

# Planetary Boundaries for Business

The need for comprehensive environmental  
due diligence in the Corporate Sustainability  
Due Diligence Directive (CSDDD)



## Executive Summary

This briefing compiles a number of case studies that document severe adverse environmental impacts linked to businesses that are active in the EU. The cases provide a broad picture: they show that corporate environmental impacts are diverse and affect **all spheres of the natural environment** as well as **all kinds of industries** – be it agriculture, the extractive industries or energy production. They also span many different continents – **from Latin America, Asia and Africa to Europe** – and **all stages of a company's value chain**, from upstream (i.e. before the respective product or service is put on the market) to downstream (when a product is used and eventually disposed of).

Moreover, the cases demonstrate that an **adverse environmental impact is rarely, if ever, an isolated incident**. The different spheres of the natural environment are inherently interwoven. Therefore, a lack of environmental due diligence will almost inevitably cause a range of different environmental impacts. For example, lack of consideration for environmental risks in the extraction of mineral resources can lead to pollution of water, soil and air and affect biodiversity. It appears clear that the legislative approach taken to address these issues must be equally comprehensive and **cannot be limited to isolated environmental issues**.

The briefing highlights the persisting regulatory gap with regard to environmental impacts in corporate value chains in the context of **EU negotiations on the Corporate Sustainability Due Diligence Directive (CSDDD)**. It also underpins civil society demands for comprehensive environmental due diligence obligations with real-life examples that illustrate the shortcomings of some of the CSDDD proposals. It concludes that these shortcomings will only be overcome by the proposals currently put forward by the EU parliament.

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# Environmental due diligence and the CSDDD

The massive environmental impact of our globalised economy is a structural problem that is becoming more urgent every day. Part of this problem is the lack of accountability of corporations for the environmental destruction they cause or to which they contribute down (or up) their value chains.

Against this backdrop, there is increasing recognition that the corporate duty to act “diligently” with regard to adverse environmental impacts in value chains – which has long been recognised in authoritative international standards such as the Organisation for Economic Co-operation and Development’s (OECD’s) **Guidelines for Multinational Enterprises**<sup>1</sup> – needs to be spelt out in mandatory legislation. The underlying idea of environmental due diligence is the same as that of human rights due diligence: **companies have a legal obligation to prevent or bring to an end, as well as remediate, any adverse impacts on the environment that they have caused or contributed to or to which they are directly linked.**

The CSDDD, which is currently being negotiated at EU level, aims to prescribe mandatory environmental due diligence duties. All co-legislative bodies of the EU – the Commission, the Council and the European Parliament – have come up with their respective positions on the CSDDD, including its provisions on environmental due diligence. This briefing concludes that the environment is best served by the European Parliament’s position.

## Commission

The Commission proposal for the CSDDD suggests limiting environmental due diligence to a short list of “violations” extracted from international environmental conventions. These include prohibitions of the use of, or trade in, a limited list of harmful substances under certain circumstances (based on the Stockholm Convention, Minamata Convention, Rotterdam Convention and Montreal Protocol), prohibitions relating to certain types of hazardous waste (as regulated in the Stockholm, Minamata and Basel conventions), some limited obligations related to adverse impacts on biodiversity (taken from the Convention on Biological Diversity (CBD) and its Protocols), and the trade in endangered species (based on the Convention on International Trade in Endangered Species (CITES)).

In addition, the Commission proposal, in Article 15, includes an obligation to draft a plan “to ensure that the business model and strategy of the company are compatible with ... the limiting of global warming to 1.5°C in line with the Paris Agreement”. This obligation is listed separately from the corporate due diligence obligations and contains a number of ambiguities and exceptions.

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1 OECD, *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct*, 8 June 2023: [https://www.oecd-ilibrary.org/finance-and-investment/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct\\_81f92357-en](https://www.oecd-ilibrary.org/finance-and-investment/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_81f92357-en)

## Council

The Council position (“general approach”) proposes to extend the corporate obligations related to the CBD and introduces limited additional obligations from international conventions, relating to adverse impacts on certain protected areas (based on the World Heritage Convention as well as the Ramsar Convention) and certain types of pollution of the marine environment (based on obligations in the International Convention for the Prevention of Pollution from Ships (MARPOL) and the UN Convention on the Law of the Sea (UNCLOS)).

## European Parliament

The European Parliament takes a more comprehensive approach than the Commission and Council by providing a list of environmental categories to which the corporate due diligence obligations attach, in close alignment with the OECD Guidelines. The mentioned categories are climate change, biodiversity loss, air, water and soil pollution, degradation of land, marine and freshwater ecosystems, deforestation, overconsumption of material, water, energy and other natural resources, and harmful general and mismanagement of waste, including hazardous substances.

This approach is complemented by an extended list of prohibitions from international conventions, which, when compared in substance to the Commission and Council positions, takes away some important obligations (from the CBD, Rotterdam Convention, World Heritage Convention, Ramsar Convention and MARPOL) but also adds several others relating to climate change (based on the Paris Agreement), public participation in environmental matters and the protection of environmental defenders (Aarhus Convention) and adverse impacts on transboundary watercourses (based on the Water Convention).

The Parliament also proposes to make the obligations relating to the climate plans under Article 15, including the obligation to implement those plans, more specific.




## The regulatory gap

The CSDDD regulates adverse impacts on human rights, including some impacts – for example, on human livelihoods or health – that result from interference with the natural environment. However, human rights obligations can make up for the lack of comprehensive environmental due diligence duties only to a certain extent. Concepts of environment-focused human rights due diligence are inherently anthropocentric solutions with evidentiary limits. Examples from contemporary litigation illustrate how difficult it is in most cases to prove a causal link between environmental degradation and human rights impacts in judicial practice. It appears therefore clear that for our global value chains to be aligned with planetary boundaries, standalone environmental due diligence obligations are needed.

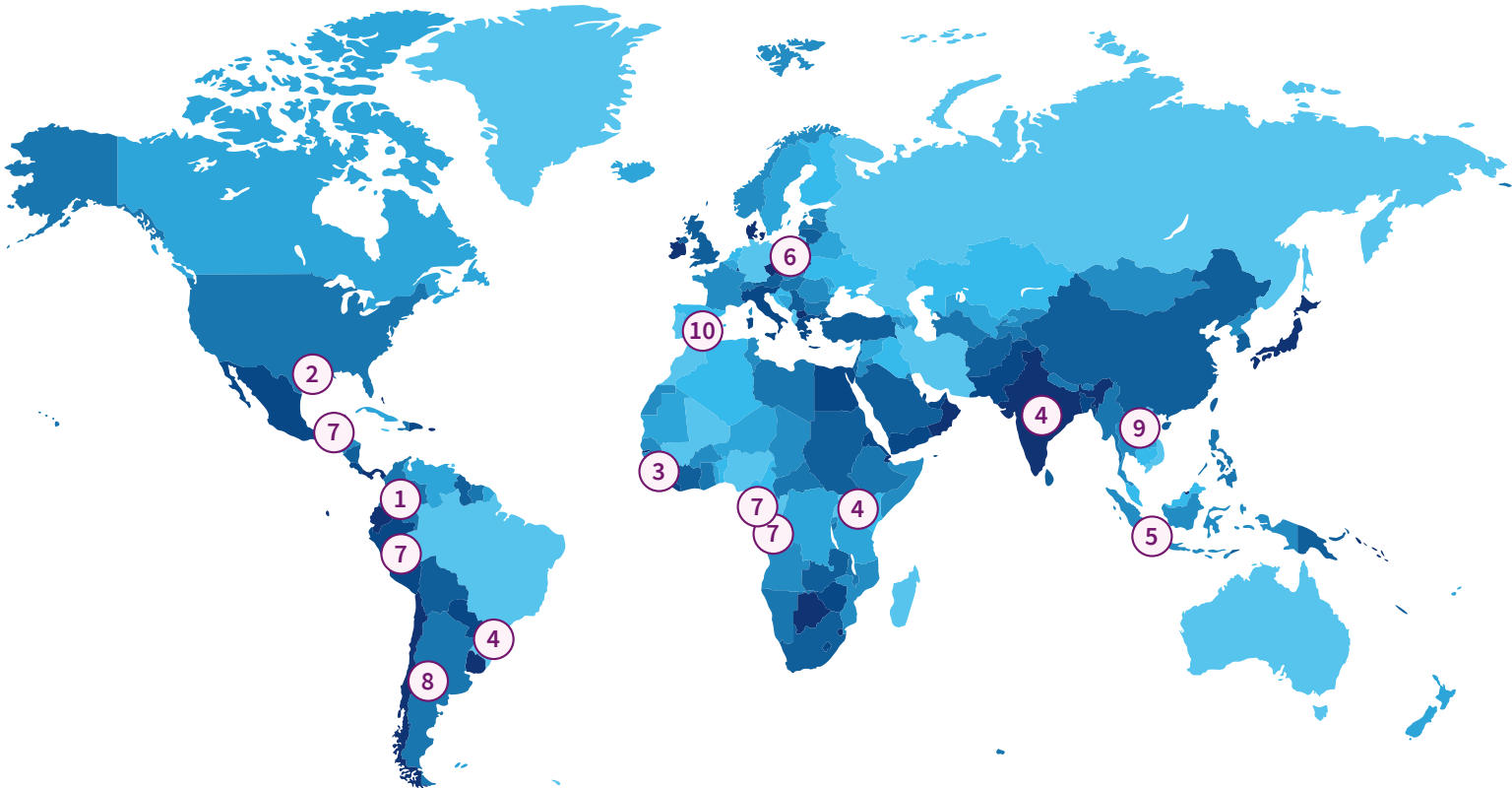
The cases listed in this briefing provide barely a glimpse of the immense environmental footprint of the respective industries. The problem is not limited to specific misbehaviour by a select few companies but is in many cases structural. Adequate handling of it requires a similarly **structural response**, which a reference to human rights or international environmental treaty law only does not provide. The idea of environmental due diligence based on a risk-based approach, as foreseen by the UN Guiding Principles on Business and Human Rights as well as the OECD Guidelines, requires companies to take adequate measures to set up an environmental management system and address all their environmental impacts, starting with the most severe. A closed list of a few isolated provisions from international treaties risks narrowing down due diligence to a mere exercise in box-ticking. What is needed instead is a list of environmental categories encompassing all elements of the natural environment that might be harmed by company operations, in line with the OECD Guidelines on Multinational Enterprises. The European Parliament's proposal follows such an approach. Not only would this allow for a more flexible and internationally aligned due diligence process, it would also, most importantly, raise the level of protection we award to our environment and planetary boundaries.

### *Explanation of the “traffic light” colour coding used in this report*

Attached to each of the case studies in this report is a table assessing the extent to which the environmental impacts described therein are likely to be covered by the respective CSDDD draft text. The colour-coding system drawn on in these tables can be read as follows:

-  RED = It is unlikely that the environmental impacts described would be covered by the respective CSDDD draft text.
-  YELLOW = It is possible that at least some of the described impacts would be covered by the respective CSDDD draft text.
-  GREEN = It is likely that all or most of the environmental impacts described would be covered by the respective CSDDD draft text.

## Cases of adverse environmental impact discussed in this briefing



1	BHP Group/South32
2*	Danone
3	SOCFIN
4	Syngenta AG, BASF, Bayer AG
5**	Holcim
6**	PGE GiEK S.A.
7	Perenco
8	TotalEnergies SE, Wintershall Dea, BNP Paribas, ING, Deutsche Bank
9	Andritz AG
10	(German) supermarket chains

\* Note: The environmental impacts described in this case are not limited to the United States, but span Danone's entire value chain.

\*\* Note: The climate impacts described in this case are not limited to one location only, but span the entire globe.

# Case Studies



## BHP Group/South32

<b>Stage of the value chain:</b> own business	<b>Sectors:</b> Mining of metal ores
<b>Types of involvement:</b> causing, contributing	<b>Countries:</b> Colombia

Covering almost 85 hectares in an indigenous reserve in northwest Colombia, Cerro Matoso is one of the largest open-pit ferronickel mines in the world and the largest in South America. It is run by a daughter company of South32,<sup>2</sup> itself a spin-off of the Australian mining company BHP,<sup>3</sup> whose subsidiary Cerro Matoso S.A. operated the mine until 2015.<sup>4</sup> The timely spin-off came a few months after the Colombian Constitutional Court's decision to take up proceedings against the mine operator.<sup>5</sup>

Having started operations in 1960, with a concession running until 2044,<sup>6</sup> the mine has been linked to various hazardous environmental impacts, including air pollution, and accused of lacking the environmental licence necessary under Colombian environmental law.

Both the extractive process in the mine and its waste management are polluting the air.

