliberate 'misrepresentation', with the 'front stage' persona differing significantly from the 'back stage' persona".

Companies (actors), in front of their stakeholders (the audience), manage the impressions of the latter with the aspiration of presenting a certain image to maintain or repair social legitimacy and enhance their reputation (Cho et al., 2018; Diouf and Boiral, 2017). Backstage, activities presented to the audience are planned with this motivation in mind and can lead to a manipulation of the information disclosed to the public (Diouf and Boiral, 2017), taking advantage of information asymmetries (Merkl-Davies and Brennan, 2011). To this end, Corporate Social Responsibility (CSR) or SRs could be used as a way to manage stakeholder impressions (Boiral, 2016; Syarifuddin and Damayanti, 2019; Talbot and Barbat, 2020). The accounting literature has previously applied the impression management theory in the context of corporate reporting. While some researchers analyse internal information disclosed by companies (Solomon et al., 2013), most researchers have focused on the analysis of external reports, which are publicly available (see, e.g., Cho et al., 2018; Diouf and Boiral, 2017). Overall, it is widely acknowledged a discrepancy between the information provided in corporate reports and the performance of companies.

Organisations use impression management tactics to influence stakeholder perceptions (Boiral, 2016; Syarifuddin and Damayanti, 2019), controlling their reputation, especially when a scandal or a negative event occurs (Merkl-Davies and Brennan, 2011; Talbot and Barbat, 2020). In corporate reporting, while positive outcomes are highlighted, information that could jeopardise the image of the company is carefully presented (Talbot and Boiral, 2021). Boiral (2016) shows four impression management neutralisation-techniques for negative information: statements of net positive or neutral impacts, denial of serious impacts, distancing behaviour from impacts and dilution of accountability. Managers attribute positive results to personal achievements, while negative events (e.g., environmental disasters) are caused by uncontrollable external factors (Merkl-Davies and Brennan, 2011; Solomon et al., 2013). Companies dissociate themselves from any negative events by either denying or minimising their responsibility, discrediting the source of criticism (Talbot and Barbat, 2020) or through verbal justifications and excuses (Merkl-Davies and Brennan, 2011). In addition to the distortion of information, the absence of information or minimal narrative disclosure (MND) can also be considered as a form of impression management (Leung et al., 2015).

Biodiversity loss would fall under the above-mentioned environmental disasters that should be publicly disclosed by organisations. Biodiversity protection initiatives tend to be overemphasised in the corporate environmental reports (Cho et al., 2018), but when it comes to negative impacts on biodiversity, the available information is insufficient and unclear (Boiral, 2016). Research on biodiversity accounting has previously examined corporate disclosure of biodiversity-related issues with Goffman's ideas on impression management (see, e.g., Boiral, 2016; Hassan et al., 2022; Syarifuddin and Damayanti, 2019; Talbot and Boiral, 2021). However, unlike previous studies that only analyse the content of official company disclosures, or supplement it with interviews (see, e.g., Talbot and Boiral, 2021), this study will also follow the same theoretical approach used in aforementioned papers to determine if impression management techniques are used when reporting

negative events affecting biodiversity, but will first identify actual incidents reported by external sources to see how companies disclose them. The purpose of this analysis will be to determine whether corporate reports inform about these already known negative events in a transparent and genuine manner or, on the contrary, the image portrayed has been carefully constructed and selected, as it is publicly available.

3. Methodology

The aim of the study is to analyse the reporting practices of thirty (30) companies belonging to the energy and utilities sectors, to assess the transparency and completeness of the information disclosed in relation to negative impacts on biodiversity. In addition, the study examines whether these reports make use of impression management strategies to present a pristine corporate image and avoid liabilities. To achieve this objective, this study combines both impression management theory and a counter-accounting approach (see, e.g., [Perkiss et al., 2021](#); [Talbot and Boiral, 2018](#)). The use of counter-accounts is done to check the validity of the information provided by the company in its reports. Thus, the aim is to analyse whether or not the selected companies have applied impression management mechanisms when reporting negative biodiversity-related events and to compare their responses with the information obtained from external sources.

3.1. Counter-accounting approach

Counter-accounts, also known as shadow accounts ([Tregidga, 2017](#)) or anti-accounts ([Spence, 2009](#)), are external documents that are not controlled by organisations, such as NGO reports, online newspapers, government studies or websites specialised in corporate counter-accounts ([Boiral, 2013](#)). Counter-accounts should not be limited to written reports and news. [Gallhofer et al. \(2006\)](#) mention the potential of online websites and, for example, counter-accounts can also take the form of videos ([Perkiss et al., 2021](#); [Vinnari and Laine, 2017](#)) or social-media posts ([She, 2022](#)). These documents challenge what organisations have communicated in their official reports, calling into question their social legitimacy ([Perkiss et al., 2021](#)). [Maceralli et al. \(2021\)](#) argue that while some aspects may be overlooked by external sources, critical incidents are more likely to be reported. As corporations may use impression management techniques that deliberately conceal reality, external organisations or watchdogs could act as an alternative to seek transparent information ([Merkl-Davies and Brennan, 2011](#)). Although companies should report these negative events for the sake of honesty and integrity, in their absence, we could use unofficial sources that have no problem reporting these incidents.

Accounting academics have recently shown great interest in counter-accounting analyses ([Tweedie, 2022](#)). In the field of sustainability accounting, counter-accounting is also used as an approach to check corporate official information disclosed through external reports produced by non-official sources ([Boiral, 2013](#); [Macellari et al., 2021](#)). There are some studies that through a counter-accounting analysis explore corporate responses to incidents that could negatively affect the company's image comparing corporate reporting with alternative sources (see, e.g., [Adams, 2004](#); [Bellucci et al., 2021](#); [Boiral, 2013](#); [Macellari et al., 2021](#); [Perkiss et al., 2021](#)). While some researchers agree, to some extent or strongly, on the emancipatory potential of counter-accounts ([Apostol, 2015](#); [Gallhofer et al., 2006](#); [Gallhofer and Haslam, 2019](#); [Perkiss et al., 2021](#); [Vinnari and Laine, 2017](#)) because they represent an alternative to hegemonic official corporate reports ([Gallhofer et al., 2006](#)), others are critical of this claim ([Tweedie, 2022](#)). [Tweedie \(2022\)](#) raises concerns about the effectiveness of these counter-accounts and questions their transformative capacity, as some limitations and weaknesses need to be taken into account. To the same extent that the counter-accounts question corporate reports, the former could be subject to scrutiny by third parties ([Tregidga, 2017](#)).

Counter-accounts confront the information disclosed in official reports, breaking the idealised image that companies want to present. Although it seemingly challenges the conventional accounting paradigm, should not be overlooked that the information reported by external agents is also partial and selective ([Spence, 2009](#)). However, these reports are not intended to be neutral in the first place and the watchdogs do assume their role as oppositional agents to corporations ([Spence, 2009](#)). In fact, they are transparent in their nature, ideas and values.

While more research into these issues is important, this study does not intend to analyse the emancipatory potential of counter-accounting. Instead, this paper applies counter-accounts to verify the reliability of the information presented in corporate SRs and to identify the impression management strategies that organisations follow when communicating negative impacts on biodiversity. This study assumes that company and third-party reporting will differ due to the nature of the events being analysed (i.e., incidents produced by business activities on biodiversity), either by not reporting these incidents or by deliberately reporting them (i.e., through impression management techniques).

The study conducts an initial search to identify incidents affecting companies that have been reported by sources not controlled by those companies, and then verifies how the identified incidents are disclosed in official corporate reports. The following sub-sections detail and present a step-by-step process of searching and analysing the data obtained.

3.2. Data gathering

For this study, 30 Eurozone companies listed on the STOXX 600¹ were selected, 11 from the energy sector and 19 from the utilities (see [Table 1](#)). These sectors were chosen because their activities have a high impact on ecosystems and biodiversity degradation ([Gasparatos et al., 2017](#)). Companies in the Eurozone were selected as the European Union is committed to the "European Green Deal" ([European Commission, 2019](#)) and to the protection of biodiversity through the "EU Biodiversity Strategy for 2030" ([European Commission, 2020](#)). This plan considers the importance of sustainable renewable energies for the conservation of biodiversity and, consequently, the prioritisation of non-fuel energy generation, such as wind farms, solar-panels or ocean energy ([European Commission, 2020](#)). However, the green-green dilemma should not be overlooked ([Voigt et al., 2019](#)), that although these "green" energies are apparently considered environmentally friendly, they also have a negative impact on biodiversity ([Gasparatos et al., 2017](#)). In 2020, the European Commission also launched a review of reporting obligations for companies under the Non-Financial Reporting Directive. For companies operating in industries heavily dependent on natural resources, sector-specific sustainability reporting standards should include disclosure of impacts on and risks to biodiversity and ecosystems. Large Public Interest Entities are required to comply with the European Sustainability Reporting Standards (ESRS) starting from 1 January 2024 ([Directive \(EU\) 2022/2464](#)), including ESRS E4 "Biodiversity and ecosystems". More companies will be obliged to apply ESRS from 2025 onwards.

