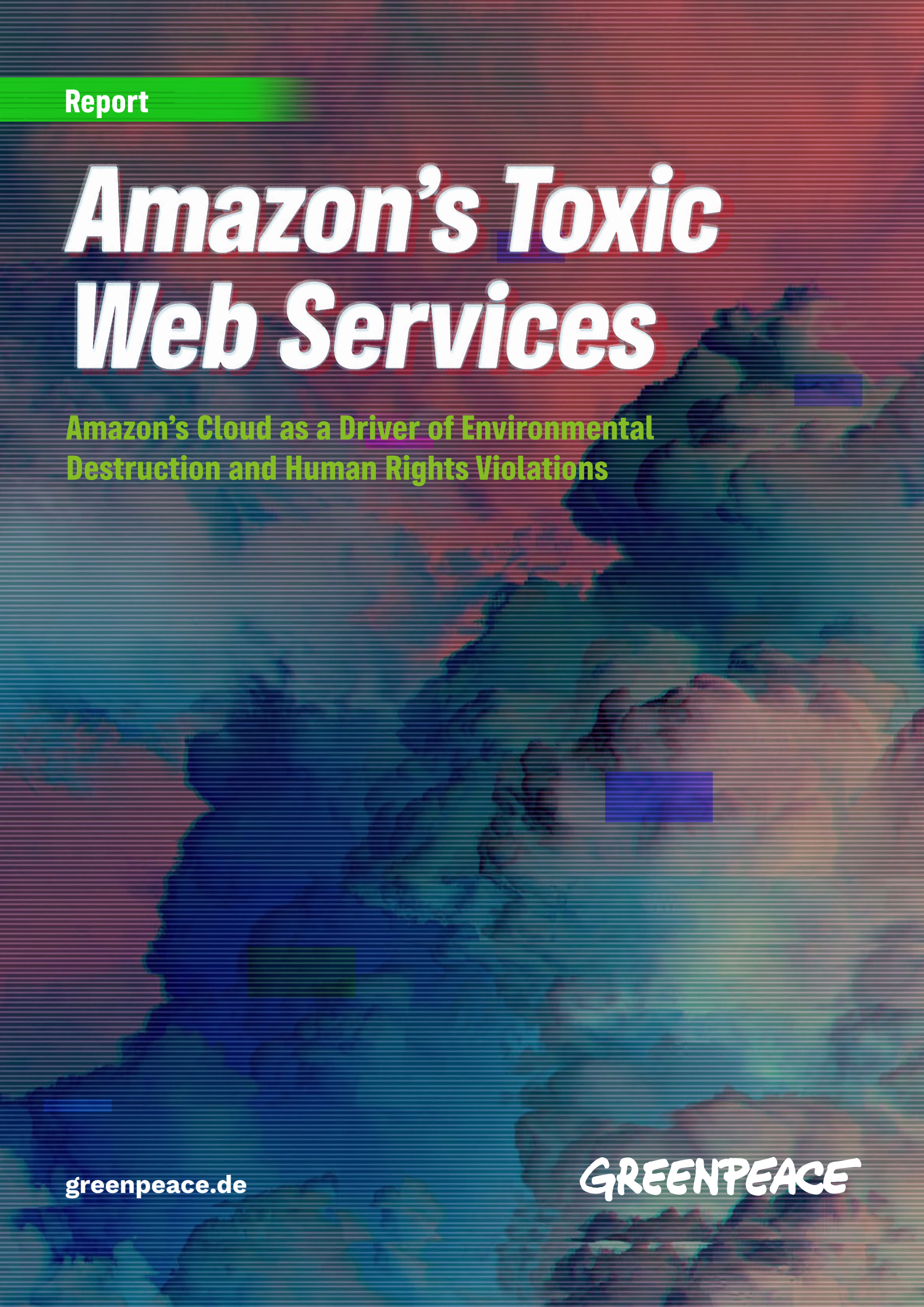
Report

Amazon's Toxic Web Services

Amazon's Cloud as a Driver of Environmental Destruction and Human Rights Violations



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Executive Summary

The digital revolution has concentrated unprecedented economic and societal power in the hands of tech giants such as Google, Microsoft, and their peers. Their cloud, AI, and platform services now permeate virtually all areas of public and private life, from personal communications and global supply chains to military operations and government surveillance. The systemic significance of these services entails profound societal risks. In addition to the enormous energy and resource consumption of big tech companies, this study focuses in particular on how these companies drive environmentally destructive business models, strengthen the technological capabilities of authoritarian regimes, and are implicated in serious human rights violations.

While other similarly sensitive sectors, such as the pharmaceutical and financial industries, have long been subject to robust regulatory frameworks and industry commitments, Big Tech continues to operate largely without comparable ethical guardrails. Although the European Union has taken initial regulatory steps, binding, industry-wide commitments have yet to be established – commitments that would clearly define the specific responsibilities of digital "enablers," especially given these companies' global reach.

Methodology and Findings

The study applies exclusion criteria developed in the financial sector to identify highly controversial companies, using them as a benchmark to assess the business practices of digital service providers such as Amazon Web Services (AWS). It draws on the exclusion list of Norway's sovereign wealth fund (managed by Norges Bank Investment Management), Europe's largest investor with € 1.8 trillion in assets under management, and supplements it with Urgewald's climate exclusion lists (GCEL/GOGEL) and the lists compiled by PAX of companies involved in autonomous weapons systems. The resulting reference list for digital service providers comprises 263 companies whose business practices fundamentally violate minimum environmental and ethical standards. AWS client relationships were identified using Bloomberg and TheirStack databases and supplemented by extensive online research.

The findings are clear and give cause for concern: Amazon's cloud provider AWS maintains business relationships with at least 100 of the 263 companies on the exclusion list (38 percent). It also has ties to at least 70 of the companies (34 percent) excluded by Norway's sovereign wealth fund on ethical grounds alone. For entities in the arms and surveillance industry classified as "high concern" by the Dutch human rights organization PAX, the share rises to 55 percent. As this analysis relies exclusively on publicly available data, these figures should be understood as representing a lower bound; the actual extent of AWS's involvement with controversial business partners is likely significantly higher.

The cases documented in this study exemplify the unscrupulous nature of these business practices: AWS supplies the Brazilian meat company JBS, one of the largest drivers of Amazon deforestation and a methane emitter whose emissions are comparable to those of entire industrialized countries. AWS supports Shell with AI models and computing power for seismic exploration of new oil and gas fields, directly accelerating the expansion of fossil fuel operations, contrary to the goals of the Paris Agreement. AWS also develops products with Palantir, whose surveillance and analytics systems have been criticized by Amnesty International for their role in serious human rights violations.

These findings demonstrate that, by cooperating with companies involved in well-documented and severe controversies, AWS systematically acts as both an enabler – and, in effect, a collaborator – in destructive business models. Amazon's cloud division lacks meaningful environmental and ethical commitments commensurate with its role as a systemically significant technology provider. What has long been standard practice in the financial sector – the recognition of responsibility for enabled business practices – remains entirely absent in the case of AWS.