According to a Germanwatch report, Cerro Matoso's ferronickel is melted at high temperatures in furnaces. This leads to the release of significant amounts of particulate matter, heavy metals, metallic nickel, polycyclic aromatic hydrocarbons and a variety of complex oxides into the atmosphere.<sup>7</sup> Colombia does not have any legal limits on the permissible amount of nickel extraction.<sup>8</sup> South32 has so far not released any publicly available data on air and water quality in proximity to its mining operations.<sup>9</sup> However, in 2021, South32 announced an upgrade to the mine's environment management system as well as the establishment of real-time monitoring of particulate matter.<sup>10</sup>

2 Cerro Matoso, *Nosotros* [About us]: <https://www.cerromatoso.com.co/nosotros/>

3 ABC News, *BHP Billiton's South32 spin off: will it pay off?*, 5 May 2015: <https://www.abc.net.au/news/2015-05-05/bhp-billiton-south32-spin-off/6445510>

4 Germanwatch, *The Case of Cerro Matoso, Colombia: Why Environmental Due Diligence Matters in Mineral Supply Chains*, November 2020: [https://www.germanwatch.org/sites/default/files/Fallstudie\\_Kolumbien\\_EN\\_final.pdf](https://www.germanwatch.org/sites/default/files/Fallstudie_Kolumbien_EN_final.pdf), p. 8.

5 Forbidden Stories, *Rafael Project: How Mining Companies Bleed the Land Dry in Colombia*, 18 April 2023: <https://forbiddenstories.org/rafael-project-how-mining-companies-bleed-the-land-dry-in-colombia/>

6 Germanwatch, *The Case of Cerro Matoso, Colombia*, November 2020, p. 5.

7 Germanwatch, *The Case of Cerro Matoso, Colombia*, November 2020, p. 5.

8 Corte Constitucional de Colombia, *Sentencia T-733/17*, 20 September 2018: <https://www.corteconstitucional.gov.co/relatoria/2017/t-733-17.htm>

9 Germanwatch, *The Case of Cerro Matoso, Colombia*, November 2020, p. 11.

10 South32, *A Case Study in Building Community Partnerships*, 22 December 2021: <https://www.south32.net/news-media/latest-news/a-case-study-in-building-community-partnershipsmining>



There are also concerns about the disposal of the mine's waste, which takes a toll on the region's air quality as it is stored in the open air. Toxic particles are then dispersed by the weather and contaminate the region.<sup>11</sup>

On top of this, it is contested whether *Cerro Matoso* has a valid environmental licence.<sup>12</sup>

In 2013, indigenous governor and tribal chief Israel Aguilar filed a complaint with Colombia's Constitutional Court against Cerro Matoso and national mining agencies due to the adverse health effects on the local population. The plaintiff also sought to have Cerro Matoso renew its environmental licence, which at the time dated back to 1981.<sup>13</sup> Investigations by the Court confirmed levels of nickel above international recommendations in the blood of individuals living in proximity to the mine.<sup>14</sup> Five years later, the Court ruled that the company owed financial compensation and healthcare services to the affected communities.<sup>15</sup> South32 appealed the verdict, citing causality and methodological concerns, and in September 2018 the Court repealed its decision. The community lawyer suspected this to be the result of corruption.<sup>16</sup>

### Which adverse environmental impacts would the CSDDD cover?

Commission	Council	Parliament
None of the environmental conventions listed in the annex of the CSDDD cover adverse impacts on air per se. The reference to the Vienna Convention for the Protection of the Ozone Layer does not apply to the case at hand as it refers only to specific substances that deplete the ozone layer. The Basel Convention's obligation to manage waste in an environmentally sound manner applies only to the export of hazardous or other wastes, not to waste that is managed domestically. Point 18 of the Commission proposal's human rights annex could potentially apply; however, its potential could be seriously dampened in practice due to the strong causality link required.	None of the further provisions from international environmental conventions added to the annex of the CSDDD by the Council appear to address adverse impacts on air.	The obligations to identify, prevent, mitigate or bring to an end adverse impacts on air, as well as harmful generation and mismanagement of waste, are likely to cover the described impacts.

11 Forbidden Stories, *Rafael Project*, 18 April 2023.

12 El Tiempo, *Cerro Matoso sigue en deuda con los zenúes* [Cerro Matoso remains indebted to the Zenúes], 26 July 2019: <https://www.eltiempo.com/datos/cerro-matoso-en-deuda-con-los-zenues-352258>

13 Forbidden Stories, *Rafael Project*, 18 April 2023.

14 Forbidden Stories, *Rafael Project*, 18 April 2023.

15 Forbidden Stories, *Rafael Project*, 18 April 2023.

16 Forbidden Stories, *Rafael Project*, 18 April 2023.

## Danone

<b>Stage of the value chain:</b> upstream, downstream	<b>Sectors:</b> manufacture of food product
<b>Types of involvement:</b> contributing	<b>Countries:</b> US, worldwide

Danone S.A. is a multinational food products corporation headquartered in Paris.<sup>17</sup> It employs about 100,000 people in over 55 countries.<sup>18</sup> It had EUR 2.5 billion of free cash flow and total global sales of EUR 24.3 billion in 2021, and its products are available in over 120 countries.<sup>19</sup> As a producer and supplier of food products generally packed in plastic, Danone is a globally significant corporate user of plastic packaging and one of the world's biggest plastic waste producers.<sup>20</sup> Most of its plastic packaging consists of PET bottles (45%), with PS rigids (14%) and HDPE bottles (10%) featuring second and third.<sup>21</sup> In January 2023, the company was sued by nongovernmental organisations ClientEarth, Surfrider Foundation Europe and Zero Waste France on grounds of alleged breaches of the French Duty of Vigilance law.<sup>22</sup>

Among many other environmental impacts, Danone's plastic packaging is polluting the air in both its upstream and downstream supply chains. Not only does air pollution harm human health but it also degrades environments and reduces biodiversity.<sup>23</sup>

Danone's plastic packaging is inextricably linked to the fossil fuel industry, and hence to air pollution from the impacts of petrochemical production. The company is among nine of the biggest buyers of single-use plastic packaging identified in a 2021 investigation by Greenpeace, which delved into the links between the fossil fuel and food and beverage industries.<sup>24</sup> Unless strict legislative hurdles are enacted, this relationship is only going to gain in relevance, as industry estimates foresee plastic production doubling by 2030–2035 and tripling by 2050, compared with numbers from 2015.<sup>25</sup>

The plastic packaging supply chain starts with the extraction of oil or gas by fossil fuel companies. The next step is refining out the feedstock and turning it into olefin monomers. The monomers are then polymerised and processed into plastic resins – the raw material for

17 Danone, *Facts and Figures*, no date: <https://www.danone.com/about-danone/at-a-glance/danone-data.html>

18 Danone, *Facts and Figures*, no date.

19 Danone, *Facts and Figures*, no date.

20 Break Free From Plastic, *Branded: Five Years of Holding Corporate Plastic Polluters Accountable*, 2022: <https://brandaudit.breakfreefromplastic.org/wp-content/uploads/2022/11/BRANDED-brand-audit-report-2022.pdf>, p. 10.

21 Ellen MacArthur Foundation, *Danone S.A. Global Commitment 2021 Signatory Report*, 2021: <https://ellenmacarthurfoundation.org/global-commitment-2021/signatory-reports/ppu/danone-sa>

22 Client Earth, *We're taking Danone to court over plastic pollution*, 10 May 2023: <https://www.clientearth.org/latest/latest-updates/news/we-ve-issued-legal-warnings-to-nestle-danone-and-others-over-plastic/>

23 European Environmental Agency (EEA), *Air quality in Europe 2022. Impacts of air pollution on ecosystems*, 24 November 2022: <https://www.eea.europa.eu/publications/air-quality-in-europe-2022/impacts-of-air-pollution-on-ecosystems#:~:text=Air%20pollution%20has%20negative%20impacts,vegetation%20to%20key%20air%20pollutants>

24 Greenpeace, *The Climate Emergency Unpacked: How Consumer Goods Companies Are Fueling Big Oil's Plastic Expansion*, 14 September 2021: [https://www.greenpeace.org/usa/wp-content/uploads/2021/09/1001\\_GP\\_Unpacked\\_Report\\_ENG\\_FINAL.pdf](https://www.greenpeace.org/usa/wp-content/uploads/2021/09/1001_GP_Unpacked_Report_ENG_FINAL.pdf)

25 Greenpeace, *The Climate Emergency Unpacked*, 14 September 2021, p. 3.

plastic packaging. The processes at fossil fuel extraction sites, refineries and petrochemical facilities all require the emission of toxic chemicals, which pollute the air.<sup>26</sup>

One of Danone's suppliers for its packaging is the specialist packaging manufacturer Amcor, itself supplied with plastic resins by – among others – petrochemical heavy hitter ExxonMobil, considered one of the biggest industrial polluters worldwide.<sup>27</sup> ExxonMobil has been the subject of extensive litigation for alleged violations of its Clean Air Act permit in the US.<sup>28</sup> Residents of Baytown, Texas, have accused the company of violating the Clean Air Act by releasing harmful emissions such as sulphur dioxide, carbon monoxide, butadiene and benzene into the air at its Baytown refinery complex – one of the US's largest petrochemical facilities, which also includes an olefins facility.<sup>29</sup> The company itself reported more than 16,000 air pollution violations between 2005 and 2013 for that site.<sup>30</sup> In the decade from 2010 to 2019 it was fined 22 times for violations of the Clean Air Act.<sup>31</sup> The caveat? It is contested whether relief under the Clean Air Act requires the plaintiff to trace each injury to a particular source.<sup>32</sup> Environmental activists argue that the chemical compounds emitted in petrochemical operations could lead to cancer and asthma, among other illnesses, even if immediate exposure is not toxic.<sup>33</sup> But litigation against Exxon has been long and arduous for the Baytown residents, and Exxon claims that the plaintiffs have failed to prove they have been injured by the air pollution.

Danone's downstream supply chain is also likely to strain air quality. Although it is generally regarded as an environmentally and resource-friendly method, plastic recycling comes with significant risks for local air quality.<sup>34</sup> As the plastic is shredded, tiny particles (PM 2.5) are released. If inhaled, they can affect the respiratory and cardiovascular system.<sup>35</sup> When plastic is heated and melted, it releases volatile organic compounds (VOCs) and fly ash.<sup>36</sup> As plastic recycling methods are uniform all over the world,<sup>37</sup> these emissions can be expected no matter which recycling facility is at the receiving end of Danone's plastic packaging.

Historically, however, more than 90% of all plastic waste ever generated has not been recycled, but landfilled or – to a lesser extent – incinerated.<sup>38</sup> Both practices produce a variety of toxic air emissions. Landfills emit carbon monoxide and methane, NO<sub>x</sub>, sulphur dioxide and

26 Center for International Environmental Law (CIEL), *Plastic & Health: The Hidden Costs of a Plastic Planet*, February 2019: <https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-Planet-February-2019.pdf>, pp. 17–20.

27 Greenpeace, *The Climate Emergency Unpacked*, 14 September 2021, pp. 8, 11–13.

28 *Washington Post*, "Toxic air, explosions: Inside the bitter battle between Texas residents and Exxon", 16 March 2023: <https://www.washingtonpost.com/climate-environment/2023/03/15/exxon-pollution-lawsuit-baytown-texas/>

29 *Washington Post*, "Toxic air, explosions", 16 March 2023.

30 *Washington Post*, "Toxic air, explosions", 16 March 2023.

31 Greenpeace, *The Climate Emergency Unpacked*, 14 September 2021, p. 31.

32 Bloomberg, *Exxon Targets Standing in Largest-Ever Citizen Lawsuit Penalty*, 15 May 2023: <https://news.bloomberglaw.com/environment-and-energy/exxon-targets-standing-in-largest-ever-citizen-lawsuit-penalty>

33 *Washington Post*, "Toxic air, explosions", 16 March 2023.

34 Human Rights Watch, "It's As If They're Poisoning Us": *The Health Impacts of Plastic Recycling in Turkey*, 2022: [https://www.hrw.org/sites/default/files/media\\_2022/09/turkey0922web\\_0.pdf](https://www.hrw.org/sites/default/files/media_2022/09/turkey0922web_0.pdf)

35 Human Rights Watch, "It's As If They're Poisoning Us", 2022.

36 Greenpeace, *The Climate Emergency Unpacked*, 14 September 2021, p. 31.

37 Human Rights Watch, "It's As If They're Poisoning Us", 2022, p. 31.

38 Geyer, R., Jambeck, J., and Law, K., "Production, use, and fate of all plastics ever made", *Science Advances* 3(7), 19 July 2017: <https://www.science.org/doi/10.1126/sciadv.1700782>; note that these numbers are from 2015.