After identifying the companies, an online search for counter-information was conducted and biodiversity-related incidents were collected (e.g., deforestation, bird electrocution, impact on a marine or terrestrial habitat). For the search strategy, a number of biodiversity-related keywords (e.g., biodiversity, ecosystem, species, biota, animals, plants, etc.) combined with the names of the companies of the sample (N=30) were applied and information on negative impacts on the ecosystems from different external sources (see [Table 2](#)) was selected. The news/reports published between 1 January 2020 and 31 December 2021 were taken into account; i.e., information published within a two-year period. Only information in English and Spanish was

¹ The STOXX market is constantly changing; the selection of companies was made on 17 May 2022. The sample includes all companies from the utilities and energy sectors listed at the time of the search.

Table 1

Disclosure of negative biodiversity-related events in official corporate reports.

Company	Sector	Country	No. of identified negative events	Non-reported	Partially reported	Clearly reported
A2A	Utilities	Italy	0	-	-	-
E.ON	Utilities	Germany	0	-	-	-
EDF	Utilities	France	2	0	1	1
EDP (ENERGIA DE PORTUGAL)	Utilities	Portugal	3	3	0	0
ELIA GROUP	Utilities	Belgium	0	-	-	-
ENAGAS	Energy	Spain	1	1	0	0
ENDESA	Utilities	Spain	3	2	0	1
ENEL	Utilities	Italy	6	0	4	2
ENGIE	Utilities	France	0	-	-	-
ENI	Energy	Italy	3	2	1	0
FORTUM	Utilities	Finland	0	-	-	-
GALP ENERGIA	Energy	Portugal	3	2	1	0
HERA	Utilities	Italy	0	-	-	-
IBERDROLA	Utilities	Spain	7	3	1	3
ITALGAS	Utilities	Italy	0	-	0	-
NATURGY ENERGY GROUP	Utilities	Spain	2	0	2	0
NESTE	Energy	Finland	2	1	0	1
OMV	Energy	Austria	1	0	1	0
RED ELECTRICA CORPORATION	Utilities	Spain	0	-	-	-
REPSOL	Energy	Spain	2	0	1	1
RWE	Utilities	Germany	3	2	1	0
SIEMENS ENERGY	Energy	Germany	1	1	0	0
SIEMENS GAMESA	Energy	Spain	3	3	0	0
SNAM RETE GAS	Energy	Italy	0	-	-	-
TENARIS	Utilities	Italy	0	-	-	-
TERNA	Energy	Italy	0	-	-	-
TOTAL	Energy	France	4	1	1	2
UNIPER	Utilities	Germany	0	-	-	-
VEOLIA ENVIRONMENT	Energy	France	0	-	-	-
VERBUND	Utilities	Austria	1	1	0	0
TOTAL			47	22	14	11
Percentage			100%	47%	30%	23%

Table 2

List of external sources consulted.

Types of external information sources	Examples
Online search engines	Google News
Social networks	Twitter ^a
NGO websites	Greenpeace, Rainforest Rescue, Natural Justice, Ecologistas en Acción, Les Amis de la Terre, 350.org, CADTM, Vulture Conservation Foundation, Ethical Consumer, IWGIA, FACUA, International Rivers
Websites specialised in corporate counter accountability	Business and Human Rights Resource Centre, openDemocracy, Contrainformación, Countercurrents, desInformémonos
Online green newspapers and magazines	EcoWatch, EFEVerde, Afrik 21, Ecoticias, Ecoavant, Yale Environment 360
Online general newspapers	Reuters, The Guardian, Al Jazeera, Euronews, Newsweek, Rappler, El País, El Mundo, El Diario, ABC, El Salto, La voz de Galicia, Bloomberg, Europa Press, La Tercera, BBC
Other sources	National Geographic, Eco-Business

^a At the time of the search, social network X had its old name Twitter.

considered and, to limit bias and fake news, it was necessary for each of the incidents identified to be mentioned by at least two independent sources. In addition, in order to limit a possible language bias that would cause us to find more incidents related to Spanish companies, it was taken into account that information on a particular incident affecting Spanish companies should come not only from a Spanish source, but also from an English one.

A total of 47 negative events linked to 17 companies were identified; thus, incidents were not found for the remaining 13 companies (see Table 1). The information collected would then be compared with the information disclosed by the companies of the subsample (n=17) in their official reports for the years 2020 and 2021. The years belong to the reports subsequent to the EU agreements on biodiversity protection and those available at the time of data collection. This official reports were a collection of publicly available non-financial disclosures that were downloaded from the public websites of the companies. Depending on the company, it was denominated as SR, integrated report or statements of non-financial information, among others.

3.3. Data analysis

The content analysis and classification of the information collected was performed in a two-stage process. Firstly, a complete and thorough reading of each of the identified significant negative events affecting the selected companies was carried out, and the incidents were classified into seven different types: (1) impact on a marine ecosystem, (2) impact on a migratory corridor, (3) emptying/flooding of reservoirs and glacial lakes, (4) electrocution or damage to birds, (5) impact on indigenous territories, (6) deforestation of rainforest and (7) impact on a terrestrial ecosystem.

Secondly, the companies' official corporate reports were compiled and compared with the information obtained in the first stage to analyse whether or not these official reports have covered the incidents reported by external sources. Table 3 presents an example of the process, where extracts for a particular incident reported by both corporate and unofficial sources were identified and compared. Each event was classified into one of these three categories: (1) not reported, when the incident was not mentioned in any way in the official corporate report; (2) partially reported, when the event was not that clearly or explicitly

Table 3

Example of a comparison between information reported by external sources and official sources regarding a specific incident involving a particular company.

Extract from an external source	Extract from an official source
<p>The civil court in Paris (tribunal judiciaire) missed a historic chance to protect the rights of a Mexican indigenous group against France's corporate interests: [On 29 November 2021] instead of ordering French energy giant Électricité de France (EDF) to immediately suspend the construction of a wind park in Oaxaca, Mexico, which violates human rights, the court dismissed the request partially on formal/procedural grounds. The recent ruling is part of pre-trial proceedings preceding the main trial. While this decision does not foreclose all options of the claimants in this procedure, the court's decision makes the pursuit of justice more difficult. [...] Persons affected and human rights groups ProDESC and the European Center for Constitutional and Human Rights (ECCHR) filed a lawsuit demanding the suspension of EDF's Gunaa Sicarú wind park project planned on the territory of indigenous community Unión Hidalgo. The community claims that it was not adequately consulted in the planning process – a clear violation of the community's rights. In addition, EDF's alleged interference in the consultation process has led to an escalation of violence in the community, especially against human rights and land rights defenders.</p> <p>Business & Human Rights Resource Centre (3 Dec 2021): https://www.business-humanrights.org/en/latest-news/france-civil-court-dismisses-request-from-mexican-indigenous-group-to-halt-electricity-de-frances-construction-of-a-wind-park-citing-procedural-grounds/</p>	<p>Ongoing litigation in Mexico: [...] EDF was then summoned on 13 October 2020 to appear before the Paris Court of Justice [...]. The applicants have asked the court to order changes to the Vigilance Plan produced by EDF to better address, in particular, the risks posed to the rights of indigenous communities and to order compensation for the damage caused by its failure to fulfil its duty of Vigilance. EDF has challenged these two applications. On 30 November 2021, the pre-trial judge rejected the non-profits' request for a precautionary suspension of the project as well as their request for an injunction against EDF's Vigilance Plan, [...]. The applicants appealed the judgment of the pre-trial judge. The Tribunal proposed mediation, which EDF accepted.</p> <p>(EDF, 2021 Universal registration document, p. 256)</p>

Table 4

Example of categorisation (2) partially reported and (3) clearly of two similar incidents reported by a particular company.