1. Introduction

The digital revolution of recent decades has unfolded with extraordinary pace, transforming large parts of economic and social life. At the same time, this wave of technological disruption, initially accompanied by grand promises of freedom and participation, has enabled major tech corporations to amass economic, political, and societal power on an unprecedented scale in modern history.

What began as a promise of positive change has evolved into a complex web of digital infrastructures, platforms, and data-driven economies that now permeate nearly all areas of human interaction – from personal communications to global supply chains and even military and governmental decision-making.

This deep integration and the resulting concentration of power in Big Tech companies pose significant risks. In addition to the environmental impact of the enormous energy and resource consumption of digital infrastructures, there are growing concerns about the unethical use of digital systems. These include enabling environmentally destructive business models, supporting authoritarian surveillance systems, and contributing to serious human rights violations. Together, these developments raise urgent questions about the societal responsibility of tech corporations.

Other highly sensitive sectors, such as pharmaceuticals and finance, have long been recognized as carrying risks for the public good. They are therefore subject to strict regulatory frameworks and widely adopted voluntary commitments. By contrast, the Big Tech sector still lacks comparable binding environmental and ethical minimum standards.

This study addresses that absence of such standards. It uses Amazon Web Services (AWS), a wholly owned subsidiary of Amazon, as a case study to examine whether a central actor in the global cloud economy meets its societal responsibilities. It also examines the company's business relationships against established exclusion lists used in the financial sector to identify controversial companies. The exclusion list of the Norges Bank Investment Management fund serves as a starting point for identifying companies **that technology providers should refuse to engage with.** The list has been supplemented with other lists that exclude companies implicated in serious weapons and environmental controversies.

The investigation into AWS's client relationships with controversial companies shows that AWS maintains business ties with at least one-third (38 percent) of companies involved in serious environmental or social controversies and conflicts, thereby contributing to their problematic business practices. These include companies considered unacceptable from environmental and human rights perspectives, such as the Brazilian meat company and rainforest destroyer JBS, the U.S.-based surveillance company Palantir, and the oil and gas corporation Shell.

Based on this evidence of AWS's broadly unscrupulous business practices, Greenpeace Germany has published guidelines defining environmental and ethical minimum standards for cloud providers.[1] Modeled on established principles from the pharmaceutical and financial sectors – and necessarily combined with government regulation – this framework aims to help transform the business practices of Big Tech companies like AWS in the interest of the public good, address the risks of technological misuse, and create an operational reality that respects people and the environment while upholding democratic structures.

2. Innovation for Good – Critical Sectors Require Clear Rules

2.1 A brief history of regulation and voluntary commitments

The principle of corporate social responsibility

Since the beginnings of modern corporations, questions of ethical responsibility have accompanied economic activity. As early as the Industrial Revolution, it became clear that economic progress that disregarded the public good could cause serious social and environmental harm and that companies themselves should be expected to play a role in addressing these consequences. In Germany, the idea of social responsibility beyond the pure pursuit of profit shaped the concept of the "honorable merchant," which embodies a form of business conduct grounded in ethical principles rather than profit maximization alone. As a result of these ideas, early forms of corporate responsibility emerged in the 19th century, complemented by state regulation and labor standards designed to protect workers' rights.

While these early efforts focused on minimum labor standards, the understanding of corporate responsibility expanded significantly throughout the 20th and 21st centuries under the concept of Corporate Social Responsibility (CSR).[2] Today, companies are widely understood as societal actors responsible for the impacts of their activities across entire value chains. This development led to the recognition that global challenges – from human rights to climate change – can only be addressed through shared, internationally coordinated principles, and that companies and their shareholders also bear responsibility.

Against this backdrop, the United Nations Global Compact was established as the world's largest initiative for sustainable and responsible business conduct. It is based on ten universal principles, grouped into four core areas:[3]

1. **Human rights:** Respect and protection of internationally recognized human rights and avoidance of human rights violations
2. **Labor standards:** Upholding the freedom of association, the elimination of forced and child labor, and the elimination of discrimination
3. **Environmental protection:** A precautionary approach to environmental challenges and the development and diffusion of environmentally friendly technologies
4. **Anti-corruption:** Zero tolerance for corruption in all its forms, including extortion and bribery

The Global Compact is not a regulatory instrument but a voluntary initiative through which companies commit to systematically integrating ethical principles into their strategies and business operations. In doing so, they seek to contribute to sustainable global development.

In 2023, OECD member states adopted an updated set of guidelines on corporate ethics consisting of revised principles for responsible business conduct for multinational enterprises.[4] These guidelines complement the United Nations Global Compact and are more specific, placing stronger obligations on companies that go beyond voluntary commitment.

Special ethical obligations of high-risk sectors: pharmaceuticals and finance

In addition to general obligations that apply to all companies under widely recognized standards of business ethics, economic history shows that some sectors carry a greater societal responsibility. This is especially true of sectors that are highly innovative and pose particular systemic risks, because adverse developments in these areas can have serious consequences for society as a whole.

Such developments, with their potentially systemic risks and far-reaching impacts, require these sectors to be subject to particularly strict rules of conduct in the public interest. These rules must ensure that

high-risk sectors and the innovations they generate deliver their intended social benefits and are not used in ways that harm the broader public.

One of the most well-known and historically enduring examples of (voluntary) commitment to the public good is the Hippocratic Oath taken by physicians, which dates back to about 400 BCE. It placed medical practitioners under clear normative obligations and established core principles, including the duty to do no harm to patients and prohibitions against sexual misconduct and certain practices such as assisted dying. Elements of this ethical framework remain embedded in modern medical practice today, including the Geneva Declaration of the World Medical Association, the codes of medical associations, stringent regulatory requirements for the approval of new medicines, and general pharmaceutical regulation. As a result, the healthcare sector is among the most heavily regulated industries, combining strict legal frameworks with extensive voluntary commitments.

A selection of core elements of pharmaceutical regulation and voluntary commitment illustrates how extensively the public is protected in the field of medical innovation:

1. **Strict oversight of drug approval:** Medical research and the approval of medicines and therapies must be reviewed by ethics committees and regulated by authorities such as the European Medicines Agency, the German Federal Institute for Drugs and Medical Devices (BfArM), and the Paul-Ehrlich-Institut (PEI), with continuous regulatory oversight.
2. **Unsafe medicines must not be approved for market entry:** Approval requires demonstrated therapeutic benefit, and the protection of trial participants and patients is of highest priority.[5]
3. **Prevention of conflicts of interest and undue influence:** Pharmaceutical companies are required to avoid improper influence on healthcare professionals. Medical treatment must be based solely on clinical considerations.[6]
4. **Respect for human rights and civil liberties:** The application of medical knowledge must not violate human rights or fundamental civil liberties.[7]

The underlying logic of all these laws, regulations, and voluntary commitments – of which the four examples above represent only a small selection – is to place the advances and activities of the healthcare sector at the service of the public good, while preventing potential negative societal impacts arising from their improper use.[8]

Another key sector that illustrates the need for strict regulation of innovation and progress is the financial sector. This sector provides essential services that support wealth-generating economic development. At the same time, it is highly dynamic and, driven by strong profit incentives, generates a wide range of innovative financial tools and new business models that carry significant risks of improper use and potential systemic consequences.[9]

Throughout history, these risks have repeatedly led to major disruptions. The history of finance is also a history of financial and economic crises, of ongoing efforts to establish regulatory rules and frameworks to prevent such crises, and of attempts to manage the sector's specific risk profile. It is therefore not surprising that the financial sector, alongside the pharmaceutical industry, is among the most heavily regulated sectors worldwide.