VOCs.<sup>39</sup> These emissions can have depleting effects on the ozone layer, with methane being a global ozone precursor.<sup>40</sup> Depending on the condition of the incineration facility, they can give off dioxins, furans, mercury and polychlorinated biphenyls.<sup>41</sup>

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>Point 18 of Annex Part I would not sufficiently address the impacts described: the litigation efforts against ExxonMobil illustrate how difficult it could be – if not outright impossible – to establish the link between air pollution (even where it is uncontested) and health hazards in judicial practice.</p> <p>As long as Danone’s plastic packaging waste is exported from the state of sale, the Commission’s proposal could potentially cover it via reference to the Basel Convention’s requirement to manage wastes in an environmentally sound manner in Point 10(d), Annex Part II. There is no provision on domestic waste management.</p>	<p>None of the additional environmental conventions added to the annex by the Council would cover the impacts described above. The Council, however, maintains the reference to the Basel Convention.</p>	<p>The obligations to identify, prevent, mitigate or bring to an end adverse impacts on air, as well as harmful generation and mismanagement of waste, are likely to cover the described impacts.</p>

39 Sonibare, O.O., Adeniran, J.A., and Bello, I.S., “Landfill air and odour emissions from an integrated waste management facility”, *Journal of Environmental Health Science and Engineering* 17(1):13–28, 7 March 2019: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6582209/>

40 Olaguer, E.P., “The Potential Ozone Impacts of Landfills”, *Atmosphere* 12(7):877, 7 July 2021: <https://doi.org/10.3390/atmos12070877>

41 See, for example, US Environmental Protection Agency (2016), “Wastes-Non-Hazardous Waste-Municipal Solid Waste”, *Air Emissions from MSW Combustion Facilities*: <https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/airem.html#1>; see also Marsh, K., and Bugusu, B., “Food packaging – roles, materials, and environmental issues”, *Journal of Food Science* 72(3):R39–55, 31 March 2007: <https://pubmed.ncbi.nlm.nih.gov/17995809/>



## Biodiversity

### SOCFIN

<b>Stage of the value chain:</b> upstream	<b>Sectors:</b> agriculture
<b>Types of involvement:</b> causing	<b>Countries:</b> Sierra Leone

SOCFIN is an agro-industrial group with a total capitalisation of EUR 24 million. Under Belgo-French control, SOCFIN is incorporated in Luxembourg and specialises in the production of palm oil and rubber.<sup>42</sup> Its history dates back to colonial times and the exploitation of rubber in the Belgian Congo.<sup>43</sup> SOCFIN owned 382,599 hectares of land in a dozen African and Asian countries in 2022.<sup>44</sup>

In 2011 and 2013, the Ministry of Agriculture of Sierra Leone subleased a total of 18,473 hectares of land in the Malen Chiefdom, Pujehun District, to SOCFIN Agricultural Company Sierra Leone Ltd (SAC), a subsidiary of SOCFIN.<sup>45</sup> SAC converted around two thirds of this land into a large-scale palm oil plantation.<sup>46</sup> The local communities claimed that the concession agreement had been illegitimate. In response, they founded the *Malen Affected Land Owners and Land Users Association (MALOA)*, which started filing official complaints to authorities in October 2011.<sup>47</sup> The MALOA's grievances included, among other adverse impacts, the destruction of the area's ecosystems and negative impacts on its biodiversity.<sup>48</sup>

The Malen land concession and exploitation altered the way in which the land in the chiefdom was used, transforming the traditional agricultural approach into an industrial palm oil monoculture.<sup>49</sup> This appears to have dramatically affected the biodiversity of the fauna and flora in the chiefdom, in particular leading to a sharp reduction in mammal species and medicinal plants.<sup>50</sup> There appears to be a lack of buffer zones or "greenbelts", which are important to protect watersheds as well as biodiversity, around the plantations.<sup>51</sup> A compre-

42 SOCFIN, *Investors*, no date: <https://www.socfin.com/en/investors/>

43 FIAN, *Case Report 2019: Land Grabbing for Palm Oil in Sierra Leone*, Box 2, February 2019: [https://www.fian.be/IMG/pdf/fian\\_b\\_report\\_landgrab\\_in\\_sl\\_malen\\_2019\\_full\\_weblow.pdf](https://www.fian.be/IMG/pdf/fian_b_report_landgrab_in_sl_malen_2019_full_weblow.pdf)

44 SOCFIN, *Sustainability Report 2022*, 10 July 2023: [https://www.socfin.com/wp-content/uploads/2023/07/2022-Socfin-Sustainability-report\\_compressed-Erratum-10.07.2023.pdf](https://www.socfin.com/wp-content/uploads/2023/07/2022-Socfin-Sustainability-report_compressed-Erratum-10.07.2023.pdf), pp. 16–17, 133.

45 SOCFIN, *Socfin's response to Fian's "Draft report extracts made available to Socfin before publication – Provisional title: Land Conflict in Malen – Analysis and lessons learned from a human perspective"*, 1 April 2019: [https://media.business-humanrights.org/media/documents/files/documents/2019-01-09-Socfin-response-to-Fian\\_Final.pdf](https://media.business-humanrights.org/media/documents/files/documents/2019-01-09-Socfin-response-to-Fian_Final.pdf), pp. 1–2; see also SOCFIN, *Socfin Agricultural Company (S.L.) Limited, Sub-lease (Zone B), 2013: Key clauses*, 29 July 2013: <https://resourcecontracts.org/contract/ocds-591adf-9306306492#keyclauses> and Johnbull, P.N., *A legal analysis of the lease agreements between the Government of Sierra Leone and the Tribal authorities of the Malen Chiefdom, Pujehun District, Southern Province of the Republic of Sierra Leone*, 2011: [https://www.fian.be/IMG/pdf/legal\\_analysis\\_latest\\_version-1.pdf](https://www.fian.be/IMG/pdf/legal_analysis_latest_version-1.pdf), p. 3.

46 SOCFIN, *Socfin's response to Fian*, 1 April 2019, p. 3.

47 See, for example, MALOA (2011), *Grievances of land owners in Malen Chiefdom*, Letter to Pujehun District Officer, 2 October 2011, [www.fian.be/IMG/pdf/maloe\\_grievances\\_of\\_land\\_owners\\_october\\_2011.pdf](http://www.fian.be/IMG/pdf/maloe_grievances_of_land_owners_october_2011.pdf)

48 MALOA, *Grievances of land owners in Malen Chiefdom*, 2 October 2011, p. 4; FIAN, *Case Report 2019*, February 2019, p. 9.

49 FIAN, *Case Report 2019*, February 2019, p. 9; see also FIAN/Green Scenery Sierra Leone, *The Case of Socfin in Sierra Leone*, December 2021: [http://www.fian.be/IMG/pdf/en-land\\_briefing\\_socfin.pdf](http://www.fian.be/IMG/pdf/en-land_briefing_socfin.pdf), p. 8.

50 FIAN, *Case Report 2019*, February 2019, pp. 10, 36.

51 China Dialogue, *Sierra Leone's conflict palm oil certified as sustainable*, 8 July 2022: <https://chinadialogue.net/en/food/sierra-leones-conflict-palm-oil-certified-as-sustainable/>; see also FIAN, *Case Report 2019*, February 2019, p. 10.

hensive United Nations Development Programme (UNDP) report published in March 2022 found “particularly serious” land degradation in Malen district. The one major factor identified for this degradation is the acquisition of large parts of land by SOCFIN and, inter alia, the related forest loss.<sup>52</sup> According to a 2022 report, around 100 metric tonnes of chemicals are used on the palm oil plantations per year.<sup>53</sup> MALOA and the local communities reported that the use of chemicals and fertilisers in SAC’s operations had made the swamps in the area close to the palm oil plantation unsuitable for agriculture. There are also reports of the SAC palm oil mill polluting the Malen River,<sup>54</sup> as well as of the water bodies in the Malen district generally being more polluted than in districts with less palm oil plantations.<sup>55</sup> An agreement concluded between the government and SOCFIN reportedly provides the company with unlimited access to the local freshwater resources.<sup>56</sup> A 2020 auditor report carried out for the Roundtable on Sustainable Palm Oil (RSPO) found further “critical nonconformities” with the criteria of the certification scheme, including land in Sierra Leone being cleared without its conservation or carbon storage value first being examined.<sup>57</sup>

Notably, in September 2018 the UN Special Rapporteur on hazardous substances and wastes stated that:

*[o]ne of the EIA [Environmental Impact Assessment] licences examined by the Special Rapporteur in relation to Socfin’s large-scale palm oil plantation failed to provide an accurate list of pesticides and other agro-chemicals envisaged to be in use in the plantation and remained non-exhaustive on several other key aspects that may be hazardous to human health and the environment [...].*

Despite these concerns, SOCFIN received an EIA license.<sup>58</sup>

SOCFIN projects in other countries, such as Liberia and Cambodia, have similarly been under attack by affected communities.<sup>59</sup>

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52 UNDP, *Land Degradation Assessment in Moyamba and Pujehun Districts, Sierra Leone*, 14 March 2022: [https://www.undp.org/sites/g/files/zskgke326/files/2022-10/UNDP\\_Sle\\_Validated\\_LDA\\_Technical\\_Report.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2022-10/UNDP_Sle_Validated_LDA_Technical_Report.pdf), pp. xiv, 98.

53 China Dialogue, *Sierra Leone’s conflict palm oil certified as sustainable*, 8 July 2022.

54 China Dialogue, *Sierra Leone’s conflict palm oil certified as sustainable*, 8 July 2022; FIAN, *Case Report 2019*, February 2019, p. 40.

55 UNDP, *Land Degradation Assessment*, 14 March 2022, p. 98.

56 FIAN, *Case Report 2019*, February 2019, pp. 10, 40.

57 China Dialogue, *Sierra Leone’s conflict palm oil certified as sustainable*, 8 July 2022.

58 *Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his mission to Sierra Leone*, UN DOC A/HRC/39/48/Add.1, pp 10–11. Cited in FIAN, *Case Report 2019*, February 2019, pp. 36–37.

59 See, for example, Mongabay, *Communities accuse Socfin and Earthworm Foundation of greenwash in West Africa*, 21 June 2023: <https://news.mongabay.com/2023/06/communities-accuse-socfin-and-earthworm-foundation-of-greenwash-in-west-africa/>; Oakland Institute, *Socfin/Bolloré Plantations: Rising Profits, Ongoing Repression*, 24 May 2022: <https://www.oaklandinstitute.org/socfinbolloré-plantations-rising-profits-ongoing-repression>

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>The described adverse impacts on biodiversity could be covered by the reference to the CBD, since they likely relate to “the use of biological resources”. Moreover, some of the pesticides that cause the water and soil pollution in the area may fall under the Stockholm Convention or, where imports are concerned, the Rotterdam Convention. However, the list of pesticides addressed in the Stockholm Convention is extremely limited. Pollution caused by mass use of fertilisers is not covered by any of the listed provisions from international environmental conventions. There is also, as yet, no international agreement addressing land degradation and deforestation or depletion of freshwater resources.</p>	<p>None of the additional environmental conventions added to the annex by the Council cover any of the described environmental impacts, beyond what is covered by the Commission proposal.</p>	<p>The obligations to identify, prevent, mitigate or bring to an end adverse impacts on biodiversity loss, water and soil pollution, degradation of land ecosystems, deforestation and overconsumption of water resources are likely to cover the described impacts.</p>



## Syngenta AG, BASF, Bayer AG

<b>Stage of the value chain:</b> downstream	<b>Sectors:</b> manufacture of chemicals, agriculture
<b>Types of involvement:</b> contributing	<b>Countries:</b> India, Brazil, Kenya

Investigations by civil society organisations Public Eye and Greenpeace UK have shown that more than a third of the pesticides sold by major agrochemical companies, including European corporations Syngenta, BASF and Bayer, are highly toxic to health or the environment.<sup>60</sup> Many of them were banned in the EU decades ago but continue to be exported to third countries, frequently to the Global South. Countries classified as “developing” or “emergent” accounted for almost 60% of sales of highly hazardous pesticides.<sup>61</sup> In 2018 alone, EU member states approved the export of 81,615 tonnes of pesticides containing substances banned for use in the EU.<sup>62</sup> In Germany, the volume of pesticides banned in the EU that were exported to non-EU countries almost doubled from 2021 to 2022.<sup>63</sup>

Examples of the disastrous impacts of these pesticides on both people and biodiversity abound. Around 10% of the income of agrochemical companies is generated from selling pesticides that have been shown to be highly toxic to bees and other pollinators. Syngenta accounts for almost half of these sales, but other European pesticide companies, such as BASF and Bayer, are also involved.<sup>64</sup> Pesticide use has been identified as one of the main drivers of the ongoing global mass extinction, which particularly affects insects.<sup>65</sup>

Among the most harmful pesticides are so-called neonicotinoids. The UN Food and Agriculture Organization (FAO) and the World Health Organization (WHO) have found that “a rapidly growing body of evidence strongly suggests” that the current use of these pesticides causes “large-scale adverse effects on bees and other beneficial insects”, as well as, indirectly, on birds.<sup>66</sup> Two frequently sold bee-killing pesticides are thiamethoxam, produced by Syngenta, and imidacloprid, produced by Bayer. Both are banned in the EU.

Another example is the insecticide fipronil, marketed by BASF and Bayer and exported to Brazil and Kenya. It is extremely toxic to bees, mammals, birds and several aquatic organisms.<sup>67</sup> It is banned in the EU, because, according to the European Food Safety Authority, it

60 Public Eye, *Pesticide giants make billions from bee-harming and carcinogenic chemicals*, 20 February 2020: <https://www.publiceye.ch/en/media-corner/press-releases/detail/pesticide-giants-make-billions-from-bee-harming-and-carcinogenic-chemicals>

61 Public Eye, *Pesticide giants make billions*, 20 February 2020.

62 Business & Human Rights Resource Centre, *Banned in Europe: How the EU exports pesticides too dangerous for use in Europe*, 10 September 2020: <https://www.business-humanrights.org/en/latest-news/banned-in-europe-how-the-eu-exports-pesticides-too-dangerous-for-use-in-europe/>

63 Tagesschau, *Ban on pesticide exports – with loopholes*, 29 June 2023: <https://www.tagesschau.de/investigativ/monitor/pestizide-exporte-100.html>

64 Public Eye, *Pesticide giants make billions*, 20 February 2020.

65 Public Eye, *Pesticide giants make billions*, 20 February 2020.

66 FAO / WHO, *Detoxifying agriculture and health from highly hazardous pesticides – A call for action*, 2019: <https://apps.who.int/iris/bitstream/handle/10665/330659/9789241517065-eng.pdf>, p. 9.

