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An Exploration of Climate Risks as Systemic Risks under the Digital Services Act

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Abstract

The internet infrastructure and business models are proving to be resource-intensive, which is having a detrimental impact on the climate and the environment. Furthermore, a small group of dominant service providers control nearly all online activity. This thesis explores how the Digital Services Act (DSA) can contribute to reducing climate risks through its systemic risk regulation framework. More specifically, it focuses on direct climate risks relating to material environmental impacts, for example, stemming from emissions from platform operations and infrastructure.

Placing this discussion within the context of evolving environmental protection within the EU through sustainable as well as digital regulation, and the developments of fundamental rights in this sense, shows the broader context which is related to the way in which environmental protection can be incorporated into platform regulation under the DSA. Additionally, by examining the potential of systemic risk provisions for addressing direct climate risks, this thesis enriches the ongoing discourse on how to define and scope systemic risks under the DSA. Through a textual analysis of Article 34, it is shown that the DSA can integrate the assessment of climate risks under its provisions, even though it does not explicitly refer to them. The broader regulatory context of the DSA, the online versus offline debate, and the broad nature of systemic risk support this finding. Furthermore, an examination of published systemic risk reports highlights the current and likely future relevance of including environmental factors, particularly in the context of public health and consumer protection. The analysis also sheds light on practical ways to put the DSA framework into practice, addressing climate risk mitigation under Article 35 DSA, and builds upon the broader framework that encompasses relevant actors and offers practical solutions, including delegated acts, voluntary standards, and codes of conduct.

By holding the largest platforms accountable, the DSA can address the direct climate risks associated with their activities. By building on fundamental rights, such as the right to private life, and by drawing on the broader EU regulatory framework of the Charter and the DSA's provisions, a shift towards environmental protection through platform regulation can be put in place.

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List of Abbreviations

Abbreviation	Definition
ACM	Authority for Consumers and Markets
AI	Artificial Intelligence
AI Act	Artificial Intelligence Act
AVMSD	Audiovisual Media Services Directive
Board	European Board for Digital Services
Charter	Charter of Fundamental Rights of the European Union
Commission	European Commission
CSRD	Corporate Sustainability Reporting Directive
CSDDD	Corporate Sustainability Due Diligence Directive
DSA	Digital Services Act
DSC	Digital Service Coordinator
ECHR	European Convention on Human Rights
ECL	European Climate Law
ECtHR	European Court of Human Rights
EED	Energy Efficiency Directive
ESG	Environmental, Social and Governance
EU	European Union
GDPR	General Data Protection Regulation
GHG	Atmospheric Greenhouse Gas
GPAI	General Purpose AI
HRAI	High Risk AI
ICT	Information and Communication Technology
IPCC	Intergovernmental Panel on Climate Change
SDGs	Sustainable Development Goals
TFEU	Treaty on the Functioning of the European Union
UNGP	United Nations Guiding Principles on Business and Human Rights
VLOP	Very Large Online Platform
VLOSE	Very Large Online Search Engine

Glossary of Terms

Term	Definition
Climate Risks	The ECtHR, through its interpretation of Article 8 ECHR, has recognised “a right to effective protection by public authorities against the serious adverse effects of climate change on the life, health, well-being, and quality of life of individuals”. The term 'climate risks' will be used to refer to those risks associated with the adverse effects of climate change as identified by the ECtHR.
Direct Climate Impact	This term refers to climate risks associated with the material configuration of digital services. For example, greenhouse gas emissions resulting from platform operations.
Environmental Protection	Article 37 of the EU Charter establishes self-standing protection of the environment, explicitly referring to "protection of the environment." In addition, the Charter incorporates both substantive and procedural rights recognised under the ECHR. Thus, "protection of the environment" encompasses, here, the guarantees provided by the case law of the ECtHR under Article 8 of the Convention and Article 7 of the EU Charter, and the protection provided by Article 37 of the EU Charter.
Systemic Risks	Following the formulation and meaning provided in the DSA, systemic risks refer to societal risks and broader societal impacts associated with the use and functioning of services. These risks are considered systemic when they have the potential to cause large-scale harm to individuals or disrupt systems that are essential for governance and the proper functioning of society.

Very Large Online Platforms	An online platform with at least 45 million monthly active users within the EU, as defined under the Digital Services Act.
Very Large Online Search Engines	An online search engine with at least 45 million monthly active users within the EU, as defined under the Digital Services Act.