Clearly Reported event (Category 3)	Partially Reported event (Category 2)
<p>- Brazil (Coelba Networks in Banaë): Kiriris, Tuxá and Truká (Bahia)</p> <p>Three lawsuits are under way with respect to the Brazilian electricity distribution company Coelba relating to indigenous rights, seeking compensation for the use of the right of way of the electricity grids on community lands of the Kiriris, Tuxá and Truká indigenous peoples. The lawsuit relating to the Truká community was filed in 2021. During the reporting period, the action regarding the Kiriris indigenous people was adjudicated. It is now in the appeal stage. The other two actions are in the investigatory phase, awaiting judgement.</p> <p>(Iberdrola, 2021 Statement of non-financial information. Sustainability report, p. 145)</p>	<p>The company, with a presence in four countries where there are indigenous communities (Brazil, Mexico, the United States and Australia) encourages business activities to be carried out with respect for different cultural identities, traditions and environmental wealth, as many times these communities depend on natural resources for their subsistence.</p> <p>- Mexico (Dos Arbolitos wind farm): La Ventosa, Juchitán, Oaxaca</p> <p>- Mexico (Bii Nee Stipa wind farm): In the Espinal Zapotec community</p> <p>- Mexico (Mexico Ecological Parks): Juchitán de Zaragoza</p> <p>(Iberdrola, 2021 Statement of non-financial information. Sustainability report, p. 145)</p>

Table 5

Disclosure of negative biodiversity-related events by type.

Type of the negative event	No. identified negative events	Non-reported	Partially reported	Clearly reported
(1) impact on a marine ecosystem	9	6 (67%)	2 (22%)	1 (11%)
(2) impact on a migratory corridor	1	1 (100%)	0 (0%)	0 (0%)
(3) emptying/flooding of reservoirs and glacial lakes	4	4 (100%)	0 (0%)	0 (0%)
(4) electrocution or damage to birds	4	0 (0%)	1 (25%)	3 (75%)
(5) impact on indigenous territories	15	5 (33%)	4 (27%)	6 (40%)
(6) deforestation of rainforest	8	2 (25%)	5 (63%)	1 (13%)
(7) impact on a terrestrial ecosystem	6	4 (67%)	2 (33%)	0 (0%)

reported; and (3) clearly reported, when the company actually reported the negative event in a reliable and transparent way. When the incident fell into one of the last two categories (2 or 3), all related information was extracted and carefully analysed. A specific incident was clearly disclosed in the company's official reports if the incident was explained and covered thoroughly, including qualitative statements (such as the names of affected fauna and flora species, specific dates, geographical areas, indigenous communities or stakeholders involved), as well as quantitative data (such as financial amounts, number of affected species or percentage population reduction). Furthermore, based on these premises, this classification is based on the joint opinion of the authors, after a separate analysis of each incident. In cases where there was doubt, it was concluded that the information was only partially disclosed. To illustrate the analysis conducted to determine whether an incident falls under category (2) or (3), Table 4 presents as an example Iberdrola's reporting of two incidents in indigenous territories. The first incident, which took place in the Brazilian state of Bahia, is clearly

described by identifying the incident, the names of the affected indigenous communities, the geographical area, and the date. The second incident concerns the impact of the company's activities on an indigenous community in the Mexican state of Oaxaca. The report does not provide details of the event, but it does reflect the general concerns of the company regarding the protection of the indigenous territories.

Incidents that were partially reported were further analysed to assess whether or not impression management techniques were present. For this purpose, the neutralisation techniques of biodiversity issues determined by Boiral (2016) were followed: (1) claiming net-positive/neutral impact, (2) denial of significant impact, (3) distancing from the reported impact and (4) dilution of responsibilities.

The 47 negative events were documented and coded into a five-column table that included: (1) the company involved, (2) a detailed description of the incident, (3) the type of negative event (step 1), (4) the level of coverage of the event (step 2) and (5) an analysis of how the incident was disclosed in the SR.

4. Findings

The following section of the study interprets and details the results obtained from the data analysis. Firstly, a descriptive analysis is carried out and the negative incidents identified are classified into the different categories detailed in the previous section. Secondly, in cases where incidents were considered partially reported, an in-depth analysis of the impression management techniques used is explored.

4.1. Descriptive analysis

From the initial sample, only 17 companies were identified as having significant biodiversity-related incidents (see Table 1). The remaining 13 companies were all from the utilities sector, except for 2 Italian companies in the energy sector. 47 negative events were identified and Iberdrola was the company with more incidents covered by external sources (7 events). Overall, regardless of their sector of activity, most of the events were not reported or were partially covered in the official SRs. Only 23% of the identified events were clearly informed, while almost half of the incidents were not even mentioned. In addition, the 47 incidents were also classified according to their type, and therefore Table 5 shows the seven types of incidents and their level of disclosure in official reports.

The geographical distribution of the data yields revealing results (see Table 6). 38% of the negative events identified were related to Spanish companies. There are no incidents affecting the only Belgian company of the sample, and it should also be noted that the 9 incidents identified for Italian companies correspond to Enel (6 events) and Eni (3 events); no negative events have been found for the rest.

4.1.1. Non-reported events

Almost half of the incidents identified were not disclosed in the SRs of the companies analysed, no matter the sector of activity. In 12 of the 17 companies, no information was provided on some of the negative biodiversity-related events. The events affecting EDF, Enel, Naturgy, OMV and Repsol were partially or fully reported, while in the other 12 companies at least one event was not mentioned whatsoever in their corporate reports. All incidents related to the following five companies were not reported in their SRs: EDP, Enagas, Siemens Energy, Siemens Gamesa and Verbund. As previously stated, omitting information is a form of impression management. Therefore, companies that intentionally choose not to report incidents they have been involved in are not providing stakeholders with a complete picture (Leung et al., 2015).

Looking at the type of the negative event identified (see Table 5), proportionally, types (1), (2), (3) and (7) are the least reported. As an example for actions taken by companies that impact directly in a marine ecosystem, Siemens Energy is involved in a coal mining project that directly affects the Great Barrier Reef due to its proximity and although ongoing protests by climate activists have been reported by external sources, there is no mention of this in official SRs. It is also noteworthy that the German company is one of the few whose SRs are less than 100 pages long. However, this fact does not necessarily imply a worse

disclosure practice or the use of impression management techniques and, therefore, cannot be said to be closely related to the absence of information about the incident.

Only one incident related to an impact on a migratory corridor was identified involving the Portuguese company EDP. There is a concern to prevent bird fatalities, but the potential impacts on bird migratory corridors are not mentioned. The sustainability reports do not provide information on the geographical locations of migratory routes that may be impacted by business activities. Additionally, they do not include details on any action plans or measures that have been implemented, or any future solutions to address this issue.

The emptying of reservoirs directly affects the habitats that surround them and, in this sense, public entities and activists have targeted energy companies that do not take into account this relevant issue. Iberdrola is involved with the emptying of reservoirs in three different geographical locations in Spain. They barely mention this issue in their SRs nor the fact that public administrations have already opened legal proceedings against them. In the 2020 Sustainability report, Iberdrola gives a vague statement referring to the reservoirs:

Actions for the protection of flora and fauna: control of the reservoir level during the breeding season, fish rescue before emptying reservoirs for maintenance purposes, erection of anti-hunting fences, installation of sonic barriers for protection of the ichthyofauna, and ecological flow control. (Iberdrola, 2020 Statement of non-financial information. Sustainability report, p. 159)

Endesa has been fined 1.9 million euros for opening the floodgates to generate electricity in a reservoir where heavy metals accumulate from a former mine it owns, causing the river to become polluted, despite warnings from the Xunta de Galicia not to do so. The company recognises one fine “in respect of Renewable Hydraulic Energy with a maximum fine of Euros 600,000” (Endesa, 2020 Statement of non-financial information and sustainability, p. 270), but make no reference to the reason for this sanction or any recognition of the incident.

The Finnish company Neste is one of the largest producers of palm-oil biodiesel in the EU, and while the company clearly reports the environmental risks of deforestation, there is no reference to its impact on certain endangered animals. Activists are concerned about the massive expansion of palm oil plantations and the survival of orangutans in Borneo and Sumatra. There are no explicit references to these mammals in both 2020 and 2021 annual reports.

4.1.2. Partially reported events

This category includes negative events that have been reported incompletely or that are not that clearly stated. There is a high likelihood that companies are trying to portray a positive image of themselves and are not reporting transparently on how their activities negatively impact biodiversity. In a later section, the study will look at impression management techniques that companies may be using when reporting such incidents.

Of all the negative events found, 30% have been classified as partially reported. A total of 10 companies fell into this category. Enel

Table 6
Disclosure of negative biodiversity-related events by country.