67 University of Hertfordshire, *PPDB (Pesticide Properties Database), Fipronil (Ref: BAS 350)*, last updated 1 September 2023: <http://sitem.herts.ac.uk/aeru/ppdb/en/Reports/316.htm>; see also Heinrich-Böll-Stiftung European Union, *Imports and exports: banned but sold anyway*, 18 October 2022: <https://eu.boell.org/en/PesticideAtlas-imports-exports> and *The Guardian*, “EU firms accused of ‘abhorrent’ export of banned pesticides to Brazil”, 25 April 2023: <https://www.theguardian.com/world/2023/apr/25/eu-firms-accused-of-abhorrent-export-of-banned-pesticides-to-brazil>



poses “a high acute risk to honey bees when used as a seed treatment for maize”.<sup>68</sup> Investigations carried out by independent organisations in Brazil suggest that massive declines in bee populations were caused by exposure to both neonicotinoids and fipronil.<sup>69</sup>

The list of other comparable, highly toxic pesticides exported outside the EU is long. One such example is the insecticide Polo, sold by Syngenta on, among others, the Indian market. It contains the active ingredient diafenthiuron, which was banned by the EU in 2002.<sup>70</sup> In addition to its potentially severe health impacts, diafenthiuron is classified as “very toxic to aquatic life with long lasting effects” by EU authorities.<sup>71</sup> The University of Hertfordshire’s Pesticide Properties DataBase (PPDB), which collects and aggregates all available data on pesticides’ toxicity from companies and regulatory authorities, states that diafenthiuron is “very persistent in aquatic systems” as well as “moderate[ly] to highly toxic for most biodiversity including aquatic life, bees, and worms”.<sup>72</sup> Its overall ecotoxicity is classified as “highly toxic”.<sup>73</sup> In 2020, a network of organisations from Asia and Europe filed a complaint to the National Contact Point (NCP) for the OECD Guidelines for Multinational Enterprises in Bern.<sup>74</sup> Along with major impacts on the environment, for example in Yavatmal, a town in India, the use of Polo comes with severe risks to those applying the chemical. In 2017, hundreds of cotton farmers were severely poisoned by pesticides, some lethally. According to official police records, many of the poisoned farmers had applied Polo.<sup>75</sup> The OECD complaint did not result in any compensation for the farmers.<sup>76</sup> A lawsuit filed in Switzerland is still pending.<sup>77</sup> Meanwhile, Syngenta continues to market Polo in the Global South, including in India.<sup>78</sup>

68 *The Guardian*, “Fipronil named as fourth insecticide to pose risk to honeybees”, 28 May 2013:

<https://www.theguardian.com/environment/2013/may/28/fipronil-fourth-insecticide-risk-honeybees>

69 Public Eye, *The bee killers*, 20 February 2020, <https://www.publiceye.ch/en/topics/pesticides/pesticide-giants-make-billions-from-bee-harming-and-carcinogenic-chemicals/the-bee-killers>

70 Pursuant to *Commission Regulation (EC) No. 2076/2002*, diafenthiuron was excluded from Annex I of the Council Directive 91/414/EEC of 15 July 1991, which lists active substances authorised for incorporation in plant protection products: EUR-Lex, *Commission Regulation (EC) No 2076/2002 of 20 November 2002*, 23 November 2002: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:319:0003:0011:EN:PDF>

71 Pesticide Action Network (PAN) India / Public Eye / Pesticide Action Network Asia Pacific (PANAP) / European Center for Constitutional and Human Rights (ECCHR), *Farmers’ poisonings with the pesticide Polo, a product of Syngenta AG and Syngenta India Ltd: Complaint over violations of the OECD Guidelines for Multinational Enterprises*, 17 September 2020: [https://www.ecchr.eu/fileadmin/Juristische\\_Dokumente/ECCHR\\_OECD\\_COMPLAINT\\_SYNGENTA.pdf](https://www.ecchr.eu/fileadmin/Juristische_Dokumente/ECCHR_OECD_COMPLAINT_SYNGENTA.pdf), p. 20.

72 See University of Hertfordshire, PPDB (Pesticide Properties Database), *Diafenthiuron (Ref: CGA 106630)*, last updated 2 September 2023: <https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/210.htm#none>

73 University of Hertfordshire, *PPDB, Diafenthiuron (Ref: CGA 106630)*, last updated 2 September 2023.

74 Public Eye, the Maharashtra Association of Pesticide Poisoned Persons (MAPPP), the Pesticide Action Network (PAN), the European Center for Constitutional and Human Rights (ECCHR) and Pesticide Action Network Asia Pacific (PANAP) submitted a specific instance to the Swiss NCP alleging that Syngenta India Ltd had not observed the Human Rights (Chapter IV) and Consumer Interests (VIII) provisions of the OECD Guidelines: OECD, *Maharashtra Association of Pesticide Poisoned Persons (MAPPP), Pesticide Action Network (PAN), Constitutional and Human Rights (ECCHR) and Pesticide Action Network Asia Pacific (PANAP) & Syngenta*, 17 September 2020: <http://mneguidelines.oecd.org/database/instances/ch0022.htm>; see also *Public Eye, Yavatmal poisonings: Syngenta’s pesticide far more heavily involved*, no date: <https://www.publiceye.ch/en/topics/pesticides/yavatmal-poisonings-syngentas-pesticide-far-more-heavily-involved>

75 PAN India / Public Eye / PANAP / ECCHR, *Farmers’ poisonings with the pesticide Polo*, 17 September 2020

[https://www.ecchr.eu/fileadmin/Juristische\\_Dokumente/ECCHR\\_OECD\\_COMPLAINT\\_SYNGENTA.pdf](https://www.ecchr.eu/fileadmin/Juristische_Dokumente/ECCHR_OECD_COMPLAINT_SYNGENTA.pdf), pp. 16–17.

76 OECDWatch, *Public Eye et al. vs. Syngenta: Syngenta pesticide poisons Indian agricultural workers*, 17 September 2020:

<https://www.oecdwatch.org/complaint/public-eye-et-al-vs-syngenta/#>

77 ECCHR, *Vergiftungswelle in Yavatmal: Betroffene gehen gegen Pestizid-Konzern Syngenta vor* [Poisoning in Yavatmal: Those affected take on pesticide conglomerate Syngenta], no date:

<https://www.ecchr.eu/en/case/vergiftungswelle-yavatmal-pestizid-konzern-syngenta/>

78 Syngenta, *Our crop protection products*, no date: <https://www.syngenta.com/en/protecting-crops/products-list>

Despite these clear and dramatic adverse impacts on the environment and human rights, the volume of pesticide exports from Europe to countries in the Southern Hemisphere is projected to grow further in the future.<sup>79</sup>

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>The described adverse impacts on biodiversity could be covered by the reference to the CBD, since they likely relate to “the use of biological resources”.</p> <p>While provisions from the Stockholm Convention and Rotterdam Convention cited in the annex prohibit the production, use and import of certain dangerous pesticides, none of the substances mentioned above are covered by these conventions.</p>	<p>None of the additional environmental conventions added to the annex by the Council cover any of the described environmental impacts beyond what is covered by the Commission proposal.</p>	<p>The obligations to identify, prevent, mitigate or bring to an end adverse impacts on biodiversity loss, water and soil pollution, as well as degradation of land and freshwater ecosystems, are likely to cover the described impacts.</p>

<sup>79</sup> Heinrich-Böll-Stiftung *European Union, Imports and exports*, 18 October 2022.



# Climate

## Holcim

<b>Stage of the value chain:</b> own business	<b>Sectors:</b> manufacture of cement
<b>Types of involvement:</b> causing	<b>Countries:</b> Switzerland, Indonesia, worldwide

Holcim is a company specialised in building materials and aggregates, with headquarters in Switzerland. It is one of the largest cement manufacturers worldwide, with net sales exceeding CHF 29 billion in 2022 alone.<sup>80</sup>

Cement is very intensive in CO<sub>2</sub> emissions. One tonne of cement equals almost 0.6 t CO<sub>2</sub>.<sup>81</sup> Importantly, it is the main ingredient of concrete, the second-most-used substance on the planet.<sup>82</sup> The concrete industry's climate impact is enormous as it makes up roughly 8% of overall global emissions.<sup>83</sup> Given its market share, Holcim is considered among the top 50 largest industrial emitters in the world.<sup>84</sup> Moreover, despite Holcim having a climate strategy in place, its CO<sub>2</sub> emissions are rising<sup>85</sup> – with devastating effects on climate.

Island nations are particularly at risk due to rising sea levels and temperature, both consequences of the climate crisis. Sea level rise is not only depriving island nations of precious land territory – it also causes water scarcity as it salinises the islands' freshwater resources.<sup>86</sup> This affects water and food security. Wave energy, too, is increased by sea level rise,<sup>87</sup> which in turn leads to eroded coastlines and heightens the islands' vulnerability to climate-change-induced erratic weather patterns such as storms. It is estimated that several Pacific Island nations will become uninhabitable, some even in the next two decades.<sup>88</sup>

One such example is Pari Island in Indonesia, which is expected to be mostly flooded by 2050 if the rise of temperatures continues at its current trajectory.<sup>89</sup> Residents have

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- 80 Holcim, *Ad hoc announcement pursuant to Art. 53 of the SIX Exchange regulation listing rules: Record Performance and Successful Transformation in 2022*, 24 February 2023: <https://www.holcim.com/media/media-releases/full-year-2022-results#:~:text=%E2%80%9CIn%202022%2C%20we%20delivered%20record,Holcim%20has%20never%20been%20stronger>
- 81 International Energy Agency (IEA), *Cement*, last updated 11 July 2023: <https://www.iea.org/energy-system/industry/cement>
- 82 Princeton Student Climate Initiative (PSCI), *Cement and Concrete: The Environmental Impact*, 3 November 2020: <https://psci.princeton.edu/tips/2020/11/3/cement-and-concrete-the-environmental-impact>
- 83 PSCI, *Cement and Concrete*, 3 November 2020.
- 84 HEKS / EPER, Holcim's Climate Strategy: *Too little – too late*, January 2023: [https://www.ecchr.eu/fileadmin/user\\_upload/HEKS-EPER\\_Climate\\_Analysis\\_DEF.pdf](https://www.ecchr.eu/fileadmin/user_upload/HEKS-EPER_Climate_Analysis_DEF.pdf), p. 10.
- 85 HEKS / EPER, *Holcim's Climate Strategy*, January 2023.
- 86 United Nations Environment Programme (UNEP), *Small island states fight back against nature loss, climate change*, 2 March 2023: <https://www.unep.org/news-and-stories/story/small-island-states-fight-back-against-nature-loss-climate-change#:~:text=Sea%20level%20rise%20is%20leading,in%20tackling%20global%20environmental%20crises>
- 87 Latitude (PLOS blog), *Coral reefs under a warming climate*, 14 July 2021: <https://latitude.plos.org/2021/07/coral-reef-islands-under-a-warming-climate/>
- 88 Time, *The Climate Crisis Is Making the Pacific Islands Uninhabitable. Who Will Help Preserve Our Nations?*, 28 September 2022: <https://time.com/6217104/climate-crisis-pacific-islands-uninhabitable/>
- 89 Call for Climate Justice, *The case*, no date: <https://callforclimatejustice.org/en/the-case/>

reported a loss of species diversity in fish,<sup>90</sup> a dwindling of fresh water resources,<sup>91</sup> and an overall increase in extreme weather events that affects marine biodiversity.<sup>92</sup> In late 2022, four residents filed a lawsuit against Holcim. Among other elements, they request that Holcim reduce its CO<sub>2</sub> emissions by 43% by 2030 and 69% by 2040, redress proportionally its climate-induced damages and contribute proportionally to climate change adaptation measures on Pari island.<sup>93</sup>

Holcim has publicly acknowledged its role in addressing the climate crisis<sup>94</sup> and has committed itself to the Science Based Targets initiative (SBTi), but the plaintiffs deem its climate strategy insufficient. For one thing, Holcim has so far only set relative emission reduction targets for 2030, which will have no bearing on the absolute emissions per tonne of cement<sup>95</sup> and is also incompatible with the 1.5°C limit according to the Swiss NGO HEKS.<sup>96</sup> Additionally, the strategy follows a corporate trend to rely heavily on carbon capture, utilisation and storage (CCUS).<sup>97</sup> CCUS describes a set of contested technologies to remove carbon dioxide from the atmosphere and store it deep underground in geological formations,<sup>98</sup> which could pose dangers to underground reservoirs and potentially cause seismic activity.<sup>99</sup> According to the International Energy Agency (IEA), the current growth trajectory of CCUS would not lead to the emissions reduction required in the Net Zero Scenario, either.<sup>100</sup>