1 Introduction

The Internet has undergone a significant transformation and has arguably transformed into an oligopolistic platform economy.[1] Within this economy, almost all online activity is mediated by a concentrated group of service providers.[2] This shift has not only reshaped the Internet but has also redefined modes of production and consumption.[3] It is becoming increasingly clear that the resource-intensive nature of internet infrastructure and business models is having a detrimental impact on the climate and the environment.[4] Additionally, digital infrastructures and services consist of both an immaterial layer, encompassing computational processes, policies, and ideologies, and a material layer, comprising data centres, cables, routers, and devices, which together have profound environmental and climatic impacts.[5] Within this realm, the Digital Services Act (DSA)[6] provides a means of directing a rapidly evolving industry not just towards the pursuit of profit, but also towards broader concerns or 'the bigger picture'.[7] The first recital of the DSA, while aiming at such services, reads that their increased use has: "resulted in new risks and challenges for individual recipients of the relevant service, companies and society as a whole".[8] The DSA has an important status and is, due to both its political and legal force, also perceived as being able in providing an EU Digital Rights Charter.[9]

The DSA's requirements ascend from basic obligations for all intermediary service providers to the most demanding expectations that are set for the largest players, namely the Very Large Online Platforms (VLOPs) and Very Large Online Search Engines (VLOSEs). These provisions are of specific relevance as these largest platforms are often linked to notable environmental costs.[10] However, while the climate impact of the ICT sector is significant and growing, driven by platform activities and advances in artificial intelligence,[11] environmental

[1] Elettra Bietti, 'A Genealogy of Digital Platform Regulation' (2023) 7 Georgetown Law Technology Review 1, 28.
[2] Chloé Berthélémy and Jan Penfrat, 'Platform Regulation Done Right. EDRi Position Paper on the EU Digital Services Act.' (2020) 9 <https://edri.org/wp-content/uploads/2020/04/DSA_EDRiPositionPaper.pdf>.
[3] Bietti (n 1) 24.
[4] Fieke Jansen and others, 'The Climate Crisis Is a Digital Rights Crisis: Exploring the Civil-Society Framing of Two Intersecting Disasters', *Computing within Limits* (LIMITS 2023) 1 <https://limits.pubpub.org/pub/8544yai8/release/1>.
[5] ibid 2.
[6] Regulation (EU) 2022/2065 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act) [2022] OJ L277/1, recital 1.
[7] Martin Husovec, *Principles of the Digital Services Act* (1st edn, Oxford University Press 2024) 317 <https://academic.oup.com/book/58088>.
[8] Recital 1 DSA.
[9] Husovec, *Principles of the Digital Services Act* (n 6) 391.
[10] Ilaria Buri and Rachel Griffin, 'Platform Regulation in Times of Environmental Collapse: The Digital Services Act and the Climate Emergency' [2024] SSRN Electronic Journal 1 <https://www.ssrn.com/abstract=4867333>.
[11] Xinchuchu Gao, 'The EU's Twin Transitions towards Sustainability and Digital Leadership: A Coherent or Fragmented Policy Field?' Regional Studies 1, 1.

dimensions are not addressed within the DSA. Within the broader legal discourse surrounding platform regulation, notions such as the 'greening the DSA' have emerged.[12] By prioritising sustainability in the implementation of the DSA, these powerful platforms could, by making small adjustments, have a significant environmental impact on the industry as a whole.[13] Several reasons have been identified for why it is important to look at the DSA; it is more comprehensive than comparable regulation and can target companies with important environmental and industrial impacts through its systemic risk framework, which provides for additional requirements for the largest online platforms. Moreover, it provides a directly applicable framework to drive technological sustainability.[14]

Buri and Griffin have put forth various complementary perspectives on the role of VLOPs and VLOSEs regarding climate risks. First, platforms function as economic actors whose business activities contribute both directly and indirectly to climate impacts. Direct climate impacts include, for example, emissions from platform operations, the production of platform infrastructure, and the manufacture of consumer electronics.[15] Indirectly, platforms influence "environmental impacts through their influence on consumer behaviour and other organisations' business practices".[16] Stronger sustainability obligations in the DSA are arguably essential for platforms to guide consumers towards environmentally and socially responsible choices.[17] Second, platforms act as intermediaries in political debates and social movements, including discourse and activism on climate issues.[18] In this sense, the DSA and its obligations are seen as relevant in combating climate disinformation, ranging from greenwashing PR campaigns to targeted harassment of climate activists.[19] Questions about the role of platforms in addressing climate risk raise some interesting considerations, such as whether platforms could be required to ban fossil fuel advertising, similar to existing bans on tobacco advertising.