As in the pharmaceutical sector, statutory banking and financial regulation address only part, not all, of the sector's societal responsibility, namely those aspects aimed at preventing financial crises. Given the sector's systemic importance, however, it soon became clear that the financial sector bears ethical responsibilities that extend beyond legal requirements. To address these responsibilities, financial institutions established an initiative under the auspices of the United Nations, committing to the Principles for Responsible Investment (PRI).[10]

The United Nations Principles for Responsible Investment are based on the idea that financial actors should consider not only financial performance indicators but also environmental, social, and governance (ESG) factors in investment decisions. To promote greater sustainability and social responsibility in the financial sector, signatories commit to:[11]

- incorporate ESG issues into investment analysis and decision-making processes.
- be active owners and incorporate ESG issues into ownership policies and practices.
- seek appropriate disclosure on ESG issues from the entities in which they invest.
- promote acceptance and implementation of the Principles within the investment industry.

- work together to enhance the effective implementation of the Principles.
- report on activities and progress toward implementing the Principles.

This voluntary commitment builds on the principles of the UN Global Compact and adapts them to the specific characteristics of the financial sector. The Principles for Responsible Investment provide a framework for financial actors to translate these principles into ethical standards and rules of conduct. On this basis, institutions develop concrete investment guidelines and exclusion criteria, which are implemented at the institutional level and are typically grounded in international agreements and conventions.[12]

- **Prohibited weapons and landmines:** Many banks refuse to finance companies involved in the production or trade of anti-personnel mines, cluster munitions, or other controversial weapons.
- **Environmental safeguards:** Most banks exclude projects and companies that cause significant environmental harm or are associated with the destruction of old-growth or tropical rainforests.
- **High climate-impact activities:** Financing is often restricted or excluded for companies that contribute significantly to climate change. For many banks, this applies to companies involved in coal mining, coal development, and coal-fired power generation, and in some cases also to oil and gas producers.
- **Human rights and labor standards:** Many banks exclude financing where there are serious violations of human rights or labor standards within supply chains.

These examples show that societies have extensive experience in dealing with sensitive sectors of the economy that, on the one hand, offer significant societal benefits but, on the other, can also generate substantial societal and environmental costs when misdirected or misused.

It is therefore not surprising that such sensitive sectors are typically subject to strict regulatory frameworks, alongside robust voluntary ethical standards.

2.2 Implications for Big Tech companies: The need for ambitious voluntary ethical standards

Major tech companies are profoundly reshaping large parts of the economy and society. Their economic power, and that of their owners, has reached unprecedented levels, and their influence extends far beyond their sector. The rapid increase in computing capacity required for their services, together with the resulting energy and resource consumption, is placing significant pressure on existing climate and environmental regulations and, in some cases, has already contributed to their weakening or suspension.

Big Tech providers enable controversial companies to scale their operations by giving them access to advanced digital infrastructure and services. Many use these tools to improve the efficiency of their business operations, regardless of whether those activities comply with environmental, labor, or human rights standards.

This, in turn, allows highly controversial companies worldwide to expand problematic business models with the support of Big Tech providers.

Box 1: AWS, an Enabler and Accelerator of Climate Change through Its Support of Fossil Fuel Expansion – The Case of Shell

Shell, headquartered in the United Kingdom, is one of the world's largest oil and gas producers and was Europe's largest CO_2 emitter in 2023.[13] According to the Carbon Majors database, Shell has been responsible for more than two percent of global CO_2 emissions since 1965, making it one of the largest drivers of climate change.[14] In clear contradiction to the objectives of the Paris Agreement, which require an immediate halt of fossil fuel expansion to meet its temperature goals, Shell continues to explore new oil and gas reserves worldwide.[15]

To do so, Shell also carries out large-scale seabed exploration. Sound waves are emitted and analyzed using advanced data processing techniques. Shell relies on Amazon Web Services' infrastructure for this form of seismic surveying. According to company statements, AWS's AI models and computing power deliver significant efficiency gains, enabling new oil and gas fields to be identified and developed much more quickly.[16] Moreover, according to Shell, AWS also facilitates exploration in some of the most remote regions of the planet.[17]

This case not only highlights the close operational relationship between AWS and one of the world's largest fossil fuel producers but also illustrates how AWS, through its digital services, actively contributes to climate change.

Companies are not the only actors that make use of the capabilities offered by Big Tech services such as AWS – governments do as well. In some cases, these technologies are used to improve administrative efficiency and the delivery of public services. In others, however, they are deployed to strengthen surveillance systems, reinforce authoritarian structures, and undermine democratic processes. Digital platforms are also used to influence electoral processes, with the potential to shape or even determine election outcomes.[18] Tech companies likewise play a key role in ongoing and escalating military conflicts.[19] Certain digital products and platforms also pose well-documented health risks, particularly for younger users. As a result, some countries have begun to restrict and even ban specific digital services for children and teenagers.[20]

Given the significant societal risks associated with the unchecked use of digital services, Big Tech belongs in the same category as the high-risk sectors outlined in the previous chapter: pharmaceuticals and finance. Considering the sector's disruptive potential and the far-reaching societal risks it poses, its special responsibilities have not only been the subject of widespread debate but have also led to concrete policy proposals and regulatory initiatives.

Countless researchers, journalists, authors, and NGO experts continue to highlight these risks and call for stronger regulation of digital services to limit their use and mitigate their impacts. A few years ago, the European Union established a comprehensive and pioneering regulatory framework, widely regarded as a global benchmark for governing powerful tech companies and safeguarding the environment, public safety, and democratic systems:[21]

- **Digital Services Act (DSA):** The DSA holds online platforms accountable based on their service size and societal impact. It enhances transparency requirements and obliges platforms to address illegal content and systemic risks.
- **Digital Markets Act (DMA):** The DMA limits the market power of major tech companies, referred to as "gatekeepers," by restricting unfair practices such as self-preferencing, lock-in effects, and data misuse, opening digital markets to greater competition.
- **AI Act:** The AI Act is a legal framework that imposes additional obligations on providers and deployers of AI systems based on risk level, particularly on Big Tech companies as major developers of AI models, setting mandatory rules on safety, transparency, governance, and risk mitigation. The Act also explicitly prohibits certain applications, such as social scoring and emotion recognition in the workplace.[22]

In addition to these regulations governing digital technologies, numerous other requirements establish environmental standards for the provision and deployment of digital services. One example at the European level is the Energy Efficiency Directive (EED), which lays out clear reporting and transparency requirements for energy consumption and is further tightened by member state legislation, such as Germany's Energy Efficiency Act (EnEfG). For example, in Germany, data center operators are required to use 100 percent renewable electricity and to reuse at least 20 percent of their waste heat.