90 Call for Climate Justice, *Plaintiffs: Bobby*, no date: <https://callforclimatejustice.org/en/plaintiffs/bobby/>

91 Call for Climate Justice, *Plaintiffs: Bobby*, no date.

92 Call for Climate Justice, *Plaintiffs: Arif*, no date: <https://callforclimatejustice.org/en/plaintiffs/arif/>

93 Climate Change Litigation Databases, *Asmania et al. vs Holcim*, 2022: <https://climatecasechart.com/non-us-case/four-islanders-of-pari-v-holcim/>

94 Holcim, *Media release: Holcim Signs Net Zero Pledge with Science-Based Targets*, 21 September 2020: <https://www.holcim.com/media/media-releases/lafargeholcim-net-zero-pledge-science-based-targets>

95 HEKS / EPER, *Holcim's Climate Strategy*, January 2023, p. 18.

96 HEKS / EPER, *Holcim's Climate Strategy*, January 2023, p. 21.

97 HEKS / EPER, *Holcim's Climate Strategy*, January 2023, p.22.

98 IEA, *Carbon Capture, Utilisation and Storage*, no date: <https://www.iea.org/energy-system/carbon-capture-utilisation-and-storage>

99 Horizon (EU Research and Innovation), *Storing CO<sub>2</sub> underground can curb carbon emissions, but is it safe?*, 27 November 2018: <https://ec.europa.eu/research-and-innovation/en/horizon-magazine/storing-co2-underground-can-curb-carbon-emissions-it-safe#:~:text=One%20major%20concern%20with%20CCS,underground%2C%20known%20as%20induced%20seismicity>

100 IEA, *Carbon Capture, Utilisation and Storage*, no date.

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>None of the environmental conventions listed in the annex of the CSDDD cover adverse impacts on climate. It is unclear to what extent the climate plan that certain companies need to adopt under Article 15 of the CSDDD will serve to mitigate some of the adverse impacts of cement production on climate change without an explicit obligation to implement the plan. Similarly, the provision on companies' emission reduction objectives is very ambiguous, with respect to both the trigger for this obligation and whether absolute or relative emission reduction objectives are required.</p>	<p>None of the further provisions from international environmental conventions added to the annex of the CSDDD by the Council appear to address adverse impacts on climate.</p>	<p>The obligations to identify, prevent, mitigate or bring to an end adverse impacts on climate and marine ecosystems, as well as the obligation to achieve reductions in greenhouse gas emissions interpreted in line with the Paris Agreement, the European Climate Law and the Global Methane Pledge, could apply to the case at hand.</p> <p>There is also an explicit obligation on all companies within the scope of the directive to implement their climate plans – which have to include mandatory emission reduction objectives – as per Article 15 of the Parliament's proposal.</p>

## PGE GiEK S.A.

<b>Stage of the value chain:</b> own operations	<b>Sectors:</b> mining of coal, electricity
<b>Types of involvement:</b> causing	<b>Countries:</b> Poland, worldwide

Polska Grupa Energetyczna Górnictwo i Energetyka Konwencjonalna S.A. (PGE GiEK S.A.) is one of the companies belonging to the PGE Capital Group – the largest enterprise in the power sector in Poland, which falls fully within the CSDDD company scope.<sup>101</sup>

PGE GiEK is a national and regional leader in the lignite mining industry (its share in the domestic lignite mining market is approximately 91%). It is also the largest producer of electricity in Poland, providing over 36% of the energy supply to the Polish power system: almost 57,000 GWh of electricity per year. PGE's mining and conventional energy facilities include the Bełchatów power plant,<sup>102</sup> which is the root cause of PGE's adverse impact on climate.

The Bełchatów power plant is the single largest emitter of carbon dioxide in the EU.<sup>103</sup> As per 2020 reports, the plant burns a tonne of coal every second<sup>104</sup> and has roughly the same annual carbon emissions as New Zealand.<sup>105</sup> In the atmosphere, the carbon dioxide released by the defendant's power plants leads to a higher overall density of greenhouse gases. The increase in density traps the sunlight in the atmosphere and consequently leads to an increase in global temperature.

Climate change already has a myriad of effects in Poland. More extreme weather events, droughts, heavy rains and flooding, tornadoes and storms are significant impacts whose increased frequency is attributable to the climate crisis.<sup>106</sup> Higher temperatures could in turn boost summer electricity consumption, again increasing the CO<sub>2</sub> emissions while also reducing the efficiency of both thermal plants and transmission lines.<sup>107</sup>

In September 2019, ClientEarth brought a civil action against PGE GiEK S.A. In the civil action, ClientEarth requested the Regional Court of the city of Łódź to order PGE GiEK S.A. to cease the use of lignite as a fuel for the production of energy at the Bełchatów power plant. According to ClientEarth's petition, of the 12 active units at the Bełchatów power plant, 11 should be closed

101 This paragraph is based on information from PGE GiEK S.A.'s website: see *Kim jesteśmy* [Who we are], no date: <https://pgegiiek.pl/O-firmie/Kim-jestesmy>, <https://pgegiiek.pl/O-firmie/plan-podzialu-pge-energia-ciepla-s.a> and *Plan podziału PGE GiEK* [PGE GiEK division plan], no date: <https://pgegiiek.pl/O-firmie/plan-podzialu-pge-giek2>

102 PGE GiEK S.A., *Kim jesteśmy* [Who we are], no date.

103 Climate Change Litigation Databases, *ClientEarth v. Polska Grupa Energetyczna*, 2019: <http://climatecasechart.com/non-us-case/clientearth-v-polska-grupa-energetyczna/>

104 Client Earth, *Breaking: EU's biggest coal plant must negotiate closure with environmental lawyers, court decides*, 20 September 2020: <https://www.clientearth.org/latest/press-office/press/breaking-eu-s-biggest-coal-plant-must-negotiate-closure-with-environmental-lawyers-court-decides/>

105 United Nations Framework Convention on Climate Change (UNFCCC), *Summary of GHG Emissions for New Zealand*, 2020: [https://di.unfccc.int/ghg\\_profiles/annexOne/NZL/NZL\\_ghg\\_profile.pdf](https://di.unfccc.int/ghg_profiles/annexOne/NZL/NZL_ghg_profile.pdf)

106 Climate-ADAPT, *Information on national adaptation actions reported under the Governance Regulation*, 15 March 2023: <https://climate-adapt.eea.europa.eu/en/countries-regions/countries/poland>

107 "Poland's average temperature increased by just over 2°C from 1951–1960 to 2011–2020. In the last two decades, the country's average temperature increase (0.0586°C per year) has surpassed the world average (0.0313°C per year). [...] Naturally, higher average temperatures have reduced the number of heating degree days (HDDs) and augmented cooling degree days (CDDs). Poland's average temperature is projected to continue climbing throughout this century": IEA, *Poland Climate Resilience Policy Indicator*, 18 January 2022: <https://www.iea.org/articles/poland-climate-resilience-policy-indicator>

by 2030, with one being closed no later than 2035.<sup>108</sup> On 22 September 2020, the judge in the case ruled that PGE GiEK S.A. must negotiate with ClientEarth to attempt to reach a settlement within three months to swiftly reduce Bełchatów's climate impact.<sup>109</sup> However, so far, the negotiations between the parties, conducted as part of the court proceedings, have not reached any consensus.<sup>110</sup>

According to information from PGE GiEK S.A.'s own website, the company has taken only rudimentary measures to address its climate impact, for example equipping five national parks with renewable energy sources and organising educational trips for children and teenagers;<sup>111</sup> re-cultivating the post-mining sites;<sup>112</sup> and undertaking a reforestation programme.<sup>113</sup> PGE's reforestation action led to the plantation of no more than 900,000 trees over the span of two decades<sup>114</sup> – not enough to make up for even a fraction of Bełchatów's emissions. A single mature tree can absorb only approximately 50 pounds of carbon dioxide per year.<sup>115</sup> Even with generous estimates, the trees planted by PGE only reduce the carbon emissions of the Bełchatów plant by less than 0.1 % per year.

### Which adverse environmental impacts would the CSDDD cover?

Commission	Council	Parliament
None of the environmental conventions listed in the annex of the CSDDD cover adverse impacts on climate. It is unclear to what extent the climate plan that certain companies need to adopt under Article 15 of the CSDDD will serve to mitigate some of the adverse impacts of the extraction and combustion of coal on climate change without an explicit obligation to implement the plan. Similarly, the provision on companies' emission reduction objectives is very ambiguous, with respect to both the trigger for this obligation and whether absolute or relative emission reduction objectives are required.	None of the further provisions from international environmental conventions added to the annex of the CSDDD by the Council appear to address adverse impacts on climate.	The obligations to identify, prevent, mitigate or bring to an end adverse impacts on climate, as well as the obligation to achieve reductions in greenhouse gas emissions interpreted in line with the Paris Agreement, the European Climate Law and the Global Methane Pledge, could apply to the case at hand. There is also an explicit obligation on all companies within the scope of the directive to implement their climate plans – which have to include mandatory emission reduction objectives – as per Article 15 of the Parliament's proposal.

108 Client Earth, *Breaking*, 20 September 2020.

109 Client Earth, *Breaking*, 20 September 2020.

110 Climate Change Litigation Databases, ClientEarth v. Polska Grupa Energetyczna, 2019.

111 PGE GiEK S.A., *Parki narodowe* [National parks], no date: <https://www.gkpge.pl/grupa-pge/zrownowazony-rozwoj/srodowisko/parki-narodowe>

112 PGE GiEK S.A., *Rekultywacja terenów* [Land reclamation], no date: <https://www.gkpge.pl/grupa-pge/zrownowazony-rozwoj/srodowisko/rekultywacja-terenow>

113 PGE GiEK S.A., *Lasy pełne energii* [Forests full of energy], no date: <https://www.gkpge.pl/grupa-pge/zrownowazony-rozwoj/srodowisko/lasy-pelne-energii>

114 PGE GiEK S.A., *Lasy pełne energii* [Forests full of energy], no date.

115 MIT Climate (Massachusetts Institute of Technology), *How many new trees would we need to offset our carbon emissions?*, 16 June 2022: <https://climate.mit.edu/ask-mit/how-many-new-trees-would-we-need-to-offset-our-carbon-emissions>





## Soil

### Perenco

<b>Stage of the value chain:</b> upstream	<b>Sectors:</b> extraction of crude petroleum and natural gas
<b>Types of involvement:</b> causing	<b>Countries:</b> Democratic Republic of the Congo (DRC), Gabon, Guatemala, Peru

Perenco is an Anglo-French multinational oil and gas company operating in 14 countries. The Perenco group is involved in oil and gas extraction activities both on- and offshore and specialises in already-operating end-of-life wells, which it takes over from other companies.<sup>116</sup>

Perenco's involvement in alleged cases of environmental pollution, as well as allegations of tax avoidance and close ties to decision-makers, has been the subject of numerous reports by civil society organisations, journalists and government agencies.<sup>117</sup> The company is frequently criticised for its lack of transparency, which also applies to the environmental impact of its activities.<sup>118</sup>

Perenco is the only operator of oil wells in the Democratic Republic of the Congo (DRC),<sup>119</sup> where it operates primarily in the Muanda coastal region, which is rich in biodiversity and includes the Mangrove National Park (Parc national des Mangroves).<sup>120</sup> The soil in this region is known to be highly fertile and suitable for different types of agricultural production.<sup>121</sup> The exact number of oil wells operated by Perenco in the DRC is unknown, but its onshore wells alone reportedly span an area of more than 400 square kilometres. Some of the oil wells are located immediately adjacent to the houses of local residents.<sup>122</sup>

For years, residents, NGOs and even the DRC Senate have accused the company of polluting the soil, water and air in the region through spills of crude oil, gas flaring and landfill of oil

116 Perenco, *Our group*, no date: <https://www.perenco.com/our-group>

117 Investigate Europe, *Perenco Files: the toxic world of a little-known European oil giant*, 8 November 2022: <https://www.investigate-europe.eu/en/posts/perenco-files>

118 Disclose, *Inside the Dirty Secrets of the Oil Company Perenco*, 9 November 2022: <https://disclose.ngo/en/article/inside-the-dirty-secrets-of-the-oil-company-perenco>; see also Sherpa, *Perenco Case in Democratic Republic of Congo*, no date: <https://www.asso-sherpa.org/perenco-case-drc>

119 Les Amis de la Terre France, *French oil company Perenco sued over environmental damage in the Democratic Republic of Congo*, 9 November 2022: <https://www.amisdela terre.org/communique-presse/french-oil-company-perenco-sued-over-environmental-damage-in-the-democratic-republic-of-congo/>

120 Ramsar Sites Information Service (RSIS), *Parc national des Mangroves* [Mangroves National Park], 18 January 1996: <https://rsis.ramsar.org/ris/788>

121 CCFD-Terre Solidaire, *Régulation des Multinationales: Pétrole à Muanda: La justice au rabais* [Regulation of Multinationals: Oil in Muanda: Justice on the cheap] November 2013: [https://www.cidse.org/wp-content/uploads/2013/12/CCFD\\_petrole\\_muanda\\_201113.pdf](https://www.cidse.org/wp-content/uploads/2013/12/CCFD_petrole_muanda_201113.pdf), pp. 35–36.