Country	Energy		Utilities		No. Companies	No. Events
	Companies	Events	Companies	Events		
Austria	1	1	1	1	2	2
Belgium	-	-	1	0	1	0
Finland	1	2	1	0	2	2
France	1	4	3	2	4	6
Germany	1	1	3	3	4	4
Italy	3	3	5	6	8	9
Portugal	1	3	1	3	2	6
Spain	3	6	4	12	7	18
TOTAL	11	20	19	27	30	47

and Naturgy are the companies that tend to give the most distorted information compared to the others; more precisely, Enel partially informed about four negative events and the only two incidents related to Naturgy were somewhat reported. Only one incident linked to OMV has been found from external sources and this event has been considered partially disclosed. It is interesting to note that the event was related to activities affecting a marine ecosystem in the Great South Basin in New Zealand and, as shown in Table 5, in most cases this type of incident is not reported. However, the company's statement is not specifically related to the event mentioned and, therefore, provides partial information about this type of incident:

Offshore operations may lead to oil spills with significant impact on marine water resources and ecosystems. The response strategy aims to minimize the probability of such risks and maximize readiness so that we can provide timely remediation measures in the unlikely event of an oil spill. (OMV, 2021 Sustainability report, p. 54)

Rainforest destruction is the most incompletely reported type of negative event and affects energy generation companies the most. Siemens Gamesa does not explain this issue in its official documents, although two incidents related to this company were reported by external sources. In most cases, rainforest deforestation is related to new palm plantations that are an "efficient" source of biofuel, but clearly detrimental to the ecosystem. With the exception of Neste, which has clearly stated its concerns over several pages in the official reports, the rest of the companies have vaguely disclosed the problem. There are references to "sustainable palm oil" (Total, 2020 Universal registration document, p. 153) without specifying how it makes it sustainable. All companies are committed to be palm oil free by 2023, but incidents in recent years cast doubt on these targets:

Confirmed the zeroing palm oil by 2023 in the refining processes. (Eni, 2021 Annual report, p. 82)

We are well on our way to reach our target of phasing out the use of conventional palm oil by the end of 2023. (Neste, 2023 Annual report, p. 9)

The Company has made a commitment to stop sourcing palm oil in 2023. (Total, 2021 Universal registration document, p. 16)

4.1.3. Clearly reported events

Few companies report biodiversity-related incidents clearly and coherently. In summary, 23% of negative events are reported properly and there are no differences between sectors of activity. Only 7 of the 17 companies have admitted at least one of the incidents they have been linked to, but they also have been related to others that were partially disclosed or ignored.

Bird electrocution is the most clearly reported event by companies; 3 out of 4 cases, to be more precise. Although Naturgy mentions that "the systematic removal of carrion (dead livestock...) is carried out in and around wind farms in order to prevent bird collisions, particularly of certain birds of prey such as vultures, which are drawn to the carcasses to feed" (Naturgy, 2021 Sustainability report and non-financial information statement, p. 201), it makes no reference to incidents that have already occurred. Endesa and Iberdrola, by contrast, admit their responsibilities and report on the legal actions taken against them:

The total number of environmental sanctioning files is 114: [...] 111 in respect of Birdlife with a total amount of Euros 2,139,000. (Endesa, 2020 Statement of non-financial information and sustainability, p. 270)

18 criminal litigation cases, without fees, for birdlife. (Endesa, 2021 Statement of non-financial information and sustainability, p. 261)

In Spain, 73% of the total amount reflects fines for tree trimming, branch fires and the electrocution of birds due to contact with power

lines. (Iberdrola, 2020 Statement of non-financial information. Sustainability report, p. 170)

In Spain, 80% of the total amount of the fines was for issues related to tree trimming, branch fires and the electrocution of birds that came into contact with power lines. (Iberdrola, 2021 Statement of non-financial information. Sustainability report, p. 92)

The impact that energy companies have on indigenous communities and their ecosystems has been clearly reported 6 times in total. When this issue has been clearly reported, clear reference has been made to the specific indigenous community that has been affected and also to the action-plans adopted (see Tables 3 and 4). The impact that business activities have on indigenous communities has been taken into account because their lives are closely linked to nature (Boiral and Heras-Saizarbitoria, 2017). Iberdrola, for example, admits this incident in its SR:

The company, with a presence in 4 countries where there are indigenous communities (Brazil, Mexico, the United States and Australia) encourages business activities to be carried out with respect for different cultural identities, traditions and environmental wealth, as many times these communities depend on natural resources for their subsistence. (Iberdrola, 2020 Statement of non-financial information. Sustainability report, p. 268)

Finally, it is significant to note that in the CEO's message, Repsol has clearly reported an oil leak off the Peruvian coast. This is the only example found in all the reports analysed that admits an incident affecting marine ecosystems:

In particular, I would be remiss not to mention the current situation in Peru, where last January we suffered an oil spill caused by a sudden and unforeseeable movement of a ship that was unloading crude oil at the time. I would like to reiterate our absolute commitment to mitigating and repairing the effects of this accident, which we deeply regret. [...] As such, we will continue to work hard to resolve the situation, restore the ecosystems to the state they were in before the spill, rebuild the trust of all our stakeholders and continue contributing to the well-being and progress of Peruvian society, as we have been doing for the past 25 years. (Repsol, 2021 Integrated management report, p. 5)

Both types of incidents, bird fatalities and impacts on indigenous communities, are mostly disclosed through hard statements. The reports include numerical and verifiable information, such as the number of sanctions and lawsuits in which the companies are involved, the monetary amounts of the fines or the exact dates of the contentious proceedings.

4.2. Impression management techniques

Disclosing adverse information could affect the company's reputation and call into question its legitimacy in the eyes of stakeholders. Therefore, companies may choose to report negative biodiversity-related events in an unclear and incomplete manner, but in turn end up giving a less transparent picture of themselves. In this section, partially reported incidents are analysed in more detail, taking into account the four neutralisation techniques proposed by Boiral (2016). Incidents not reported in official company reports were not included in this analysis, as the absence of information can be considered a form of impression management, and the four neutralisation techniques are used when the company provides the pertinent information, albeit in a manipulated form. Cases in which the company reported the incident in a clear and unambiguous way were also excluded, as it is assumed that such information would be presented in a reliable manner without the need to show an altered image of the incident.

The 14 partially informed events have been classified into one of these four categories (see Table 7): (1) claiming net-positive/neutral

Table 7

Impression management techniques used in different types of negative biodiversity-related events for partially reported incidents.

Type of the negative event	Partially reported events	Impression management neutralisation techniques following Boiral (2016)			
		Claiming net-positive /neutral impact	Denial of significant impact	Distancing from the reported impact	Dilution of responsibilities
(1) impact on a marine ecosystem	2	-	-	1	1
(2) impact on a migratory corridor	0	-	-	-	-
(3) emptying/flooding of reservoirs and glacial lakes	0	-	-	-	-
(4) electrocution or damage to birds	1	-	-	1	-
(5) impact on indigenous territories	4	-	-	4	-
(6) deforestation of rainforest	5	4	-	-	1
(7) impact on a terrestrial ecosystem	2	1	-	-	1
TOTAL	14	5	-	6	3
Percentage	100%	36%	-	43%	21%

impact, (2) denial of significant impact, (3) distancing from the reported impact and (4) dilution of responsibilities. The first category takes an optimistic view either by praising business excellence or asserting that positive activities balance out negative ones, achieving a neutral equilibrium. The second category could be considered the most radical technique, as it rejects involvement in any significant impact. The third category is used when the company admits its involvement to some extent but attempts to minimise it as much as possible. Finally, companies that employ the fourth technique attempt to evade responsibility and shift focus onto other actors involved, in order to distance themselves from the incident.

In comparison with Boiral's analysis, none of the companies deny the existence of significant impacts affecting biodiversity (category 2). For example, analysing Naturgy's statement in reference to the collision of birds on power lines, the company is aware of the impact on species in the vicinity of their facilities, although relativise the importance of the magnitude of the issue (category 3):

The construction and operation of plants and infrastructure can affect certain species, although not to such a degree that they totally disappear. (Naturgy, 2020 Sustainability report and non-financial information statement, p. 150)

The information that claims a neutralisation of the negative impacts on biodiversity (category 1) is found in 36% of the partially informed events. Additionally, this type of neutralisation technique is in most cases linked to events related to deforestation. Companies somewhat admit the fact that they are negatively impacting biodiversity through rainforest destruction, but as they are also promoting compensatory actions, they apparently mitigate the impact. Eni, for example, is "allowing the replacement of palm oil with other sustainable sources" (Eni, 2020 Annual report, p.76) and others have several compensation projects underway:

In 2021, Galp's target was to implement 15 new projects with 8 of them avoiding deforestation and 7 requiring deforestation compensation measures. However, only 6 of the 15 projects were implemented, 1 avoiding deforestation and 5 requiring deforestation compensation measures such as the plantation of 2 ha of cork oaks in the Algarve region of Portugal. For 2022, Galp plans to implement 19 new projects, all of them avoiding deforestation. (Galp, 2021 Integrated management report, p. 122)

We compensate the use of land for our opencast mining by recultivating the extraction sites. This approach enables us to establish new woodlands and return rehabilitated areas of land to agriculture and other uses while also creating space for nature conservation where we can strategically boost biological diversity. (RWE, 2021 Sustainability report, p. 39)

The installation of photovoltaic plants and the resulting change in the landscape also threatens biodiversity. Enel defends itself by claiming that "generate energy without harmful emissions and provide a favourable

habitat for bees" (Enel, 2020 Sustainability report, p. 130) and thus neutralise the aforementioned negative impact.