While these are important questions, this thesis will focus primarily on direct impacts, excluding the role of VLOPs and VLOSEs as intermediaries and their influence on consumer

[12] Christoph Busch [@christophbusch], '"Greening the #DSA: A More Sustainable Approach to Platform Regulation?", <https://x.com/christophbusch/status/1721985764311945480>; Rachel Griffin, 'What Does Digital Policy Have to Do with Climate? A Great Deal' (*Centre for International Governance Innovation*) <https://www.cigionline.org/articles/what-does-digital-policy-have-to-do-with-climate-a-great-deal/>.

[13] Griffin, 'What Does Digital Policy Have to Do with Climate?' (n 10) 2.

[14] Rachel Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' 3 <https://opus4.kobv.de/opus4-hsog/frontdoor/index/index/docId/5075>.

[15] Buri and Griffin (n 13) 15.

[16] ibid 16.

[17] Otmar Lell, 'Nachhaltigkeits- und verbraucherorientiertes Systemdesign für digitale Plattformen' 49.

[18] Buri and Griffin (n 13) 4.

[19] Jansen and others (n 10) 4.

behaviour. This delineation makes it possible to focus on platform responsibilities regarding their specific material environmental impacts, such as emissions from platform operations and infrastructure. In this context, relevant considerations include ensuring that platforms are required to provide researchers with access to relevant information that could lead to a deeper understanding of their environmental impacts. Griffin is one of the first to highlight that the DSA already imposes an obligation on companies to take reasonable steps to mitigate their environmental impacts.[20]

1.1 Societal and Academic Relevance

In recent years, the EU has introduced a substantial body of legislation, particularly in the areas of digitalisation and sustainability. To address the disconnect between environmental and digital policies within the European Union, a more integrated approach is necessary.[21] This thesis contributes to this debate by examining the integration of climate risks under the systemic risk provisions of the DSA, situating this analysis within the broader nexus of the digital and 'green' transitions reflected in European policy and the growing attention to environmental protection in several legal fields such as criminal law and the recognition of ecocide as a crime and human rights law. Although the DSA does not explicitly mention climate in its text, this thesis will demonstrate that it could be included. Also contributing to the ambiguity within academic and practical understandings of the scope of systemic risks under the DSA. As the Intergovernmental Panel on Climate Change (IPCC) warns of a "short and rapidly closing window of opportunity", the United Nations Environment Programme (UNEP) stresses that only urgent, system-wide change can avert climate catastrophe after decades of delay.[22] Especially since there is clear scientific evidence that we are living in a climate crisis, urgent changes to ensure a just and sustainable society are required.[23] From a societal perspective, it is essential to address these irreversible climate risks. As the DSA is still in its early stages of implementation, this analysis provides insights for platform operators, academics, and policymakers on responsibility among the biggest platform operators for environmental protection.

[20] Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' (n 12).
[21] Buri and Griffin (n 13) 26.
[22] Julia Dehm, 'Beyond Climate Due Diligence: Fossil Fuels, "Red Lines" and Reparations' (2023) 8 Business and Human Rights Journal 151, 153.
[23] 'Green Screen: Digital Rights and Climate Justice – An Event Report - Ariadne Network' 3 <https://www.ariadne-network.eu/resource/green-screen-digital-rights-and-climate-justice-an-event-report/>.

1.2 Research Question

The investigation in this thesis will be addressed through the following main research question:

How can the Digital Services Act contribute to environmental protection by mitigating climate risks through its systemic risk regulatory framework governing online platforms?

An answer to this question draws from the following sub-questions:

1. What constitutes sustainability regulation in the European Union, and how does this relate to platform regulation?
2. How does the DSA regulate the assessment of systemic risks of online platforms?
3. How should the DSA, with its systemic risk mitigation measures, be operationalised to advance environmental protection and reduce climate risks?

The first descriptive sub-question, addressed in Chapter 2, examines the role of fundamental rights in environmental and climate protection, European Union (EU) environmental policy, and relevant sustainability and technology regulation in relation to online platforms. It also briefly discusses other legislation in the technology sector that, while silent on these issues, has been analysed by scholars for its potential to operationalise environmental protection provisions.

The second, more evaluative sub-question, explored in Chapter 3, examines how the DSA regulates platforms and analyses the DSA's potential to address climate risks, even in the absence of explicit references. To provide the necessary context for this evaluation, it discusses the establishment of the DSA, its tiered regulatory approach, and the different types of VLOPs and VLOSEs it regulates, as well as their different climate impacts. Most importantly, it analyses the system of systemic risk assessment and discusses the online-offline dichotomy.

The final normative sub-question, analysed in Chapter 4, focuses on identifying ways to operationalise DSA for environmental protection. The chapter first discusses the existing regulatory framework for risk mitigation and examines how it can be applied to climate risks if climate risks are considered to fall within the scope of risk assessment. It then examines specific provisions, key actors, and opportunities for developing concrete solutions.