122 Les Amis de la Terre France, *French oil company Perenco sued*, 9 November 2022.



waste.<sup>123</sup> Studies by the University of Lubumbashi have confirmed these adverse impacts.<sup>124</sup> Residents and former company employees claim that the oil leaks are due to the often poor conditions of the company's facilities, which are partially due to its business strategy of taking over aged infrastructure from other companies.<sup>125</sup> Perenco acknowledges that there have been leaks in the past but attributes these partially to acts of "sabotage".<sup>126</sup>

Perenco has also been accused, including by the DRC Senate, of burying contaminated drilling muds in the ground without further treatment.<sup>127</sup> The company states that it treats drilling muds "according to international standards" and that they "pose no risk to the environment".<sup>128</sup>

Furthermore, the flaring of methane gas performed by the company is a major source of greenhouse gas emissions – it is estimated that in 2021 it led to emissions equalling those of 21 million Congolese.<sup>129</sup> Although the practice was officially banned in the country in 2015, the company alleges it is allowed to continue the flaring due to contracts predating the ban.<sup>130</sup> There is also an exceptionally high incidence of respiratory and other diseases in the Muanda region, which are attributed to the pollution from flaring.<sup>131</sup> A request from local officials to make the flares more secure reportedly received no answer.<sup>132</sup>

The reports from DRC align with similar incidents in other areas where Perenco operates, such as in Gabon, where 17 oil leaks were reported in four years.<sup>133</sup> The latest was an oil leakage in February 2023 of "tens of thousands of litres of oil" (according to a former company employee), which reportedly polluted a local river as well as local marshlands where residents would go to draw their water.<sup>134</sup> There are similar reports of severe adverse environmental consequences regarding Perenco's activities in Guatemala<sup>135</sup> and Peru.<sup>136</sup>

123 Les Amis de la Terre France, *French oil company Perenco sued*, 9 November 2022; see also La commission d'enquête du Sénat sur la pollution causée par l'exploitation pétrolière dans le Bas-Congo, *Rapport Session de Septembre 2013* [Session Report of September 2013], October 2013: <https://www.amisdelaterre.org/wp-content/uploads/2022/08/201310-rapport-senat-rdc-commission-enquete-senatoriale-pollution-perenco.pdf>

124 Disclose, *Toxic Fumes and Leaks: Perenco's Polluting Oil Business in Democratic Republic of Congo*, 9 November 2022: <https://disclose.ngo/en/article/toxic-fumes-and-leaks-perencos-polluting-oil-business-in-democratic-republic-of-congo>; CCFD-Terre Solidaire, *Régulation des Multinationales: Pétrole à muanda* [Regulation of Multinationals: Oil in Muanda], November 2013, pp. 48–49.

125 Disclose, *Toxic Fumes and Leaks*, 9 November 2022; see also CCFD-Terre Solidaire, *Régulation des Multinationales: Pétrole à muanda* [Regulation of Multinationals: Oil in Muanda], November 2013, p. 37.

126 CCFD-Terre Solidaire, *Régulation des Multinationales: Pétrole à muanda* [Regulation of Multinationals: Oil in Muanda], November 2013, p. 37.

127 Disclose, *Toxic Fumes and Leaks*, 9 November 2022.

128 Disclose, *Toxic Fumes and Leaks*, 9 November 2022.

129 Disclose, *Toxic Fumes and Leaks*, 9 November 2022.

130 Disclose, *Toxic Fumes and Leaks*, 9 November 2022.

131 Disclose, *Toxic Fumes and Leaks*, 9 November 2022.

132 See Disclose, *Toxic Fumes and Leaks*, 9 November 2022, and *Ressources Naturelles et Développement* (RENAD), *Cris d'alarme des Communautés Locales: Impacts de Perenco Rep sur le cadre de vie des communautés de Muanda en R.D. Congo* [Cries of alarm from local communities: Impacts of Perenco Rep on the living environment of the communities of Muanda in DR Congo], April 2022: [https://congominespdfstorage.blob.core.windows.net/congominespdfstorage/CRIS%20D%E2%80%99ALARME%20DES%20COMMUNAUTES%20LOCALES%20\(2\).pdf](https://congominespdfstorage.blob.core.windows.net/congominespdfstorage/CRIS%20D%E2%80%99ALARME%20DES%20COMMUNAUTES%20LOCALES%20(2).pdf), p. 47. In a response to this briefing, a Perenco spokesperson stated that this was "incorrect".

133 Disclose, *Revealed: Perenco's Damaging Oil Spills in Gabon*, 22 June 2023: <https://disclose.ngo/en/article/revealed-perencos-damaging-oil-spills-in-gabon>

134 Disclose, *Revealed: Perenco's Damaging Oil Spills in Gabon*, 22 June 2023.

135 Reporterre, *Le pétrolier franco-britannique Perenco dévaste le Guatemala* [The Franco-British oil company Perenco is devastating Guatemala], 27 April 2023: <https://reporterre.net/Le-petrolier-franco-britannique-Perenco-devaste-le-Guatemala>

136 CCFD-Terre Solidaire, *Rapport: Le Baril ou la Vie?* [The barrel or life?], 7 September 2015: <https://ccfd-terresolidaire.org/rapport-le-baril-ou-la-vie/>

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>None of the environmental conventions listed in the annex of the CSDDD Commission proposal refer to the pollution of soil or water from oil spills. While the Stockholm Convention addresses the storage and disposal of certain types of waste, these do not include drilling muds from the extraction of crude oil. The Basel Convention includes these types of waste but only establishes obligations relating to their export or import from or to other countries.</p> <p>It is unclear to what extent the climate plan that certain companies need to adopt under Article 15 of the CSDDD will serve to mitigate some of the adverse impacts of methane gas flaring on climate change, given that there is no explicit obligation to implement the plan. Similarly, the provision on companies' emission reduction objectives is very ambiguous, with respect to both the trigger for this obligation and whether absolute or relative emission reduction objectives are required.</p>	<p>None of the environmental conventions added to the annex by the Council refer to the pollution of soil or water from oil spills or contaminated oil wells, nor to the climate impacts of gas flaring.</p> <p>The Parc national des Mangroves is listed as a protected site under the Ramsar Convention but it remains unclear from the Council text whether the respective prohibition for companies goes beyond compliance with any national laws implementing the convention.</p>	<p>The obligations to identify, prevent, mitigate or bring to an end adverse impacts on air, water and soil pollution, climate change, degradation of land, marine and freshwater ecosystems as well as harmful generation and mismanagement of waste are likely to cover the described impacts. There also is an explicit obligation on all companies within the scope of the directive to implement their climate plans – including mandatory emission reduction objectives – as per Article 15 of the Parliament's proposal.</p>

## TotalEnergies SE, Wintershall Dea, BNP Paribas, ING, Deutsche Bank

<b>Stage of the value chain:</b> upstream	<b>Sectors:</b> extractive industries (shale oil and gas)
<b>Types of involvement:</b> causing/contributing	<b>Countries:</b> Argentina

While the extraction of shale gas and oil (“fracking”) has been banned in many European countries due to its environmental risks,<sup>137</sup> leading EU companies are heavily involved in fracking activities elsewhere. One such example is the Vaca Muerta region in Argentina.

Vaca Muerta is a geological formation hosting one of the world’s largest shale oil and shale gas fields.<sup>138</sup> Many large European companies run fracking operations in the region. These include French fossil fuel giant TotalEnergies SE<sup>139</sup> and German gas and oil producer Wintershall Dea,<sup>140</sup> a subsidiary of BASF SE.<sup>141</sup> In addition, a number of major EU-based financial institutions, such as BNP Paribas,<sup>142</sup> ING and Deutsche Bank,<sup>143</sup> have supported the activities at Vaca Muerta by investing in the fossil fuel companies involved in the region.

A number of scientific studies indicate that the fracking activity at Vaca Muerta has led to a series of earthquakes in the region, which did not previously have a record of seismic activity. The earthquakes appear to be connected to the high-pressure injection of enormous quantities of water mixed with sand and chemicals (“hydraulic fracturing”).<sup>144</sup> This seems to have also deformed the surface of the ground at the site.<sup>145</sup> Community organisations claim that the government remains largely inactive in taking countermeasures or even

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- 137 Investigate Europe, *Europe’s energy crisis is reviving the fracking industry*, 1 September 2022: <https://www.investigate-europe.eu/en/2022/europes-energy-crisis-is-reviving-the-fracking-industry/>
- 138 Taller Ecologista / Observatorio Petrolero Sur in EJES (Enlace por la Justicia Energética y Socioambiental), *Vaca Muerta Megaproject A fracking carbon bomb in Patagonia*, December 2017: <https://www.boell.de/sites/default/files/megaproject.pdf>
- 139 TotalEnergies SE, *Argentina: Total sanctions the development of Vaca Muerta shale resources and increases its participation*, 27 April 2017: <https://totalenergies.com/media/news/press-releases/argentina-total-sanctions-development-vaca-muerta-shale-resources-and-increases-its-participation>
- 140 Wintershall Dea, *Focus on Natural Gas in Argentina – Wintershall Dea Sells its Shares in Shale Oil Blocks*, 17 January 2022: <https://wintershalldea.com/en/newsroom/focus-natural-gas-argentina-wintershall-dea-sells-its-shares-shale-oil-blocks>; see also MercoPress, *Germany’s Wintershall joins Patagonia’s Vaca Muerta shale gas and oil rush*, 8 January 2014: <https://en.mercopress.com/2014/01/08/germany-s-wintershall-joins-patagonia-s-vaca-muerta-shale-gas-and-oil-rush>
- 141 BASF, *Non-Integral Shareholding in Wintershall Dea*, last updated 26 May 2023: [https://www.basf.com/global/en/investors/calendar-and-publications/factbook/segments/wintershall-dea.html#accordion\\_v2-7b54586986-item-b3f92ec252](https://www.basf.com/global/en/investors/calendar-and-publications/factbook/segments/wintershall-dea.html#accordion_v2-7b54586986-item-b3f92ec252)
- 142 Taz, *Toxic investments are heating up*, 10 December 2020: <https://taz.de/Jahrestag-des-Klimaabkommens/!5730472/>
- 143 Banktrack, *Vaca Muerta Shale Basin Argentina*, 17 October 2022: [https://www.banktrack.org/project/vaca\\_muerta/](https://www.banktrack.org/project/vaca_muerta/)
- 144 Gas Outlook, *Fracking in Argentina’s Vaca Muerta leads to earthquakes*, 9 December 2022: <https://gasoutlook.com/analysis/fracking-in-argentinass-vaca-muerta-leads-to-earthquakes/>; Tamburini-Beliveau, G., Grosso-Heredia, J.A., Béjar-Pizarro, M. et al., “Assessment of ground deformation and seismicity in two areas of intense hydrocarbon production in the Argentinian Patagonia”, *Scientific Reports* 12, 19198, 10 November 2022: <https://doi.org/10.1038/s41598-022-23160-6>
- 145 Gas Outlook, *Fracking in Argentina’s Vaca Muerta*, 9 December 2022.

creating transparency about the earthquakes in the region.<sup>146</sup> Seismographic data collected by the companies themselves are being kept secret.<sup>147</sup> The relationship between fracking and increased seismic activity is no new discovery – it has been the subject of a range of scientific studies.<sup>148</sup>

In addition to their dramatic effects on the local population, earthquakes also produce a number of secondary environmental effects, such as landslides and liquefaction.<sup>149</sup> Furthermore, shale gas extraction has been shown to produce other adverse environmental impacts: some studies have found that because of the release of methane during the shale gas extraction, the greenhouse gas footprint of fracking is larger than that of conventional gas, oil and even coal.<sup>150</sup> There is also evidence that it contaminates surface water and groundwater and negatively affects air quality.<sup>151</sup>

146 Observatorio Petrolero Sur (OPSur), *Sixty earthquakes in ten days, the reality of an Argentine fracking town*, 11 August 2021: <https://opsur.org.ar/2021/08/11/sixty-earthquakes-in-ten-days-the-reality-of-an-argentine-fracking-town/>; Gas Outlook, *Fracking in Argentina's Vaca Muerta*, 9 December 2022.