However, these government regulations are not sufficient to address the high-risk nature of the tech sector and its systemic societal risks. Like the financial and pharmaceutical sectors, tech companies also require robust internal ethical standards, that is, voluntary commitments that go beyond legal requirements, if they are to meet their societal responsibilities.[23]

3. Established Exclusion Lists of High-Risk Companies as a Standard for Big Tech

Voluntary commitments in the financial sector provide a useful starting point for addressing the following questions: What business decisions would the tech industry make when dealing with controversial clients if minimum ethical standards were applied? And what would the practical implications be? The approach of Europe's largest institutional investor, Norway's Sovereign wealth fund Statens pensjonsfond utland, managed by Norges Bank, offers a particularly useful point of reference. The Fund successfully manages assets worth € 1.8 trillion and defines its role as a responsible investor as follows:

The fund's long-term return is dependent on sustainable economic, environmental and social development. As we own a small slice of most of the world's largest companies, we have the ability to influence how they operate. We aim to promote long-term value creation at the companies and minimise negative effects on the environment and society.[24]

To put its ethical responsibilities into practice, the Fund has developed a comprehensive framework for assessing and excluding companies involved in serious environmental or social controversies.[25] These ethical guidelines aim to avoid investing in companies whose business practices are linked to significant ethical, humanitarian, or environmental risks. Importantly, this includes not only direct misconduct, but also unacceptable indirect risks of complicity through products, business activities, or affiliated corporate entities. Specifically, the criteria for identifying companies for exclusion include:

- **Serious environmental harm and emissions:** Companies responsible for significant environmental damage or whose activities at the corporate level result in unacceptable greenhouse gas emissions.
- **Thermal coal:** Mining and energy companies are flagged for exclusion if a substantial share of their operations is based on thermal coal.
- **Corruption and serious norm violations:** Additional exclusion criteria include gross corruption, other serious financial crimes, or particularly severe violations of fundamental ethical principles.
- **Human rights and conflict situations:** Companies are subject to exclusion where there is an unacceptable risk that they contribute to severe and systematic human rights violations or to serious violations of individual rights in situations of war or conflict.
- **Prohibited or highly sensitive products:** Companies are excluded if they, or entities they control, develop or produce weapons or key components that violate fundamental humanitarian principles, including biological, chemical, or nuclear weapons, incendiary weapons, blinding laser weapons, anti-personnel mines, cluster munitions, and non-detectable fragments.[26]
- **Tobacco and recreational cannabis:** Companies are also excluded if they produce tobacco products or cannabis for recreational use.

To ensure the implementation of these ethical guidelines, **an independent Council on Ethics** has also been established.[27] The Council consists of experts from academia and civil society and is tasked with informing the Fund's management of potential violations and recommending exclusions. The Council on Ethics is explicitly authorized to gather all available information on potential controversies and conflicts. All recommendations by the Council, as well as all exclusion decisions, are made public.

Based on these ethical guidelines, the Fund has already excluded many companies. These exclusions provide a useful starting point for a potential exclusion list, or "avoid list," needed for Big Tech companies such as AWS. Accordingly, this study draws extensively on Norges' exclusion list to identify AWS's controversial business relationships and clients that could warrant exclusion.

In addition to exclusions based on ethical considerations, Norges also excludes a number of upstream oil and gas companies for financial risk management reasons.[28] As the Fund is financed by oil and gas revenues, these exclusions reduce its exposure to financial risk in that sector. While this may also be desirable from an environmental perspective, these exclusions are not based on ethical criteria. They therefore cannot be directly applied to tech companies without separate justification.[29]

The exclusion lists compiled by the environmental organization urgewald provide a useful supplement to Norges' ethically motivated exclusion list for climate-critical fossil fuel companies. This applies in particular to the Global Coal Exit List (GCEL) and the Global Oil & Gas Exit List (GOGEL).[30] urgewald assesses whether the operations and investment plans of fossil fuel companies are compatible with the requirements of the Paris Agreement under international law, and recommends exclusion where they are not. Unlike Norges, urgewald also includes privately owned companies that are not publicly listed. This broader scope is also relevant to the tech sector, where a significant number of companies are not publicly traded.

Norges' exclusion list should also be supplemented by an assessment of companies involved in the production of controversial weapons systems, particularly newer systems for which international treaties have not yet been drafted. The lists compiled by the Dutch NGO PAX are especially relevant in this regard. In two analyses, PAX identified companies in the defense and tech sectors that provide technologies used in highly sensitive lethal autonomous weapons systems (LAWS) and that do not show sufficient commitment to preventing their products from being used in such systems. PAX classifies these companies as "high concern".[31]

The ethical standards applied by Norges, together with the supplementary frameworks provided by the NGOs urgewald and PAX, provide a basis for compiling robust exclusion lists of controversial companies. These lists can then serve as a concrete tool for applying minimum ethical standards to the business conduct of tech companies. They can be summarized as follows:

Table 1: Overview of the Norges exclusion list and the supplementary exclusion list, covering controversial companies in environmentally sensitive sectors and emerging weapons systems

Exclusion list of Norway's sovereign wealth fund (managed by Norges)	
Norges exclusion list	**205 companies** implicated in controversies in the following areas: nuclear weapons, cluster munitions, tobacco, cannabis, coal and coal-based energy, unacceptable greenhouse gas emissions, severe environmental damage, human rights violations, and violations of fundamental rights in war and armed conflict, arms sales to conflict zones, as well as gross corruption and major ethical breaches.
Supplementary exclusion lists: climate-critical and environmentally controversial companies	
Global Coal Exit List (GCEL) and Global Oil and Gas Exit List (GOGEL) compiled by urgewald	Companies responsible for more than 90 percent of global thermal coal production and global power plant capacity, as well as 95 percent of global oil and gas production. Given the large number of companies on the lists, the analysis focuses on AWS's business relationships with the 18 largest coal, oil, and gas companies worldwide to examine potentially controversial business activities. These companies are highlighted on the urgewald website:[32] **The 18 largest controversial companies:** Adani Duke Energy EPH Eskom Glencore KEPCO Peabody San Miguel Saudi Aramco Exxon Mobil Corporation Chevron Petróleo Brasileiro SA - Petrobras China National Petroleum Corporation BP plc Shell plc TotalEnergies SE Petroleos Mexicanos (Pemex) Eni SpA
Exclusion lists of companies implicated in controversial weapons systems	
Lists compiled by PAX of companies implicated in controversial weapons systems[33]	**30 companies (high concern)** involved in relevant autonomous weapons technologies without a clear policy on human control over lethal autonomous weapons systems (LAWS). **21 tech companies (high concern)** whose technologies are relevant to LAWS and who collaborate with companies on military projects involving LAWS.