Finally, Chapter 5 concludes the thesis by addressing the main research question: How can the Digital Services Act contribute to environmental protection by mitigating climate risks through its systemic risk regulatory framework governing online platforms?

1.3 Methodology

This thesis uses a legal doctrinal methodology to analyse the current legal framework from an internal normative perspective.[24] The focus is on examining the elements of environmental protection and platform regulation as they are embedded in and derived from the legal system itself. [25] The doctrinal analysis aims to outline the existing legal framework, while taking a normative turn to suggest how the law should evolve.[26] Normative criteria, both internal and external, are used to develop a recommendation.[27] The analysis draws on environmental science, risk regulation theory, and a range of legal and non-legal academic literature, reports, and policies to provide a comprehensive basis. Throughout the text, the use of sustainability concepts, including environmental and climate risks, is consistent with EU terminology.

[24] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research' (2012) 17 Deakin Law Review 83.

[25] 'A Meta-Methodological Study of Dutch and Belgian PHDs in Social Security Law: Devising a Typology of Research Objectives as a Supporting Tool' 374 <https://journals.sagepub.com/doi/epdf/10.1177/138826271501700303>.

[26] Sanne Taekema, 'Theoretical and Normative Frameworks for Legal Research: Putting Theory into Practice' (14 February 2018) <https://papers.ssrn.com/abstract=3123667>.

[27] 'A Meta-Methodological Study of Dutch and Belgian PHDs in Social Security Law: Devising a Typology of Research Objectives as a Supporting Tool' (n 22) 376.

Chapter 2: Environmental Human Rights and Sustainability and Platform Regulation

The role of fundamental rights in environmental and climate litigation has increased over the years, both at national and international levels. Currently, hundreds of climate cases are pending in courts around the world.[28] Alongside this heightened focus on 'greening' human rights for the protection of the environment, there is growing "recognition of an independent right to a healthy environment".[29] Additionally, in recent years, examples have shown how legislation can create frameworks in which environmentally responsible practices are promoted and how a broader trend towards the integration of climate considerations into technology regulation is increasing. Both developments are relevant for framing a broader view of sustainability concepts and for understanding their potentially direct implications for platform regulation. This is especially so when considering the important role of fundamental rights in this context. This chapter explores these different elements, with a focus on their interconnections with the regulation of online platforms.

2.1 Human Rights and Environmental Protection

2.1.1 The Convention on Human Rights and the European Court of Human Rights

The European Court of Human Rights (ECtHR) has progressively interpreted and expanded existing rights under the European Convention on Human Rights (ECHR) to address environmental harm, particularly through the lens of Article 8 ECHR, the right to respect for private and family life and for home.[30] Through its evolving jurisprudence, the ECtHR has reinforced that environmental protection is an integral consideration within the human rights framework, no longer subservient to other rights, such as the right to property.[31] Furthermore, the Court has established that economic interests cannot override the right to a balanced and healthy environment.[32]

This growing recognition of environmental harm as a critical human rights issue culminated in the landmark decision: Verein KlimaSeniorinnen Schweiz et al. v. Switzerland.[33]

[28] For an overview, see Climate Case Chart, which provides two databases of climate change litigation: a global database which excludes U.S. cases, and a U.S. specific database.
[29] Elena Izyumenko, 'Intellectual Property in the Age of the Environmental Crisis: How Trademarks and Copyright Challenge the Human Right to a Healthy Environment' (2024) 55 IIC - International Review of Intellectual Property and Competition Law 864, 887.
[30] European Convention for the Protection of Human Rights and Fundamental Freedoms (European Convention on Human Rights, as amended) (ECHR), art 8.
[31] *Hamer v Belgium [extracts]* [2007] ECtHR 21861/03.
[32] *Bacila v Romania* [2010] ECtHR 19234/04.
[33] *Verein Klimaseniorinnen Schweiz and Others v Switzerland* [2024] ECtHR [GC] 53600/20.