Most companies distance themselves from the disclosed impacts (category 3). This can be done, on the one hand, by minimising and contextualising the significance of the impact and, on the other hand, by highlighting the uncertainties surrounding the incident (Boiral, 2016). In the first approach, references to plans that are being carried out to restore the situation can be found. For example, Repsol contextualises the following impact on indigenous communities:

A highlight was the dismantling of the Mapi and Mashira wells in Block 57 in Peru, where an Ecological Restoration Plan is being carried out under an agreement with the Eco Asháninka indigenous organization. Replanting monitoring is coming to an end and the social investment plan established in the abandonment strategy is being implemented. (Repsol, 2020 Integrated management report, p. 165)

Other reports also use the following wording: "measures are also under way" (Iberdrola, 2021 Statement of non-financial information. Sustainability report, p. 90); "developing new projects" (Enel, 2021 sustainability report, p. 443) and "develops programmes" (Naturgy, 2020 Sustainability report and non-financial information statement, p. 266). These expressions seem to emphasise more the process itself rather than the final outcome. Following the metaphor of the journey (Milne et al., 2006), there are constant references to the itinerary without a clear end-destination. Rather than presenting a genuine commitment towards stakeholders, these explanations may imply an inability to determine where they are heading; a never-ending journey that leads nowhere. The second approach highlights the uncertainties when it comes to biodiversity-related impacts. Expressions such as "may lead to oil spills" (OMV, 2021 Sustainability report, p. 54) or "can affect certain species" (Naturgy, 2020 Sustainability report and non-financial information statement, p. 150) underline the uncertainty of the occurrence of negative events.

Finally, companies also tend to dilute responsibilities by focusing the spotlight on other actors or by claiming to share responsibilities with other stakeholders (category 4). For example, Total focuses attention on its suppliers to justify the use of "sustainable" palm oil and thus dilute any responsibility for biodiversity-related incidents:

Palm oil Suppliers are screened to ensure that the palm oil supplied is certified as sustainable according European Union criteria (EU ISCC certification). These criteria include a review of carbon footprint, the preservation of forests, good use of land and respect for human rights. In addition to this mandatory certification, Suppliers must have signed the Fundamental Principles of Purchasing and be members of the Roundtable on Sustainable Palm Oil (RSPO). (Total, 2020 Universal registration document, p. 119)

5. Discussion

Companies in the utilities and energy sectors fail to report negative events affecting ecosystems. These findings are consistent with previous research on biodiversity in corporate reports from the perspective of impression management (see, e.g., Boiral, 2016; Syarifuddin and Damayanti, 2019). Almost half of the incidents identified by external sources have not been addressed in the official corporate reports. Incidents directly impacting marine or terrestrial ecosystems, bird migration corridors and problems caused by the emptying of reservoirs are most often overlooked by companies. Other ecosystem-destroying actions, such as rainforest deforestation, are disclosed in the reports analysed, but when they are, they resort to impression management strategies. In contrast to what Boiral (2016) found, in recent years companies are becoming aware of their impacts on biodiversity and none of the issues addressed by them were denied or minimised. However, companies that partially report incidents continue to use other mechanisms to manage stakeholder impressions. The most commonly used strategy is to admit the issue but to distance oneself from it, contextualising the impact and highlighting the uncertainties surrounding it. The other strategies are the claim of a neutral or net-positive impact and the assertion of sharing responsibilities with other stakeholders. The results show that bird electrocutions and impacts on indigenous communities are, with a few exceptions, fully reported by companies. In addition, we have showed that these issues are communicated in an objective manner, i.e. with the use of hard disclosures.

Clarkson et al. (2008) developed a content analysis index based on Global Reporting Initiative (GRI) guidelines and classified environmental disclosures into two categories: hard (objective, quantitative and verifiable disclosures) and soft (narrative, qualitative and unverifiable disclosures). Companies tend to provide more soft than hard disclosures in their SRs (Ahmad and Mohamad, 2014; Clarkson et al., 2008; Moussa et al., 2022; Ong et al., 2016) and when they do disclose hard information, the quality is rather low (Jeriji and Louhichi, 2021). Objective hard disclosures are considered more reliable and complete (Ahmad and Mohamad, 2014) and, therefore, promote corporate accountability and transparency (Benlemlih et al., 2018). However, it seems that soft symbolic disclosures are the preferred option, even for companies with high environmental sensitivity (Moussa et al., 2022). Companies are aware of being publicly scrutinised and give a favourable self-image (Ahmad and Mohamad, 2014), in line with the notions of impression management theory.

Negative events are oftentimes not reported, and when they are, they are typically presented in a biased way with the use of carefully designed statements to manage stakeholders' impressions and avoid possible bad consequences. The communication of negative information often consists of vague statements that do not reflect reality transparently, that is, they are largely based on soft disclosures. Studies that have analysed the reporting of adverse information in terms of hard or soft disclosures have concurred on the predominance of positive information and soft disclosures in corporate SRs (Ahmad and Mohamad, 2014; Jeriji and Louhichi, 2021) and our results are consistent with previous research. Because hard disclosures are verifiable, companies may avoid reporting them for fear of being caught in potential misinformation (Jeriji and Louhichi, 2021) and, therefore, stick to subjective and secure soft disclosures. Ramya et al. (2020) observed that regarding biodiversity conservation, most companies report in detail through hard disclosures on tree or sapling planting programmes (positive reporting), but they neglect to mention any details on deforestation practices (negative reporting). This study observes that, as far as deforestation is concerned, companies partially report on it and make use of impression management strategies. This observation is consistent with the results of this study.

Unexpectedly, if we check our results against previous studies that determined a lack of information regarding the amounts spent on environmental fines (see, e.g., Ahmad and Mohamad, 2014; Moussa

et al., 2022), it can be concluded that fines for bird fatalities and ongoing lawsuits affecting indigenous communities are indeed reported though verifiable hard statements. The reason behind this may be several. First, hard disclosures are more likely to be reported when the perceived benefits outweigh the costs (Benlemlih et al., 2018). Second, companies may first want to publish this negative information in detail before it being exposed by external parties (Reimsbach and Hahn, 2015). Finally, when disclosing negative information of this kind, they may later compensate by providing higher quality of positive information (Chauvey et al., 2015).

In general, negative biodiversity-related events are communicated through soft disclosures and this fact also supports the theory of impression management. Corporate reporting should include more objective and specific hard disclosures, but this may be more challenging when it comes to biodiversity, as it is difficult to measure (Moussa et al., 2022). Questioning the SMART (specific, measurable, ambitious, realistic and time-bound) nature of the Aichi targets set by the UN Convention on Biological Diversity (CBD), according to Maxwell et al. (2015, p. 1075): "The proposed SDG target to "halt the loss of biodiversity" specifies that there must be no biodiversity loss (a clearly defined level). But measuring changes in biodiversity is extremely difficult, so quantification is ambiguous". Unlike carbon emissions, which are easy to quantify (Ferreira, 2017), due to its complexity, biodiversity issues are hard to address through objective calculations (Tregidga, 2013).

6. Conclusion

Through a counter-accounting approach, the study analyses the reporting practices on negative biodiversity-related events of selected companies in the energy and utilities sectors. This study makes several contributions to the literature on biodiversity accounting. First, we contribute to the existing research in impression management theory and agree with other researchers that companies are motivated to present an idealised image of themselves. In line with previous studies, there is a lack of genuine commitment to transparently report negative incidents related to impacts on biodiversity due to corporate activities, as almost half of the incidents were not disclosed in any way in the official reports analysed. Second, instead of analysing the content of biodiversity issues in SRs, we first identified biodiversity-related incidents through reports from external sources and then compared the non-official reports with the official public disclosures. Third, we identified that, although there is an increased awareness of corporate responsibility, companies continue to use impression management strategies to communicate negative information that may affect them. Finally, the results suggest that some hard disclosures are being reported. We found that bird fatalities and negative impacts on indigenous territories are the two types of incidents that are reported comprehensively and objectively in SRs.