4. Amazon Web Services' Controversial Business Relationships

Exclusion lists make it possible to assess the extent to which a tech company maintains business relationships with controversial actors. The higher the number of excluded actors among a company's clients (see Table 1), the more this suggests that the company gives insufficient attention to the negative societal impacts of its business activities. It also indicates that, in pursuit of profit, the company is prepared not only to overlook human rights violations and serious environmental harm, but also to continue to enable them through its products and services.

4.1 Methodology

The following section explains the methodology used to examine AWS's business relationships for evidence of collaboration with controversial companies as defined by the exclusion lists outlined above. However, such relationships are inherently difficult for outside observers to identify and verify.

First, research was conducted to identify the companies with which AWS maintains business relationships. Indications and evidence of such relationships were gathered using a range of research methods, including investigative desk research and online searches. Sources reviewed included job portals, client portals, corporate publications, annual reports, and privacy policies that indicated an existing business relationship. A business relationship was considered confirmed where a company was listed as an AWS client in TheirStack or Bloomberg, or where online research established a direct connection to AWS, for example, through company websites, online documents, or AWS publications. Additional indications of a business relationship were found in job postings by companies seeking to recruit candidates with AWS experience.

An existing business relationship with AWS was considered **confirmed** if:

a. TheirStack identified the company as an AWS client with a "high confidence" score;
b. Bloomberg listed the company as an AWS client; or
c. online research produced reliable sources and references indicating collaboration with AWS.

A business relationship was considered **likely** if:

a. TheirStack identified the company as an AWS client with a "medium confidence" score.

Where evidence of collaboration with AWS was missing or weak, the business relationship was classified as unknown. A detailed overview of the evidence of collaboration between AWS and specific companies is available on Greenpeace Germany's data portal link to https://daten.greenpeace.de/dataset/260505-aws-clients.

In a second step, the Norges exclusion list described in Chapter 3 and the supplementary exclusion lists compiled by urgewald and PAX were reviewed to determine whether they included companies with confirmed or likely AWS business relationships.

The review was carried out in two steps:

1. First, the Norges exclusion list was consulted to determine which AWS clients it listed. As noted above, this list serves as a starting point for applying ethical exclusion criteria. Where AWS has a verified business relationship with a company on this list, this indicates a failure to meet basic ethical standards comparable to those applied by Europe's largest financial investor.
2. In a second step, the supplementary exclusion lists were reviewed for additional AWS business relationships, as the Norges list does not fully cover environmental and weapons-related

controversies (see Chapter 3). A company that adheres to credible minimum ethical standards would avoid partnering with these controversial companies. Such relationships, therefore, point to serious gaps in AWS's ethical business practices.

When interpreting the findings, it is essential to keep in mind that the number of controversial companies identified through this approach as having ties to AWS represents only a lower bound. The absence of evidence of an AWS business relationship does not mean that no such relationship exists.

4.2 Findings

The above review of AWS's client relationships to identify ethically questionable business partners that may warrant exclusion produced the following findings:

1. **AWS maintains business relationships with at least 70 companies on the Norges exclusion list, representing at least 34 percent of all controversial companies on that list.**
   a. If Chinese companies are excluded from that calculation, the share of remaining controversial companies with AWS business relationships increases to at least 39 percent.[34]

2. **AWS maintains business relationships with at least 100 companies on the supplementary exclusion lists compiled by urgewald and PAX, representing 38 percent of all controversial companies on those lists.**
   a. AWS maintains business relationships with at least 28 companies on the PAX exclusion list, representing at least 55 percent of the controversial companies on that list.
   b. AWS maintains business relationships with at least 11 companies on the urgewald exclusion list, representing 61 percent of the controversial companies on that list.

A comparison of AWS's client relationships with exclusion lists for highly controversial companies yields a striking finding: Amazon maintains business relationships with many high-risk companies across all ethically controversial fields. For example, AWS does business with major environmental destroyers such as the meat company JBS (see Box 2).

Box 2: A Major Driver of Ecosystem Destruction: JBS, The World's Largest Meat Company

Amazon Web Services maintains a close client relationship with the Brazilian meat producer JBS,[35] as evidenced, among other sources, by JBS's privacy policy. AWS also supports the company in optimizing its business processes.[36] Norges excluded JBS because of numerous serious ethical controversies, and sustainability rating agencies classify the company as carrying an extremely high sustainability risk. With regard to environmental and human rights issues, JBS is considered one of the world's most controversial and destructive companies.

Particularly alarming are JBS's role as a major driver of deforestation in the Brazilian rainforest, its massive greenhouse gas emissions, and its impact on climate change. Investigations have repeatedly shown that JBS sources cattle from illegal ranches in the Amazon and that its business model is closely linked to large-scale deforestation.[37] According to an analysis by the Institute for Agriculture and Trade Policy, JBS is responsible for more methane emissions than entire industrialized countries such as France or Italy.[38] Moreover, JBS owners Wesley and Joesley Batista have admitted their role in widespread bribery of Brazilian officials, resulting in billions of dollars in fines.[39] Serious supply chain failures and repeated major violations of environmental and labor standards have made JBS uninvestable for European banks.

From an ecosystem-risk perspective, it is difficult to identify a more problematic company anywhere in the world. The business relationship between JBS and AWS, therefore, raises serious doubts about AWS's ethical integrity.

AWS also maintains extensive business relationships with companies such as Chevron, Exxon, and Shell (see Box 1), which are among the biggest drivers of climate change and whose aggressive fossil fuel expansion strategies run counter to the goals of the legally binding Paris Agreement.

Upon closer inspection, AWS appears to market its products and services specifically to the fossil fuel sector and its expansion plans. On a dedicated webpage titled Solutions for Oil and Gas, AWS explicitly promotes its ability to "optimize subsurface analysis," which is essential for faster decision-making in exploration.[40] AWS also features testimonials and recommendations from oil and gas companies such as Shell.[41] This active outreach to the fossil fuel sector is reflected in the fact that at least eight of the ten largest companies on Urgewald's oil and gas exclusion list have business relationships with AWS.

Box 3: A "Surveillance Pioneer" Implicated in Serious Controversies Surrounding Human Rights Abuses: Palantir

Palantir is a U.S.-based tech company specializing in big data integration and analytics. Its co-founder, tech billionaire Peter Thiel, is a highly controversial figure because of his anti-democratic views and activities. Palantir develops applications for government agencies, intelligence services, and militaries around the world. These applications are used to conduct surveillance, monitor civilian populations,[42] and identify military targets.[43]

Maven Smart System is one of the infrastructures developed by Palantir in cooperation with the U.S. military. It was used by the U.S. military, for example, to identify and select targets in the war against Iran, and has been linked to the bombing of a girls' school there and the subsequent deaths of more than 100 children.[44]

The use of Palantir's systems by U.S. Immigration and Customs Enforcement (ICE) is also highly controversial and has been criticized by Amnesty International for human rights abuses.[45] For ICE, Palantir reportedly links data from public and private sources, including location data from cell phone records and social media posts, and recommends individuals to ICE officers as targets for detention and deportation.[46]

Amazon Web Services maintains close business ties with Palantir and provides the company with important digital infrastructure.[47] Palantir also uses various AWS cloud services and AI models to analyze sensitive data in its software.[48]

This case not only demonstrates the close collaboration between AWS and a company allegedly linked to serious human rights violations; it also suggests that AWS's cloud services are what make Palantir and ICE's questionable surveillance of civilian populations possible in the first place.