147 Gas Outlook, *Fracking in Argentina's Vaca Muerta*, 9 December 2022.

148 Weingarten, M., Ge, S., Godt, J., Bekins, B., and Rubinstein, J., "Induced Seismicity. High-rate injection is associated with the increase in U.S. mid-continent seismicity", *Science* 348, 1336–1340, 19 June 2015: [https://www.researchgate.net/publication/278788847\\_INDUCED\\_SEISMICITY\\_High-rate\\_injection\\_is\\_associated\\_with\\_the\\_increase\\_in\\_US\\_mid-continent\\_seismicity](https://www.researchgate.net/publication/278788847_INDUCED_SEISMICITY_High-rate_injection_is_associated_with_the_increase_in_US_mid-continent_seismicity); Keranen, K., and Weingarten, M., "Induced Seismicity", *Annual Review of Earth and Planetary Sciences* 46:149–174, May 2018: [https://www.researchgate.net/profile/Matthew-Weingarten/publication/323712849\\_Induced\\_Seismicity/links/5b0f57f8aca2725783f41663/Induced-Seismicity.pdf](https://www.researchgate.net/profile/Matthew-Weingarten/publication/323712849_Induced_Seismicity/links/5b0f57f8aca2725783f41663/Induced-Seismicity.pdf)

149 Mavroulis, S., Mavrouli, M., Lekkas, E., and Tsakris, A., "Impact of earthquakes and their secondary environmental effects on public health", 9th EGU General Assembly, EGU2017, proceedings from the conference held 23–28 April 2017 in Vienna, Austria, April 2017: <https://ui.adsabs.harvard.edu/abs/2017EGUGA..19.3884M/abstract>

150 Howarth, R.W., "Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: Implications for policy", *Energy and Emission Control Technologies* 3, 8 October 2015: [https://www.research.howarth-lab.org/publications/f\\_EECT-61539-perspectives-on-air-emissions-of-methane-and-climatic-warmin\\_100815\\_27470.pdf](https://www.research.howarth-lab.org/publications/f_EECT-61539-perspectives-on-air-emissions-of-methane-and-climatic-warmin_100815_27470.pdf)

151 Howarth, R.W., "Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development", 8 October 2015; Howarth, R., Ingraffea, A., and Engelder, T., "Should fracking stop?", *Nature* 477, 271–275, 14 September 2011: <https://www.nature.com/articles/477271a>; United States Environmental Protection Agency (EPA), *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States*, Executive Summary (EPA/600/R-16/236ES), December 2016: [https://ordspub.epa.gov/ords/eims/eimscomm.getfile?p\\_download\\_id=530285](https://ordspub.epa.gov/ords/eims/eimscomm.getfile?p_download_id=530285)

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>None of the environmental conventions listed in the annex of the CSDDD refer to seismological effects or their secondary environmental impacts, nor does an international environmental agreement exist that addresses such impacts. None of the further adverse impacts of fracking in terms of soil, water and air pollution appear to be covered by the provisions from international environmental conventions in the annex. It is unclear to what extent the climate plan that certain companies need to adopt under Article 15 of the CSDDD will serve to mitigate some of the adverse impacts of fracking on climate change.</p>	<p>None of the further provisions from international environmental conventions added to the annex of the CSDDD by the Council appear to address the seismological or further environmental impacts described.</p>	<p>While seismological effects of economic activity appear not to be covered directly, some of their secondary impacts may be, wherever they adversely impact, for example, local ecosystems. The obligations relating to adverse impacts on climate change, air, water and soil pollution as well as harmful generation of waste are likely to cover the further environmental impacts described.</p>



## Andritz AG

<b>Stage of the value chain:</b> downstream	<b>Sectors:</b> construction, energy (hydropower)
<b>Types of involvement:</b> contribution	<b>Countries:</b> Lao People's Democratic Republic (PDR)

Andritz AG (or ANDRITZ Group) is a global technology group that supplies custom-built plants, systems, equipment and services for the hydropower, pulp and paper, solid-liquid separation (water filtration), steel, and feed and biomass industries.<sup>152</sup> Andritz Hydro, one of its major business lines, is an important global supplier of electromechanical systems and services for hydropower plants.<sup>153</sup> Andritz Hydro is headquartered in Vienna, Austria. In 2012, Andritz Hydro won a bid in an international tender to supply electromechanical equipment for the Xayaburi hydropower plant in Lao PDR to build a dam on the Mekong River.<sup>154</sup> It then concluded a USD 300 million contract to supply custom-built parts. The Xayaburi Dam was completed in 2019.<sup>155</sup> It is the largest of many dams on the Mekong River and its tributaries.<sup>156</sup>

In 2019, the water levels on some stretches of the river reached their lowest level in 57 years, which was attributed in part to the operation of the Xayaburi Dam.<sup>157</sup> According to reports by fishers, the number of fish in the river has notably and dramatically decreased since the Xayaburi Dam was built and many fish species have disappeared entirely. This decrease in biodiversity has been confirmed through analyses conducted by an intergovernmental agency.<sup>158</sup> Moreover, the dam has contributed to the trapping of nutrient-rich sediment. This, in turn, has resulted in the slow “starving” of the Mekong River ecosystem.<sup>159</sup>

These consequences of the dam had been predicted by environmental activists, which formally raised them to Andritz in 2014 through the NCP procedure of the OECD Guidelines for Multinational Enterprises.<sup>160</sup> Further expected environmental damage includes the extincti-

152 Andritz Group, *About us*, no date: <http://www.andritz.com/group/gr-about-us.htm>

153 Andritz Group, *Andritz Hydro*, no date: <http://www.andritz.com/hydro.htm>

154 Andritz Group, *Andritz to Supply Electromechanical Equipment for Xayaburi Hydropower Plant*, 24 October 2012: <http://www.andritz.com/group/gr-news/gr-news-detail.htm?id=23737> – the Xayaburi Power Company Ltd, a subsidiary of Thai construction company Ch. Karnchang Public Company Ltd, has ordered turbines, generators and other relevant equipment from Andritz, with a total value of between EUR 250 and 300 million; see also Eco-Business, *Another Major Xayaburi Pact*, 31 October 2012: <https://www.eco-business.com/news/another-major-xayaburi-pact/>

155 Mongabay, *For Thai fishers facing dwindling catches, a Lao dam looms large*, 10 June 2022:

<https://news.mongabay.com/2022/06/for-thai-fishers-facing-dwindling-catches-a-lao-dam-looms-large/>

156 Reuters, *Mekong*, no date: <https://www.reuters.com/graphics/GLOBAL-ENVIRONMENT/MEKONG/egpbyyadnvq/index.html>

157 *Bangkok Post*, “Dam disaster on the way”, 20 July 2019: <https://www.bangkokpost.com/opinion/opinion/1715595/dam-disaster-on-the-way>

158 Mongabay, *For Thai fishers facing dwindling catches*, 10 June 2022.

159 Reuters, *Mekong*, no date.

160 OECD Watch, *Finance & Trade Watch Austria et al vs Andritz AG: Andritz' contribution to severe impacts of dam in Laos*, 9 April 2014: <https://www.oecdwatch.org/complaint/finance-trade-watch-austria-et-al-vs-andritz-ag/#>

on of fish species found only in the Mekong River,<sup>161</sup> increased flooding, erosion, degradation of wetlands, and algal blooms upstream (due to increased nutrient content in the reservoir).<sup>162</sup> In the process following the complaint, Andritz entered into a dialogue with the complainants and agreed to revise its due diligence policies. It is unclear to what extent Andritz has used its leverage to bring to an end or mitigate adverse environmental impacts caused by the dam. In 2018, Andritz's due diligence policy revision had not yet been finalised.<sup>163</sup>

### *Which adverse environmental impacts could the CSDDD cover?*

Commission	Council	Parliament
None of the environmental conventions listed in the annex of the CSDDD Commission proposal refer to the protection of aquatic life or the conservation of valuable aquatic ecosystems or wetlands. Reference to the CBD is limited to adverse impacts related to “the use of biological resources”, which is unlikely to apply to the adverse impacts on biodiversity described in this case.	Protection of aquatic environments addressed by the environmental conventions in the annex of the Council general approach is limited to very specific cases of pollution from ships and in the marine environment, which do not apply to this case. None of the concerned parts of the Mekong delta are protected under the Ramsar Convention or World Heritage Convention. Reference to the CBD and the obligation to avoid or minimise adverse impacts on biodiversity may cover some of the adverse impacts described.	The obligations to identify, prevent, mitigate or bring to an end adverse impacts on biodiversity loss as well as degradation of land and freshwater ecosystems are likely to cover the described impacts.

161 Various, *Specific Instance Complaint Under the OECD Guidelines for Multinational Enterprises Regarding the Contributions of Andritz AG to Human Rights Abuse and Environmental Damage in Connection With the Xayaburi Hydropower Project in Lao PDR*, April 2014: <https://earthrights.org/wp-content/uploads/andritz-oecd-complaint-re-xayaburi-4.9.2014.pdf>, pp. 4, 13–17.

162 Thorne, C., Annandale, G., Jensen, K., Jensen, E., Green, A., and Koponen, J., *Review of Sediment Transport, Morphology, and Nutrient Balance. Report to the Mekong River Commission Secretariat prepared as part of the Xayaburi MRCS Prior Consultation Project Review Report*, Nottingham University, UK, February 2011: <http://www.mrcmekong.org/assets/Consultations/2010-Xayaburi/Annex3-Sediment-Expert-Group-Report.pdf>, pp. 11–14; see also International Centre For Environmental Management (ICEM), *Strategic Environmental Assessment of Hydropower on the Mekong Mainstream*, October 2010: <https://www.mrcmekong.org/assets/Publications/Consultations/SEA-Hydropower/SEA-Main-Final-Report.pdf>

163 OECD Watch, *Finance & Trade Watch Austria et al vs Andritz AG*, 9 April 2014.



## (German) supermarket chains

<b>Stage of the value chain:</b> upstream	<b>Sectors:</b> wholesale of food
<b>Types of involvement:</b> contribution/direct link	<b>Countries:</b> Spain

Germany is the top destination for fruit and vegetable exports from the Region of Murcia in Spain, importing 25% of its exported vegetables. In 2019, 662,856 tonnes of the vegetables produced there went to Germany. This was followed by the UK with 21% (493,276 tonnes) and France with 16% (419,389 tonnes) of the total.<sup>164</sup> At the end of the supply chain of these large production volumes are European, and especially German, supermarkets.<sup>165</sup>

While German supermarkets profit from low purchasing prices, human rights and the environment suffer in Spain.<sup>166</sup> In Murcia, intensive farming has a particularly damaging effect on the region's unique ecosystems: the country's largest saltwater lagoon, the Mar Menor, has already seen critical oxygen shortages on several occasions.<sup>167</sup> As a result, rare animal species such as the long-snouted seahorse (*Hippocampus guttulatus*), the endangered Mediterranean fan mussel (*Pinna nobilis*) and the lagoon's biodiversity in general are threatened.<sup>168</sup> The population of the Mediterranean fan mussel has declined by >99% in recent years.<sup>169</sup> The long-snouted seahorse is categorised as being in critical danger of extinction in the Region of Murcia.<sup>170</sup>

The environmental catastrophe at the Mar Menor is mainly due to the huge areas of watered fields used to produce large quantities of vegetables for the European market. In total, 320,000 hectares are cultivated in the Region of Murcia alone.<sup>171</sup> Huge amounts of fertilisers, mostly nitrates and phosphates, are needed for this intensive, high-yield production method. Large quantities of nitrates dissolved in water from all over the Campo de Cartagena drainage basin run continuously down to the Mar Menor, which leads to eutrophication (excess of nutrients) and thus a massive growth of phytoplankton. Since sunlight can no longer reach the bottom of the lagoon, the seagrass and valuable benthonic fauna die. The water column

164 La Verdad, *The export of Murcian fruits and vegetables grew by almost 3% in 2019*, 1 June 2020: <https://www.laverdad.es/economia-region-murcia/exportacion-frutas-hortalizas-20200601131455-nt.html>

165 Bundesministerium für Ernährung und Landwirtschaft [Federal Ministry of Food and Agriculture], *Der Markt für frisches Obst und Gemüse in Spanien* [The market for fresh fruit and vegetables in Spain], February 2020: [https://www.agrarentportfoerderung.de/fileadmin/SITE\\_MASTER/content/files/Laenderberichte2020/Marktstudie\\_Spanien\\_Obst\\_Gemu\\_\\_se\\_ENDFASSUNG.pdf](https://www.agrarentportfoerderung.de/fileadmin/SITE_MASTER/content/files/Laenderberichte2020/Marktstudie_Spanien_Obst_Gemu__se_ENDFASSUNG.pdf), pp. 40–43.