Our findings may be useful for academics, practitioners and policy makers interested in biodiversity conservation and reporting practices. This study complements previous studies on environmental accounting and contributes to the emerging field of biodiversity accounting. Managers and other stakeholders could benefit from the findings of this study when designing and implementing specific management measures to prevent biodiversity degradation, as well as to improve reporting practices, especially when accidents occur. When reporting on negative events, it should be reflected on what is reported and what is not, and the reasons behind those decisions. Policy makers and regulators could also consider this information relevant when developing regulations or indicators in line with biodiversity conservation in the framework of the "European Green Deal" and the "EU Biodiversity Strategy for 2030". The Taskforce on Nature-related Financial Disclosures (TNFD) launched voluntary recommendations in 2023, including disclosures about biodiversity, for decision makers in business capital markets. Almost simultaneously, the European Commission approved the compulsory

application of the ESRS for sustainability reporting. The ESRS E4 could serve as a valuable reporting tool for organisations to demonstrate their contributions to biodiversity conservation and sustainable ecosystem management. By aligning their reporting practices with the ESRS E4, companies can provide standardised information about their efforts to protect biodiversity and minimise negative environmental impacts, respecting planetary boundaries related to biosphere integrity and aligned with the vision of the Kunming-Montreal Global Biodiversity Framework and its relevant goals and targets. These disclosures should be verified by an independent assurer (i.e., auditor, expert), which could increase reliability and avoid impression management practices.

The study has some limitations. First, this paper is a qualitative study and the possibility of bias is greater than in quantitative studies. In the process of selecting the negative events, in order to reduce the possible bias, we have used different sources of information to check that the identified events were indeed real. As for the process of categorising the events, the opinions and points of view of the authors were decisive in classifying them into the different categories proposed, and it should be noted that other researchers could reach different conclusions to those shown in this study. Second, the research has analysed specific sectors (energy and utilities) and the results may differ if other sectors are analysed. In addition, when searching for information in external sources, only two languages were considered and the results obtained could have been more if the search had been carried out in other languages. Furthermore, only publicly available official reports (e.g., SRs, integrated reports) were consulted. Future studies could consider other types of official communications, such as corporate websites or social media posts.

Different research opportunities remain open for further exploration. This study does not explore the emancipatory potential of counter-accounting and, although it has been critically addressed before (see, e.g., Tweedie, 2022), we recognise the need for further research in this regard. It would also be interesting to examine the reporting of selective statements through other less well-known theoretical lenses in the field of environmental accounting, such as Baudrillard's (1994) notions of hyperreality (see, e.g., Boiral, 2013; Boiral and Henri, 2017). "The

repeated use of a single theory may lead to the production of marginal contributions instead of creating compelling advances to knowledge" (Cho et al., 2018, p. 869) and therefore exploring theories that have not been overused could broaden the field and lead to new findings. The results of this study could also be complemented by interviews that could shed light on why some negative incidents are reported and others not, and it could also be interesting to focus on different sectors or geographical areas. Analyses of images or photographs (see, e.g., Boiral, 2013; Chong et al., 2019; Hrasky, 2012), graphs (see, e.g., Cho et al., 2012) infographics (Kanbaty et al., 2020) or the choice of colours (see, e.g., García-Sánchez and Araújo-Bernardo, 2020) in sustainability reports could also contribute to determining how companies employ non-textual disclosures to manage stakeholder impressions. Future studies could also analyse the implementation of the ESRS E4 in European companies and assess whether this has enhanced the transparency about biodiversity and ecosystem matters. Finally, we also encourage future researchers to further investigate soft/hard disclosure practices, because although the studies agree that negative information is generally reported through soft disclosures, we found that there are some incidents that are actually reported through hard disclosures.

CRediT authorship contribution statement

Igor Álvarez Etxeberria: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **JM Moneva:** Writing – review & editing, Writing – original draft, Methodology. **Goizeder Blanco-Zaitegi:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization.

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Appendix . : Summary table of the companies analysed that were involved with an incident according to their sector of activity and country of origin, the official corporate reports consulted, the number of incidents involved categorised by their type and the way in which they have been reported by the companies

Company	Sector	Country	Official corporate reports	No. identified negative events	Type of negative events	Non-reported	Partially reported	Clearly reported
EDF	Utilities	France	Universal registration document 2020 Universal registration document 2021	2	(1) impact on a marine ecosystem [1] (5) impact on indigenous territories [1]	0	1 (1)	1 (5)
EDP (ENERGIA DE PORTUGAL)	Utilities	Portugal	Annual report 2020 Annual report 2021 Sustainability report 2020 Sustainability report 2021	3	(2) impact on a migratory corridor [1] (5) impact on indigenous territories [1] (7) impact on a terrestrial ecosystem [1]	3 (2) (5) (7)	0	0
ENAGAS	Energy	Spain	Annual report 2020 Annual report 2021	1	(5) impact on indigenous territories [1]	1 (5)	0	0

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Company	Sector	Country	Official corporate reports	No. identified negative events	Type of negative events	Non-reported	Partially reported	Clearly reported
ENDESA	Utilities	Spain	Sustainability report 2020 Sustainability report 2021	3	(3) emptying/flooding of reservoirs and glacial lakes [1] (4) electrocution or damage to birds [1] (5) impact on indigenous territories [1]	2 (3) (5)	0	1 (4)
ENEL	Utilities	Italy	Integrated report 2020 Integrated report 2021 Sustainability report 2020 Sustainability report 2021	6	(5) impact on indigenous territories [4] (7) impact on a terrestrial ecosystem [2]	0	4 (5) (5) (7) (7)	2 (5) (5)
ENI	Energy	Italy	Annual report 2020 Annual report 2021 ENI for 2020 - A just transition ENI for 2021 - A just transition ENI for 2020 - Carbon neutrality by 2050 ENI for 2021 - Carbon neutrality by 2050 ENI for 2020 - Sustainability performance ENI for 2021 - Sustainability performance	3	(1) impact on a marine ecosystem [1] (5) impact on indigenous territories [1] (6) deforestation of rainforest [1]	2 (1) (5)	1 (6)	0
GALP ENERGIA	Energy	Portugal	Integrated report 2020 Integrated report 2021	3	(1) impact on a marine ecosystem [2] (6) deforestation of rainforest [1]	2 (1) (1)	1 (6)	0
IBERDROLA	Utilities	Spain	Integrated report 2020 Integrated report 2021 Sustainability report 2020 Sustainability report 2021	7	(1) impact on a marine ecosystem [1] (3) emptying/flooding of reservoirs and glacial lakes [2] (4) electrocution or damage to birds [2] (5) impact on indigenous territories [2]	3 (1) (3) (3)	1 (5)	3 (4) (4) (5)
NATURGY ENERGY GROUP	Utilities	Spain	Annual report 2020 Annual report 2021 Sustainability report 2020 Sustainability report 2021	2	(4) electrocution or damage to birds [1] (5) impact on indigenous territories [1]	0	2 (4) (5)	0
NESTE	Energy	Finland	Annual report 2020 Annual report 2021	2	(6) deforestation of rainforest [1] (7) impact on a terrestrial ecosystem [1]	1 (7)	0	1 (6)
OMV	Energy	Austria	Annual report 2020 Annual report 2021	1	(1) impact on a marine ecosystem [1]	0	1 (1)	0
REPSOL	Energy	Spain	Integrated report 2020 Integrated report 2021 Sustainability report 2020 Sustainability report 2021	2	(1) impact on a marine ecosystem [1] (6) deforestation of rainforest [1]	0	1 (6)	1 (1)