AWS's lack of scruples is not limited to environmental and climate issues. The company shows the same lack of ethical restraint when it comes to human rights, serious corruption, and controversial weapons systems, as evidenced by its partnerships with controversial weapons and security companies such as Palantir (see Box 3). AWS works with at least 55 percent of the defense, security, and military companies identified by PAX as being of "high concern," including Palantir and Anduril (see Box 4). Their weapons, surveillance, and analytics systems are not sufficiently protected against misuse, and their deployment has been documented in numerous military operations that violate international law. They are also increasingly used to expand power structures in totalitarian regimes.

Box 4: Controversial Weapons Systems: Autonomous AI-Driven War Drones Developed by Anduril

Anduril is a U.S. startup that develops autonomous weapons systems for the U.S. military and its allies. These include drones capable of creating 3D terrain maps of warzones and autonomously identifying targets.[49] What makes these systems particularly controversial is that AI could potentially make life-or-death decisions involving lethal autonomous weapons systems (LAWS) without meaningful human control.[50] PAX therefore lists Anduril as a "high concern" company.

In addition, the company has deep financial and political ties to the New Right and other anti-democratic movements in the United States, including through some of its investors, such as Palantir's Peter Thiel and U.S. Vice President JD Vance.[51] The U.S. military is one of Anduril's major clients and has deployed AI drones developed by Anduril in its war of aggression against Iran.[52]

This review has found evidence of a close partnership between Amazon Web Services and Anduril. AWS provides the startup with secure cloud infrastructure,[53] while Anduril relies on AWS cloud services and AI models to develop and deploy its autonomous weapons.[54] According to employees at AWS and Anduril, this also includes using these models for AI-powered decision-making in combat operations.[55]

This case demonstrates the collaboration between AWS and a developer of highly controversial weapons systems. It also suggests that by providing its AI models, AWS does more than support this lethal technology; it helps make it possible in the first place.

It is important to note that the review of AWS's business relationships for this study was necessarily limited and relied solely on publicly available data. **This means that, despite the striking number of controversial business relationships identified, the findings document only the tip of the iceberg. The actual number of controversial business relationships maintained by AWS is therefore likely much higher.**

Nevertheless, the findings are clear. As AWS does not have meaningful environmental or ethical minimum standards governing the use of its digital services, it does business with companies without adequately considering the societal impacts of their business conduct. This conclusion underscores the need for robust voluntary ethical commitments that protect companies such as AWS from becoming enablers of business models that cause extreme harm to society and the environment.

5. Proposed Environmental and Ethical Minimum Standards for Cloud Providers Such as AWS

The review above shows that despite the remaining limitations of its voluntary ethical commitments, the financial sector is far ahead of the tech sector. The approach used by financial institutions to address their ethical corporate responsibility therefore provides a useful peer benchmark. Modeled on the ethical guidelines established in that sector, the following framework can be proposed to support effective voluntary ethical commitments by Big Tech companies such as Amazon's subsidiary, AWS. Such a framework could help prevent Big Tech from becoming complicit in environmental destruction and human rights violations.[56]

Minimum standards for the environmentally and ethically responsible use of technology by digital companies[57]

Providers of digital services must acknowledge that cloud infrastructure is not neutral. It has societal impacts, and Big Tech therefore bears responsibility for how these services are used. Providers of digital services, including cloud services, should therefore commit to ensuring that none of their services facilitate or enable environmental destruction, human rights violations, or threats to democracy. Specifically, companies should make the following voluntary commitments:

1. Restrict the provision of cloud infrastructure where its use would enable or facilitate the following:

    a. **Fossil fuel expansion and climate destruction –** No provision of computing power or cloud services for fossil fuel expansion, companies implicated in deforestation, or companies involved in serious environmental controversies.
    b. **Human rights violations –** No provision of services to companies involved in serious human rights controversies, violations of personal integrity through (digital) violence, or violations of Indigenous peoples' rights.
    c. **Particularly problematic military uses –** No provision of services for applications involving lethal autonomous weapons systems, kinetic attack planning, and internationally banned or highly controversial weapons.
    d. **Unacceptable surveillance and AI practices –** No provision of services for practices comparable to the unacceptable-risk categories covered by the European Union's AI Act, including social scoring, predictive policing, biometric scraping, emotion recognition in the workplace, and real-time facial recognition in public spaces.
    e. **Violations of democratic integrity and disinformation**

2. Align company operations, including data centers and AI models, with environmental protection, human rights, and democratic principles:

    a. **Renewable energy and environmental operating standards –** New computing capacity must run exclusively on genuine renewable electricity.
    b. **Circular and fair supply chains –** Companies must source critical raw materials responsibly, reuse or properly recycle decommissioned hardware, and exclude child labor, forced labor and exploitative clickwork from their supply chains.
    c. **Political integrity instead of regulatory obstruction –** Companies must refrain from actively undermining climate and tech regulation. They must disclose their lobbying budgets, networks, and any high-level political meetings.
    d. **Independent oversight and internal accountability –** An external ethics council should review critical business relationships; high-risk clients must provide human rights impact assessments; and employees must have the protected right to refuse work on unethical projects.

6. Conclusion

Responsible business conduct is a widely recognized element of modern corporate management. Economic history has also made clear that technological innovations, and the industries that develop them, are particularly vulnerable to misuse when profit interests override responsibility to the public good. In response to these societal risks, extensive control systems have been established in high-risk sectors such as pharmaceuticals and finance. Their purpose is to prevent innovations from being used solely for profit in ways that harm society, the environment, and democracy.

Although the societal risks associated with advances in the relatively young tech sector are now sufficiently clear and well documented, Big Tech remains largely underregulated. Compounding the problem, tech companies have amassed an unprecedented degree of economic and political power while continuing to reject any voluntary commitment to environmental and ethical minimum standards.