166 See, for example, Deutschlandfunk, *Cheap vitamins*, 21 May 2006: <https://www.deutschlandfunk.de/billige-vitamine-100.html>

167 Deutschlandfunk, *Nitrate problem in Spain: Green soup, dead fish – the oversaturated Mar Menor*, 20 December 2021: <https://www.deutschlandfunk.de/nitrat-problem-in-spanien-102.html>

168 For an overview of the fauna, see Mar Menor Mar Mayor, *Fauna marina del Mar Menor* [Marine fauna of the Mar Menor], no date: <https://marmenormarmayor.es/mar-menor/fauna-marina-mar-menor/fauna-marina.html>

169 Cortés-Melendreras, M., Gomariz-Castillo, F., Alonso-Sarría, F., Giménez Martín, F.J., Murcia, J., Canales-Cáceres, R., Ramos Esplá, A.A., Barberá, C., and Giménez-Casalduero, F., “The relict population of *Pinna nobilis* in the Mar Menor is facing an uncertain future”, *Marine Pollution Bulletin* 185(B), December 2022: <https://www.sciencedirect.com/science/article/pii/S0025326X2201058X>

170 Deutsche Umwelthilfe, *Umweltkatastrophe am Mar Menor - Billiggemüse und tote Seepferdchen*, 2023: [https://www.duh.de/fileadmin/user\\_upload/download/Projektinformation/Naturschutz/Billiggem%C3%BCse\\_MarMenor/Factsheet\\_Mar\\_Menor\\_final.pdf](https://www.duh.de/fileadmin/user_upload/download/Projektinformation/Naturschutz/Billiggem%C3%BCse_MarMenor/Factsheet_Mar_Menor_final.pdf)

171 Terrenos.es, *Analysis of the situation of agriculture in the Region of Murcia by Remedios García*, General Director of Agriculture, Food Industry and Agrarian Cooperatives, 16 November 2016: <https://terrenos.es/blog/analisis-de-la-situacion-de-la-agricultura-en-la-region-de-murcia-por-remedios-garcia>



turns opaque, thereby turning into “green soup”, and the oxygen cycle is altered. The inhabitants of the ecosystem can no longer breathe, and they suffocate.<sup>172, 173</sup>

*Which adverse environmental impacts would the CSDDD cover?*

Commission	Council	Parliament
<p>None of the environmental conventions listed in the annex of the CSDDD Commission proposal refer to the protection of marine life or the conservation of valuable marine ecosystems. Reference to the CBD is limited to adverse impacts related to “the use of biological resources”, which is unlikely to apply to the adverse impacts on biodiversity described in this case.</p>	<p>References to provisions from MARPOL and UNCLOS only address pollution of the marine environment from non-land-based sources (such as ships) and thus exclude pollution from agriculture.</p> <p>The Mar Menor is listed as a protected site under the Ramsar Convention but it remains unclear from the Council text whether the respective prohibition for companies goes beyond compliance with any national laws implementing the convention.</p> <p>Reference to the CBD and the obligation to avoid or minimise adverse impacts on biodiversity may cover some of the adverse impacts described.</p>	<p>The obligations to identify, prevent, mitigate or bring to an end adverse impacts on water pollution, degradation of marine ecosystems as well as biodiversity loss are likely to cover the described impacts.</p>

172 Deutschlandfunk, *Nitrate problem in Spain*, 20 December 2021.

173 In October 2022, the Spanish “Law 19/2022 of 30 September on the recognition of the legal personality of the Mar Menor lagoon and its basin” entered into force. This means that the lagoon and its area of influence have the same rights as a person or a company, and their violation can be prosecuted as such.

## Annex

# Companies' comments submitted to BUND and Germanwatch in response to the findings of this report

*All companies mentioned in this report were given the opportunity to comment on the respective findings and send a written statement.*

## Danone

### On Packaging

Danone is actively working to reduce our use of plastic through a circular economy approach. Food packaging is fundamental to providing people with convenient, safe food and drinks, and to minimizing food waste. Nevertheless, we are convinced that the current packaging model must be transformed as it creates major environmental challenges due to plastic waste in nature and dependency on fossil fuels.

For that reason, we outlined our commitment to transition to a circular and low-carbon packaging system in our sustainability strategy Danone Impact Journey. As part of this vision, we have committed to:

- 100% reusable, recyclable or compostable packaging by 2030
- Have the use of virgin fossil-based packaging by 2040, with a 30% reduction by 2030, accelerating reuse and recycled materials
- Lead the development of effective collection systems to recover as much plastic as we use by 2040

To decouple our packaging from fossil resources, we are using recycled materials or renewables from responsibly managed sources as well as developing breakthrough materials. In 2022, there was 11.9% of recycled materials on average in our plastic packaging. We are also looking at alternative materials such as paper-based cups as well as bio-based materials. Reusable packaging solutions are a key lever to reduce our use of fossil-based packaging: around 50% of our water volumes are sold in reusable packaging, and we have bulk offers as well as pilots with innovative players like Loop by Terracycle to pilot new returnable concepts.

Danone is also working with others to ensure our packaging is collected and recycled at scale and to support the development of effective collection systems. As part of the Business Coalition for a Global Plastics Treaty, led by Ellen MacArthur Foundation (EMF) and WWF, we support a global treaty on plastics with legally binding rules and measures to drive circularity and curb plastics pollution on a global scale.

We monitor the scientific and regulatory evolutions on packaging and through our Food Safety Management System (FSMS) ensure our products and packaging are safe for use and compliant with regulations worldwide. Danone operates an 'absence by design' approach

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for certain chemicals of concern in packaging through internal standards, monitoring and appropriate specifications with our packaging suppliers.

### **On Human Rights and Due Diligence**

In 2022 Danone strengthened its human rights approach by publishing its Human Rights Policy. It confirms our commitment to upholding and strengthening human rights in our value chain, and outlines our expectations of employees and business partners to end exploitation (child labor, forced labor, harassment etc); offer decent work (fair wage, health, safety & wellbeing at work, freedom of association; and right to collective bargaining etc) and respect people in communities impacted by our activities.

We work to ensure these rights are respected through our due diligence, in our own operations including temp workers and contractor workers; through responsible procurement and our regenerative agriculture social pillar; and through our human rights grievance management.

Our business partners, including suppliers, must abide by Danone Sustainability Principles, standards which often go beyond local regulations. They promote decent working conditions, ethical behavior and environmentally responsible practices, requiring our partners to implement a recognized environmental management system to identify, minimize and mitigate environmental impacts. These principles are built into our General Terms of Procurement and are included in contracts, and we monitor partners' adherence and compliance.

We also recognize the importance of stakeholder dialogue in informing our approach with a specific role to be played by unions. We believe that overcoming human rights challenges in our value chains requires efforts from companies but also collaboration notably through industry initiatives and partnerships with civil society organizations, experts, suppliers, business partners and other businesses. We seek external views as part of continuously improving the efficacy of due diligence approach.

## **BASF**

We are aware of the public discussion on the use of crop protection products without EU approval in countries outside the EU. For many, the idea that active ingredients like fipronil and neonicotinoids that aren't currently registered in the EU can still be used safely in the right context may seem incomprehensible, but there are several reasons why these products are registered and approved in other markets.

While we acknowledge that these ingredients can be hazardous when used incorrectly, we are also convinced of their safety when used properly, based on rigorous testing. We support globally consistent high safety standards to ensure this, and accept our role in preventing harm through continuously providing and improving stewardship measures like training and safety equipment.

### **Exports**

It might seem perplexing that products unregistered in the EU can be used safely elsewhere, but there are significant differences in local requirements and assessments. Some crops, diseases and pests outside of the EU require products that are unnecessary in Europe, and therefore remain unregistered.

Registrations differ between the EU and elsewhere due to different processes. The EU employs a hazard-based approach, while many OECD countries take a risk-based approach which considers how hazard can be mitigated.

### **Neonicotinoids and fipronil**

We are aware of discussions on the possible impact of insecticides like fipronil and neonicotinoids on biodiversity, particularly pollinators. Pollinators and insecticides are both vital to agriculture. Their coexistence is crucial, which is why we only market applications proved to be safe.

Through seed treatments and in-furrow applications, products are incorporated below the soil surface so there is no contact with pollinators above ground. For fipronil, we decided to phase out products for foliar use with the single exception of the very specific application used in oil palm cultivation, supported by the RSPO.

## Perenco

Perenco pays all relevant taxes in the countries in which the group is present and any suggestion to the contrary is false and defamatory. Perenco is a private independent group with no ties to decision-makers. The group's policy is to actively engage with all relevant stakeholders. Perenco also subscribes to the Extractive Industries Transparency Initiative, the voluntary process which shows the amounts companies have paid to the states where they operate. Perenco's operations are conducted in accordance with strict environmental standards. The preservation of the environment and biodiversity are a key element of the group's policy. Perenco actively contributes to the conservation of the environment, with targeted programs with the ICCN and the fishermen's associations of Moanda, among other local development activities, including but not limited to agroforestry and support for small businesses and local crafts. The oil and gas operation onshore DRC started in the 1980's, before the city of Muanda's expansion. The latter has accelerated in the last 10 years. Over time, the city has moved closer to the production areas, not the opposite. Notwithstanding this, Perenco systematically takes precautionary security measures to protect newly established residential areas from potential hazards relating to the oil & gas operations. Perenco works closely with local, regional and national authorities to ensure the satisfactory coexistence with the local communities. This includes millions of dollars of salaries paid each month to Perenco employed workers living in the region of Muanda, the supply of water, electricity, education, and health facilities. Perenco provides indispensable financial support and utility services to the local communities.

## Deutsche Bank

We cannot comment on any potential or existing client relationships. In general, Deutsche Bank has a set of requirements and guiding principles that we apply to our client and business selection processes in order to ensure sustainable activities. Doing this effectively is essential to mitigate and manage negative impacts on the environment or society, and to uphold the bank's commitments to international standards. You can find a summary of our Environmental and Social Policy Framework [here](#). As part of this approach, Deutsche Bank applies enhanced environmental and social due diligence for transactions in the Oil & Gas sector. According to the policy in place, the bank will for example not finance oil and gas

projects via hydraulic fracturing in countries with extremely high water stress. Please find more information about Deutsche Bank's commitments and management approach to environmental, social, and governance (ESG) topics in our Non-financial report 2022 as well as our Sustainability Deep Dive 2023 material.

## BNP Paribas

BNP Paribas is committed to fighting climate change and supporting the energy transition. In 2017, BNP Paribas was one of the first global banks to stop financing unconventional oil and gas projects as well as unconventional hydrocarbon specialists. The Group's credit exposure to this segment has decreased from over 4 billion in 2016 to zero by the end of 2021.

In 2023, BNP Paribas announced its progressive withdrawal from oil and gas exploration and production activities and committed to reduce its credit exposure to upstream oil by 80% and upstream gas by 30% by 2030 through the following measures:

- No new financing provided to the development of new oil or gas reserves whether conventional or unconventional through project finance or FPSO's financing.
- Phase out of the financing of non-diversified oil players: BNP Paribas will not participate to any new financing through RBL, corporate finance lines or bonds in favour of these non-diversified players and will endeavour to divest the related credit portfolio to comply with the 80% reduction of oil related exposure;
- Reduction of BNP Paribas' participation to general corporate purpose facilities allocated to upstream oil.

Consequently, in line with the Group's updated oil and gas policy, BNP Paribas will not finance any unconventional oil and gas project in Vaca Muerta.

The Group continues to support diversified energy companies which have the necessary levers to accelerate the transition due to their technical and financial capacities. To that end, we pay close attention to how they are implementing their decarbonation commitments and how their trajectories are aligning with the IEA NZE 2050 scenario, in particular by 2030, as well as how they allocate their investment capacity to support the development of renewable energies and other transformative solutions such as electrification, green hydrogen, etc..

## Andritz AG

Within the National Contact Point process (NCP), we had intensive discussions with your Austrian and Thai colleagues from ECA Watch, WWF and various organizations in Thailand. These discussions covered all the issues you mentioned in your report and a lot of relevant information has been passed. The developer and operator of the Xayaburi power plant showed transparency by sharing all relevant information on hydrology, upstream and downstream fish migration studies and sediment transport issues. After a process that took more than three years, this finally led to a jointly signed document that has been amicably agreed.

Allow us to address some of the points raised in your report:

**Water level**

Xayaburi is a run-off-the-river power station, which minimizes its impact on the river and the environment. There is practically no water storage area, which means that the water coming in is always equal to the water going out.

**Fish migration**

Comprehensive studies have been conducted on the Mekong River, focusing on fish biomass, migration timing, fish sampling (2012 – 2014), fish biodiversity (2013-2014) and fish swimming abilities (2014). The results of these studies led to a substantial redesign of the hydro power plant to accommodate fish migration upstream and downstream. Additionally, the approval of the project involved the active participation of European experts, and ecological and social accompanying measures were implemented following an extensive environmental impact study. The Mekong River Commission has been continuously involved in the project since its inception. The accompanying measures include structural measures to ensure sediment transport and fish migration such as fish passes, ladders, and side canals, all of which were carefully developed based on in-depth analyses, including a year-long study on the migratory behavior of the fish in the specific stretch of the Mekong. The functionality of these measures has been validated through ongoing analyses.

**Environmental Considerations:**

Due to the invaluable ecosystem of the Mekong which supports over 60 million people dependent on the river and its fish population, Andritz has designed and installed fish-friendly turbines at the Xayaburi plant. These turbines feature a reduced number of impeller blades, lower speed, and a modified operation scheme, making them highly conducive to fish passage. Moreover, the use of oil-free hubs eliminates the need for a significant amount of oil (14,000 liters per engine) and ensures that no oil spills enter the Mekong.

**Sediment**

The sediment content depends to a large extent on the structure and operation of the power plants in the upper reaches of the river. At Xayaburi, the incoming sediment flow is low. However, proactive measures took place to address this concern by constructing additional bottom outlets in the dam. These outlets facilitate the passage and controlled flushing of incoming sediment downstream.

Approximately tenth of the entire construction cost for the power plant has been allocated to meet stringent environmental regulations.

We trust that these explanations provide a comprehensive overview of the robust environmental measures that have been implemented. We remain committed to ensuring the utmost care for the environment and the communities impacted by our projects.



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**November 2023**

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