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Company	Sector	Country	Official corporate reports	No. identified negative events	Type of negative events	Non-reported	Partially reported	Clearly reported
RWE	Utilities	Germany	Annual report 2020 Annual report 2021 Sustainability report 2020 Sustainability report 2021	3	(3) emptying/flooding of reservoirs and glacial lakes [1] (6) deforestation of rainforest [1] (7) impact on a terrestrial ecosystem [1]	2 (3) (7)	1 (6)	0
SIEMENS ENERGY	Energy	Germany	Sustainability report 2020 Sustainability report 2021	1	(1) impact on a marine ecosystem [1]	1 (1)	0	0
SIEMENS GAMESA	Energy	Spain	Annual report 2020 Annual report 2021 Sustainability report 2020 Sustainability report 2021	3	(5) impact on indigenous territories [1] (6) deforestation of rainforest [2]	3 (5) (6) (6)	0	0
TOTAL	Energy	France	Universal registration document 2020 Universal registration document 2021	4	(1) impact on a marine ecosystem [1] (5) impact on indigenous territories [2] (6) deforestation of rainforest [1]	1 (1)	1 (6)	2 (5) (5)
VERBUND	Utilities	Austria	Integrated report 2020 Integrated report 2021	1	(7) impact on a terrestrial ecosystem [1]	1 (7)	0	0

References

- Adams, C.A., 2004. The ethical, social and environmental reporting-performance portrayal gap. *Account., Audit. Account. J.* Vol. 17 (No. 5), 731–757. <https://doi.org/10.1108/09513570410567791>.
- Adams, C.A., Larrinaga, C., 2019. Progress: engaging with organisations in pursuit of improved sustainability accounting and performance. *Account., Audit. Account. J.* Vol. 32 (No. 8), 2367–2394. <https://doi.org/10.1108/AAAJ-03-2018-3399>.
- Ahmad, N.N.N., Mohamad, N.A., 2014. Environmental disclosures by the Malaysian construction sector: exploring extent and quality. *Corp. Soc. Responsib. Environ. Manag.* Vol. 21 (No. 4), 240–252. <https://doi.org/10.1002/csr.1322>.
- Apostol, O.M., 2015. A project for Romania? The role of the civil society's counter-accounts in facilitating democratic change in society. *Account., Audit. Account. J.* Vol. 28 (No. 2), 210–241. <https://doi.org/10.1108/AAAJ-07-2012-01057>.
- Baudrillard, J., 1994. *Simulacra and simulation*. University of Michigan Press, Ann Arbor, MI.
- Bebbington, J., Larrinaga, C., Moneva, J.M., 2008. Corporate social reporting and reputation risk management. *Account., Audit. Account. J.* Vol. 21 (No. 3), 337–361. <https://doi.org/10.1108/09513570810863932>.
- Bellucci, M., Acuti, D., Simoni, L., Manetti, G., 2021. Restoring an eroded legitimacy: the adaptation of nonfinancial disclosure after a scandal and the risk of hypocrisy. *Account., Audit. Account. J.* Vol. 34 (No. 9), 164–186. <https://doi.org/10.1108/AAAJ-12-2019-4359>.
- Benlemlih, M., Shaikat, A., Qiu, Y., Trojanowski, G., 2018. Environmental and social disclosures and firm risk. *J. Bus. Ethics* Vol. 152, 613–626. <https://doi.org/10.1007/s10551-016-3285-5>.
- Blanco-Zaitegi, G., Álvarez Etxeberria, I., Moneva, J.M., 2022. Biodiversity accounting and reporting: A systematic literature review and bibliometric analysis. *J. Clean. Prod.* Vol. 371 (No. 133677) <https://doi.org/10.1016/j.jclepro.2022.133677>.
- Boiral, O., 2013. Sustainability reports as simulacra? A counter-account of A and A + GRI reports. *Account., Audit. Account. J.* Vol. 26 (No. 7), 1036–1071. <https://doi.org/10.1108/AAAJ-04-2012-00998>.
- Boiral, O., 2016. Accounting for the unaccountable: biodiversity reporting and impression management. *J. Bus. Ethics* Vol. 135 (No. 4), 751–768. <https://doi.org/10.1007/s10551-014-2497-9>.
- Boiral, O., Henri, J., 2017. Is sustainability performance comparable? A study of GRI reports of mining organizations. *Bus. Soc.* Vol. 56 (No. 2), 283–317. <https://doi.org/10.1177/0007650315576134>.
- Boiral, O., Heras-Saizarboritoria, I., 2017. Managing biodiversity through stakeholder involvement: why, who, and for what initiatives? *J. Bus. Ethics* Vol. 140 (No. 3), 403–421. <https://doi.org/10.1007/s10551-015-2668-3>.
- Chauvey, J., Giordano-Spring, S., Cho, C.H., Patten, D.M., 2015. The normativity and legitimacy of CSR disclosure: evidence from France. *J. Bus. Ethics* Vol. 130, 789–803. <https://doi.org/10.1007/s10551-014-2114-y>.
- Cho, C.H., Laine, M., Roberts, R.W., Rodrigue, M., 2018. The frontstage and backstage of corporate sustainability reporting: evidence from the arctic national wildlife refuge bill. *J. Bus. Ethics* Vol. 152 (No. 3), 865–886. <https://doi.org/10.1007/s10551-016-3375-4>.
- Cho, C.H., Michelon, G., Patten, D.M., 2012. Impression management in sustainability reports: an empirical investigation of the use of graphs. *Account. Public Interest* Vol. 12 (No. 1), 16–37. <https://doi.org/10.2308/apin-10249>.
- Chong, S., Narayan, A.K., Ali, I., 2019. Photographs depicting CSR: captured reality or creative illusion? *Pac. Account. Rev.* Vol. 31 (No. 3), 313–335. <https://doi.org/10.1108/PAR-10-2017-0086>.
- Clarkson, P.M., Li, Y., Richardson, G.D., Vasvari, F.P., 2008. Revisiting the relation between environmental performance and environmental disclosure: an empirical analysis. *Account., Organ. Soc.* Vol. 33 (Nos. 4-5), 303–327. <https://doi.org/10.1016/j.aos.2007.05.003>.
- Diouf, D., Boiral, O., 2017. The quality of sustainability reports and impression management: a stakeholder perspective. *Account., Audit. Account. J.* Vol. 30 (No. 3) <https://doi.org/10.1108/AAAJ-04-2015-2044>.
- Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, L 322/15, 16.12.2022.
- European Commission (2019), “The European green deal”, *Communication for the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the regions*, COM/2019/640, Brussels, 11.12.2019.
- European Commission (2020), “EU biodiversity strategy for 2030: bringing nature back into our lives”, *Communication for the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions*, COM/2020/380, Brussels, 20.5.2020.
- Ferreira, C., 2017. The contested instruments of a new governance regime: accounting for nature and building markets for biodiversity offsets. *Account., Audit. Account. J.* Vol. 30 (No. 7), 1568–1591. <https://doi.org/10.1108/AAAJ-12-2015-2336>.