The devastating consequences of this lack of voluntary ethical commitment are clearly evident in the findings of this study. **The AWS case study shows that the company maintains business relationships with at least 70 companies that Europe's largest investor, Norway's sovereign wealth fund, excludes on ethical grounds. Overall, AWS maintains business relationships with 100 of the 263 companies implicated in serious environmental and human rights controversies, representing 38 percent of the companies reviewed.**

The findings suggest that AWS sets a remarkably low bar for whom it chooses to do business with. It appears very willing to work with companies that other actors systematically avoid because of misconduct. **By providing these companies with digital infrastructure and cloud services, AWS enables and therefore supports destructive activities that harm people, the environment, and democracy.**

AWS must acknowledge its responsibility for its toxic business relationships and establish and implement adequate environmental and ethical minimum standards to ensure that its digital services are not used for environmental destruction, human rights violations, or the erosion of democracy.[58]

Appendix

Table A1: Overview of the companies on the Norges, urgewald, and PAX exclusion lists.

I Exclusion list of Norway's sovereign wealth fund (managed by Norges)	
Grounds for exclusion	**Companies**
Serious environmental harm	Astra International Tbk PT Barrick Gold Corp Beijing Tong Ren Tang Chinese Medicine Co Ltd Bharat Heavy Electricals Ltd China Traditional Chinese Medicine Holdings Co Ltd Duke Energy Corp ElSewedy Electric Co Eramet SA Evergreen Marine Corp Taiwan Ltd Freeport-McMoRan Inc Genting Bhd GMK Norilskiy Nickel PAO Grand Pharmaceutical Group Ltd Halcyon Agri Corp Ltd Jardine Cycle & Carriage Ltd Jardine Matheson Holdings Ltd Korea Line Corp Marfrig Global Foods SA NHPC Ltd Pan Ocean Co Ltd POSCO Holdings Inc Posco International Corp Power Construction Corp of China Ltd Ta Ann Holdings Bhd Tianjin Pharmaceutical Da Re Tang Group Corp Ltd Tong Ren Tang Technologies Co Ltd Vale SA Vedanta Ltd Volcan Cia Minera SAA WTK Holdings Bhd Young Poong Corp Yunnan Baiyao Group Co Ltd Zijin Mining Group Co Ltd
Production of controversial weapons systems / Export to war zones	AviChina Industry & Technology Co Ltd BAE Systems Plc Bharat Electronics Ltd Boeing Co/The BWX Technologies Inc Fluor Corp General Dynamics Corp Honeywell International Inc Huntington Ingalls Industries Inc Jacobs Solutions Inc L3Harris Technologies Inc Larsen & Toubro Ltd

	Lockheed Martin Corp Northrop Grumman Corp Poongsan Corp Safran SA Textron Inc Weichai Power Co Ltd
Gross corruption and corporate crime, as well as serious human rights violations and violations of fundamental ethical norms	Adani Green Energy Adani Ports and Special Economic Zone Ltd Ashtrom Group Ltd Bank Hapoalim BM Bank Leumi Le-Israel BM Bezeq The Israeli Telecommunication Corp Ltd Bollore SE Bombardier Inc Caterpillar Inc. Centrais Eletricas Brasileiras SA China State Construction Engineering Corp Ltd Cognyte Software Ltd Compagnie de l'Odet SE Danya Cebus Ltd Delek Group Ltd Ecopetrol SA Elbit Systems Ltd Elco Ltd Electra Ltd/Israel Eramet SA Evergreen Marine Corp Taiwan Ltd Evraz PLC FIBI Holdings Ltd Fincantieri SpA First International Bank of Israel Ltd/The Formosa Chemicals & Fibre Corp Formosa Taffeta Co Ltd GAIL India Ltd Honeys Holdings Co Ltd JBS S/A KDDI Corp Korea Gas Corp Korea Line Corp Li Ning Co Ltd Lu Thai Textile Co Ltd Mivne Real Estate KD Ltd Mizrahi Tefahot Bank Ltd Oil & Natural Gas Corp Ltd Page Industries Ltd Pan Ocean Co Ltd Paz Retail And Energy Ltd Petrofac Ltd Petroleos Mexicanos Prosegur Cia de Seguridad SA PTT Oil & Retail Business PCL PTT PCL Semen Indonesia Persero Tbk PT Shapir Engineering and Industry Ltd Shikun & Binui Ltd Sumitomo Corp Toronto-Dominion Bank/The ZTE Corp Zuari Agro Chemicals Ltd

Production of addictive substances	KT&G Corp Philip Morris Cr AS Philip Morris International Inc RLX Technology Inc Scandinavian Tobacco Group A/S Shanghai Industrial Holdings Ltd Tilray Brands Inc Turning Point Brands Inc Universal Corp/VA Vector Group Ltd
Coal companies and other major drivers of climate change	Aboitiz Power Corp AES Andes SA AES Corp/The AGL Energy Ltd ALLETE Inc Alliant Energy Corp Ameren Corp American Electric Power Co Inc Canadian Natural Resources Ltd Cenovus Energy Inc CESC Ltd CEZ AS China Coal Energy Co Ltd China Power International Development Ltd China Resources Power Holdings Co Ltd China Shenhua Energy Co Ltd Chugoku Electric Power Co Inc/The CLP Holdings Ltd Coal India Ltd CONSOL Energy Inc Datang International Power Generation Co Ltd Dian Swastatika Sentosa Tbk PT DMCI Holdings Inc DTE Energy Co Electric Power Development Co Ltd Electricity Generating PCL Emera Inc Engie Energia Chile SA Evergy Inc Exxaro Resources Ltd FirstEnergy Corp Glencore PLC Great River Energy Guangdong Electric Power Development Co Ltd Gujarat Mineral Development Corp Ltd HK Electric Investments & HK Electric Investments Ltd Hokkaido Electric Power Co Inc Hokuriku Electric Power Co Huadian Energy Co Ltd Huadian Power International Corp Ltd Huaneng Power International Inc IDACORP Inc Imperial Oil Ltd Inner Mongolia Yitai Coal Co Ltd Korea Electric Power Corp Lubelski Wegiel Bogdanka SA Malakoff Corp Bhd MGE Energy Inc New Hope Corp Ltd

	NRG Energy Inc NTPC Ltd Okinawa Electric Power Co Inc/The Otter Tail Corp PacifiCorp Peabody Energy Corp PGE Polska Grupa Energetyczna SA Reliance Infrastructure Ltd Reliance Power Ltd Sasol Ltd SDIC Power Holdings Co Ltd Shikoku Electric Power Co Inc Suncor Energy Inc Tata Power Co Ltd/The Tenaga Nasional Bhd Tri-State Generation and Transmission Association Inc Washington H Soul Pattinson & Co Ltd WEC Energy Group Inc Whitehaven Coal Ltd Xcel Energy Inc Yankuang Energy Group Co Ltd
II urgewald exclusion list of companies implicated in serious climate controversies	
Grounds for exclusion	**Companies**
Global Coal Exit List (GCEL)	The list comprises nearly 3,000 publicly and privately owned companies responsible for more than 90 percent of global thermal production and global coal-fired capacity. The list includes: Adani Duke Energy EPH Eskom Glencore KEPCO Peabody San Miguel
Global Oil and Gas Exit List (GOGEL)	GOGEL 2025 comprises some 1,800 companies responsible for 95 percent of global oil and gas production. They are linked to particular controversies, such as unconventional oil extraction and exploration of new fossil fuel reserves incompatible with the Paris Agreement. The list includes: Saudi Aramco Exxon Mobil Corporation Chevron Petroleo Brasileiro SA – Petrobras China National Petroleum Corporation (CNPC) BP plc Shell plc TotalEnergies SE Petroleos Mexicanos (Pemex) Eni SpA