- Gallhofer, S., Haslam, J., 2019. Some reflections on the construct of emancipatory accounting: shifting meaning and the possibilities of a new pragmatism. *Crit. Perspect. Account.* Vol. 63, 101975 <https://doi.org/10.1016/j.cpa.2017.01.004>.
- Gallhofer, S., Haslam, J., Monk, E., Roberts, C., 2006. The emancipatory potential of online reporting: the case of counter accounting. *Account., Audit. Account. J.* Vol. 19 (No. 5), 681–718. <https://doi.org/10.1108/09513570610689668>.
- García-Sánchez, I.M., Araújo-Bernardo, C.A., 2020. “What colour is the corporate social responsibility report? Structural visual rhetoric, impression management strategies, and stakeholder engagement”. *Corp. Soc. Responsib. Environ. Manag.* Vol. 27 (No. 2), 1117–1142. <https://doi.org/10.1002/csr.1869>.
- Gasparatos, A., Doll, C.N., Esteban, M., Ahmed, A., Olang, T.A., 2017. Renewable energy and biodiversity: Implications for transitioning to a green economy. *Renew. Sustain. Energy Rev.* Vol. 70, 161–184. <https://doi.org/10.1016/j.rser.2016.08.030>.
- Goffman, E., 1959. *The presentation of self in everyday life*. Doubleday, New York, NY.
- Hassan, A.M., Roberts, L., Atkins, J., 2020. Exploring factors relating to extinction disclosures: what motivates companies to report on biodiversity and species protection? *Bus. Strategy Environ.* Vol. 29 (No. 3), 1419–1436. <https://doi.org/10.1002/bse.2442>.
- Hassan, A., Roberts, L., Rodger, K., 2022. Corporate accountability for biodiversity and species extinction: evidence from organisations reporting on their impacts on nature. *Bus. Strategy Environ.* Vol. 31 (No. 1), 326–352. <https://doi.org/10.1002/bse.2890>.
- Hrasky, S., 2012. Visual disclosure strategies adopted by more and less sustainability-driven companies. *Account. Forum* Vol. 36 (No. 3), 154–165. <https://doi.org/10.1016/j.accfor.2012.02.001>.
- Hrasky, S., Jones, M., 2016. Lake Pedder: Accounting, environmental decision-making, nature and impression management. *Account. Forum* Vol. 40 (No.4), 285–299. <https://doi.org/10.1016/j.accfor.2016.06.005>.
- Jeriji, M., Louhichi, W., 2021. The relationship between poor CSR performance and hard, negative CSR information disclosures. *Sustain. Account., Manag. Policy J.* Vol. 12 (No.2), 410–436. <https://doi.org/10.1108/SAMPJ-04-2020-0094>.
- Jones, M.J., 2010. Accounting for the environment: towards a theoretical perspective for environmental accounting and reporting. *Account. Forum* Vol. 34 (No. 2), 123–138. <https://doi.org/10.1016/j.accfor.2010.03.001>.
- Kanbaty, M., Hellmann, A., He, L., 2020. Infographics in corporate sustainability reports: providing useful information or used for impression management? *J. Behav. Exp. Financ.* Vol. 26, 100309 <https://doi.org/10.1016/j.jbef.2020.100309>.
- Leung, S., Parker, L., Curtis, J., 2015. Impression management through minimal narrative disclosure in annual reports. *Br. Account. Rev.* Vol. 47 (No. 3), 275–289. <https://doi.org/10.1016/j.bar.2015.04.002>.
- Macellari, M., Yuriev, A., Testa, F., Boiral, O., 2021. Exploring bluewashing practices of alleged sustainability leaders through a counter-accounting analysis. *Environ. Impact Assess. Rev.* Vol. 86, 106489 <https://doi.org/10.1016/j.eiar.2020.106489>.
- Maxwell, S.L., Milner-Gulland, E.J., Jones, J.P.G., Knight, A.T., Bunnefeld, N., Nuno, A., Bal, P., Earle, S., Watson, J.E.M., Rhodes, J.R., 2015. Being smart about SMART environmental targets. *Science* Vol. 347 (No. 6226), 1075–1076. <https://doi.org/10.1126/science.aal1451>.
- Merkl-Davies, D.M., Brennan, N.M., 2011. A conceptual framework of impression management: new insights from psychology, sociology and critical perspectives. *Account. Bus. Res.* Vol. 41 (No. 5), 415–437. <https://doi.org/10.1080/00014788.2011.574222>.
- Milne, M.J., Kearins, K., Walton, S., 2006. Creating adventures in wonderland: The journey metaphor and environmental sustainability. *Organization* Vol. 13 (No. 6), 801–839. <https://doi.org/10.1177/1350508406068506>.
- Moussa, T., Kotb, A., Helfaya, A., 2022. An empirical investigation of UK environmental targets disclosure: the role of environmental governance and performance. *Eur. Account. Rev.* Vol. 31 (No. 4), 937–971. <https://doi.org/10.1080/09638180.2021.1890173>.
- Ong, T., Trireksani, T., Djajadikerta, H.G., 2016. Hard and soft sustainability disclosures: Australia’s resources industry. *Account. Res. J.* Vol. 29 (No. 2) <https://doi.org/10.1108/ARJ-03-2015-0030>.
- Panwar, R., 2023. Business and biodiversity: achieving the 2050 vision for biodiversity conservation through transformative business practices. *Biodivers. Conserv.* Vol. 32, 3607–3613. <https://doi.org/10.1007/s10531-023-02575-1>.
- Perkiss, S., Bernardi, C., Dumay, J., Haslam, J., 2021. A sticky chocolate problem: Impression management and counter accounts in the shaping of corporate image. *Crit. Perspect. Account.* Vol. 81, 102229 <https://doi.org/10.1016/j.cpa.2020.102229>.
- Ramya, S.M., Shereen, A., Baral, R., 2020. Corporate environmental communication: a closer look at the initiatives from leading manufacturing and IT organizations in India. *Corp. Responsib. J.* Vol. 16 (No. 6), 843–859. <https://doi.org/10.1108/SRJ-11-2019-0376>.
- Reimbsbach, D., Hahn, R., 2015. The effects of negative incidents in sustainability reporting on investors’ judgments—an experimental study of third-party versus self-disclosure in the realm of sustainable development. *Bus. Strategy Environ.* Vol. 24 (No. 4), 217–235. <https://doi.org/10.1002/bse.1816>.
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F.S., Lambin, E., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H.J., Nykvist, B., de Wit, C.A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P.K., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R.W., Fabry, V.J., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., Foley, J., 2009. “Planetary boundaries: exploring the safe operating space for humanity”. *Ecol. Soc.* Vol. 14 (No. 2).
- She, C., 2022. Social media dissemination of counter accounts and stakeholder support—evidence from Greenpeace’s “Save the arctic” campaign on Facebook. *Account. Forum.* <https://doi.org/10.1080/01559982.2021.2019524>.
- Solomon, J.F., Solomon, A., Joseph, N.L., Norton, S.D., 2013. Impression management, myth creation and fabrication in private social and environmental reporting: insights from Erving Goffman. *Account., Organ. Soc.* Vol. 38 (No. 3), 195–213. <https://doi.org/10.1016/j.aos.2013.01.001>.
- Spence, C., 2009. Social accounting’s emancipatory potential: a gramscian critique. *Crit. Perspect. Account.* Vol. 20 (No. 2), 205–227. <https://doi.org/10.1016/j.cpa.2007.06.003>.
- Steffen, W., Richardson, K., Rockström, J., Cornell, S.E., Fetzer, I., Bennett, E.M., Biggs, R., Carpenter, S.R., de Vries, W., de Wit, C.A., Folke, C., Gerten, D., Heinke, J., Mace, G.M., Persson, L.M., Ramanathan, V., Reyers, B., Sörlin, S., 2015. Planetary boundaries: guiding human development on a changing planet. *Science* Vol. 347 (No. 6223), 1259855. <https://doi.org/10.1126/science.1259855>.
- Syarifuddin, S., Damayanti, R.A., 2019. Biodiversity accounting: uncover environmental destruction in Indonesia. *Soc. Responsib. J.* Vol. 16 (No. 6), 809–825. <https://doi.org/10.1108/SRJ-11-2018-0291>.
- Talbot, D., Barbat, G., 2020. Water disclosure in the mining sector: an assessment of the credibility of sustainability reports. *Corp. Soc. Responsib. Environ. Manag.* Vol. 27 (No. 3), 1241–1251. <https://doi.org/10.1002/csr.1880>.
- Talbot, D., Boiral, O., 2018. GHG reporting and impression management: an assessment of sustainability reports from the energy sector. *J. Bus. Ethics* Vol. 147 (No. 2), 367–383. <https://doi.org/10.1007/s10551-015-2979-4>.
- Talbot, D., Boiral, O., 2021. Public organizations and biodiversity disclosure: saving face to meet a legal obligation? *Bus. Strategy Environ.* Vol. 30 (No. 5), 2571–2586. <https://doi.org/10.1002/bse.2764>.
- Tregidga, H., 2013. Biodiversity offsetting: problematisation of an emerging governance regime. *Account., Audit. Account. J.* Vol. 26 (No. 5), 806–832. <https://doi.org/10.1108/AAAJ-02-2013-1234>.
- Tregidga, H., 2017. Speaking truth to power”: analysing shadow reporting as a form of shadow accounting. *Account., Audit. Account. J.* Vol. 30 (No. 3), 510–533. <https://doi.org/10.1108/AAAJ-01-2015-1942>.
- Tregidga, H., Laine, M., 2022. On crisis and emergency: is it time to rethink long-term environmental accounting? *Crit. Perspect. Account.* Vol. 82, 102311 <https://doi.org/10.1016/j.cpa.2021.102311>.
- Tweede, J., 2022. The emancipatory potential of counter accounting: a Žižekian critique. *Crit. Perspect. Account.*, 102505 <https://doi.org/10.1016/j.cpa.2022.102505>.
- United Nations (2015), “Transforming our world: the 2030 Agenda for Sustainable Development”, *Resolution adopted by the United Nations General Assembly, A/RES/70/1*, New York, NY, 25.9.2015.
- Vinnari, E., Laine, M., 2017. The moral mechanism of counter accounts: the case of industrial animal production. *Account., Organ. Soc.* Vol. 57, 1–17. <https://doi.org/10.1016/j.aos.2017.01.002>.
- Voigt, C.C., Straka, T.M., Fritze, M., 2019. Producing wind energy at the cost of biodiversity: a stakeholder view on a green-green dilemma. *J. Renew. Sustain. Energy* Vol. 11 (No. 6), 063303. <https://doi.org/10.1063/1.5118784>.