III PAX exclusion lists of companies involved in controversial weapons systems	
Grounds for exclusion	**Companies**
PAX high-concern list **Companies involved in the production and deployment of relevant autonomous weapons technologies without a clear policy on human control (lethal autonomous weapons systems, LAWS).**	AeroVironment Airbus AVIC Boeing CASC Dassault DefendTex DoDAAM Systems Dynetics Elbit Systems FLIR Systems General Atomics Hanwha IAI KNDS Kongsberg Kratos Leidos Lockheed Martin NCSIST NORINCO Rafael Raytheon Rostec (Kalashnikov; Ural vagonzavod) Safran STM Swiftships Textron United Aircraft (Sukhoi) WB Group
PAX high-concern list **Tech companies whose technologies are relevant to LAWS and that collaborate with companies on military projects involving LAWS.**	AerialX Airspace Systems Amazon Anduril Industries Blue Bear Systems Citadel Defense Clarifai Corenova Technologies EarthCube Heron Systems Intel Microsoft Montvieux Oracle Palantir Roboteam SenseTime Shield AI SparkCognition Synesis Yitu

Table A2: Identified business relationships between AWS and companies on the Norges exclusion list and the supplementary exclusion list

Norges exclusion list

Companies	Business relationship with AWS
Aboitiz Power Corp	Yes
Adani Green Energy	Yes
Adani Ports and SEZ Ltd	Yes
AES Corp/The	Yes
Airbus SE	Yes
Ameren Corp	Yes
American Electric Power Co Inc	Yes
Astra International Tbk PT	Yes
BAE Systems Plc	Yes
Bank Leumi Le-Israel BM	Yes
Berkshire Hathaway Energy Co	Yes
Bezeq Telecommunication Corp Ltd	Yes
Boeing Co/The	Yes
Bombardier Inc	Yes
British American Tobacco Plc	Yes
BWX Technologies Inc	Yes
Canopy Growth Corp	Yes
Caterpillar Inc.	Yes
Cenovus Energy Inc	Yes
DTE Energy Co	Yes
Duke Energy Corp	Yes
Electra Ltd/Israel	Yes
Fluor Corp	Yes
Freeport-McMoRan Inc	Yes
General Dynamics Corp	Yes
Honeywell International Inc	Yes
Jacobs Solutions Inc	Yes
JBS S/A	Yes
KDDI Corp	Yes
L3Harris Technologies Inc	Yes
Larsen & Toubro Ltd	Yes
Lockheed Martin Corp	Yes
Northrop Grumman Corp	Yes
Petrofac Ltd	Yes
Philip Morris International Inc	Yes
POSCO Holdings Inc	Yes
PTT Oil & Retail Business PCL	Yes
PTT PCL	Yes
RWE AG	Yes
Safran SA	Yes
Semen Indonesia Persero Tbk PT	Yes
Sumitomo Corp	Yes
Suncor Energy Inc	Yes
Tata Power Co Ltd/The	Yes
Textron Inc	Yes
Turning Point Brands Inc	Yes
WEC Energy Group Inc	Yes
Xcel Energy Inc	Yes
AGL Energy Ltd	likely
Altria Group Inc	likely
Aurora Cannabis Inc	likely
British American Tobacco Malaysia Bhd	likely
Cognyte Software Ltd	likely
Elbit Systems Ltd	likely
ElSewedy Electric Co	likely
Fincantieri SpA	likely
FirstEnergy Corp	likely
Glencore PLC	likely
MidAmerican Energy Co	likely
NorthWestern Corp	likely
NRG Energy Inc	likely
PacifiCorp	likely
Prosegur Cia de Seguridad SA	likely
Scandinavian Tobacco Group A/S	likely
Tilray Brands Inc	likely
Tri-State Generation and Transmission Association Inc	likely
Uniper SE	likely
Vale SA	likely
Vistra Corp	likely
ZTE Corp	likely

Supplementary exclusion list

PAX high-concern list (Slippery Slope)	
Companies	**Business relationship with AWS**
AeroVironment	Yes
Airbus	Yes
Boeing	Yes
Dynetics	Yes
General Atomics	Yes
Kongsberg	Yes
Kratos	Yes
Leidos	Yes
Lockheed Martin	Yes
Raytheon	Yes
Safran	Yes
Textron	Yes
Elbit Systems	likely
Hanwha	likely
IAI – Israel Aerospace Industries	likely
Rafael Advanced Defense Systems	likely

PAX high-concern list (Don't be Evil)	
PAX high-concern list (Don't be Evil)	**Business relationship with AWS**
Amazon	Yes
Anduril Industries	Yes
Clarifai	Yes
EarthCube	Yes
Intel	Yes
Microsoft	Yes
Oracle	Yes
Palantir	Yes
Shield AI	Yes
SparkCognition	Yes
Montvieux	likely
SenseTime	likely

urgewald	
urgewald	**Business relationship with AWS**
Adani	Yes
Duke Energy	Yes
Glencore	likely
Exxon Mobil Corporation	Yes
Petroleo Brasileiro SA – Petrobras	Yes
BP plc	Yes
Shell plc	Yes
TotalEnergies SE	Yes
Eni SpA	Yes
Saudi Aramco	Yes
China National Petroleum Corporation	likely

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23 The standoff between the U.S. Department of Defense and the AI company Anthropic illustrates that individual tech companies are increasingly becoming aware of their specific ethical responsibilities. In this case, Anthropic argued that complying with the Defense Department's demand to allow "any lawful use" of its technology would violate its founding safety principles and expose its technology to potential abuse. In doing so, **Anthropic drew an ethical boundary that others in the industry must decide whether to cross.** The Guardian. (2026, March 13). Anthropic-Pentagon battle shows how Big Tech has reversed course on AI and war.

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34 It makes sense to exclude Chinese companies, as they are generally expected to rely on domestic infrastructure. AWS has a very small market share in China: it is not permitted to operate there under its own name, and the Chinese market is dominated by domestic providers. This is reflected in the TheirStack database, where 27 of the 28 controversial Chinese companies included on the Norges exclusion list are not listed.

35 The privacy policy on the JBS website states: "Your personal data may be stored on own servers or operated by third-party service providers contracted by JBS, including cloud computing services. Currently, we use Amazon Web Services (AWS) as our infrastructure provider. AWS servers may be located in the U.S. or in other countries." See JBS. Privacy policy. https://ir.jbsglobal.com/privacy-policy/ This is an indication of a business relationship identified through online research and serves as an example of the type of evidence used to identify collaboration between AWS and companies on the exclusion lists.

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55 Announcement made by AWS employees and an Anduril employee on LinkedIn.

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