Here the ECtHR recognised climate change as "one of the most pressing issues of our times" and that it poses a threat to human rights, more specifically to Article 8 ECHR.[34] The ECtHR considered the IPCC report regarding 1.5 degrees Celsius warming, emphasising that the risks associated with climate change would be significantly reduced if the rise in global temperature limits to 1.5 degrees above 'pre-industrial levels', while also explicitly acknowledging that current global mitigation efforts fall short of achieving this target.[35] While there is a general consensus that the ruling has significant implications, some have taken a more cautious stance, suggesting its effects require more time to crystallise.[36]

The approach has been subject to criticism and is not without its limitations.[37] For example, it appears less effective for global issues which exceed national borders.[38] Additionally, the KlimaSeniorinnen judgment has generated political controversy. In Switzerland, in particular, the Strasbourg judges have faced accusations of judicial activism and overstepping into areas traditionally reserved for political decision-making.[39]

Nevertheless, this criticism has been countered with the argument that "inherent characteristics of democratic governance undermine effective responses to climate change, as democratic processes often focus on short-term gains and fail to adequately represent the interests of younger and future generations".[40] Izyumenko states that protecting the environment through the 'greening' of traditional human rights can offer the advantage of drawing on an extensive body of established jurisprudence on the application and interpretation of these rights.[41]

2.1.2 The Charter of Fundamental Rights of the European Union

It is important to note that the Charter of Fundamental Rights of the European Union[42] (Charter) rights corresponding to those protected under the ECHR must have the "same meaning and scope" and that Union law may provide more extensive protection.[43] Meaning that the Charter incorporates both substantive and procedural rights recognised under the ECHR, and through

[34] Evin Dalkilic, 'The Transformation of European Climate Litigation' (*Verfassungsblog*) 29 <https://verfassungsblog.de/books/>.
[35] EHP Brans and XW Vries, 'Concretisering van klimaatverplichtingen: de EHRM-uitspraak Verein KlimaSeniorinnen e.a./Zwitserland' (2024) 34 Maandblad voor Vermogensrecht 336, 337.
[36] The Transformation of European Climate Litigation (n 31) 195.
[37] Izyumenko (n 26) 883.
[38] ibid.
[39] The Transformation of European Climate Litigation (n 31) 14.
[40] *Verein Klimaseniorinnen Schweiz and Others v. Switzerland* (n 30) 420.
[41] Izyumenko (n 26) 883.
[42] Charter of Fundamental Rights of the European Union [2012] OJ C326/391.
[43] Article 52(3) Charter

Article 52(3) of the Charter, Article 7 of the Charter on the right to respect for private and family life corresponds to Article 8 ECHR.[44] Moreover, upon the accession of the EU to the ECHR, the Convention will be part of the EU legal order.[45] Following the discussion of the ECHR and its evolving role in climate adaptation, Article 37 of the Charter stands out as a stand-alone provision on environmental protection, which is absent from the ECHR.[46] The provision states: "A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development*"*.[47] This explicit recognition of environmental protection as a principle has led to the Charter being described as the most prominent European human rights instrument to provide self-standing environmental protection.[48] Article 37 Charter may provide a "more environmentally friendly interpretation of EU law, especially when courts balance conflicting rights and interests".[49]

Article 37 of the Charter is derived from both EU law, as well as the constitutions of certain Member States.[50] It also contains an articulation of the integration principle. Which is based on the recognition that progress in environmental protection cannot occur in isolation but must address developments in other policy fields that might undermine such progress.[51] This results in EU policies having to aim to enhance environmental quality, protect human health, and address global and regional issues, particularly climate change.[52] The principle of environmental integration in Article 37 of the Charter arguably extends beyond the field of environmental policy and any other specific area of EU law.[53] Its reference to "policies of the Union" could indicate that it primarily applies to and thus binds Union institutions, as the European Commission (Commission), in exercising their legislative functions.[54]

[44] Elisa Morgera and Gracia Marin-Duran, 'Commentary to Article 37 – Environmental Protection of the EU Charter of Fundamental Rights' (Social Science Research Network, 20 May 2021) 3 <https://papers.ssrn.com/abstract=3850154>.
[45] Folkert Wilman, Saulius Lukas Kaleda and Paul-John Loewenthal, *The EU Digital Services Act: A Commentary* (Oxford University Press 2024) 16.
[46] Jasper Krommendijk and Dirk Sanderink, 'The Role of Fundamental Rights in the Environmental Case Law of the CJEU' (2023) 2 European Law Open 616, 631.
[47] Article 37 Charter
[48] Izyumenko (n 26) 884.
[49] Krommendijk and Sanderink (n 42) 625.
[50] Morgera and Marin-Duran (n 40) 6.
[51] ibid 12.
[52] Ugo Pagallo, Jacopo Ciani Sciolla and Massimo Durante, 'The Environmental Challenges of AI in EU Law: Lessons Learned from the Artificial Intelligence Act (AIA) with Its Drawbacks' (2022) 16 Transforming Government: People, Process and Policy 359, 365.
[53] Morgera and Marin-Duran (n 40) 2.
[54] ibid.

As already mentioned, Article 37 of the Charter is formulated as a Charter principle.[55] Thus, the principle of environmental integration is not a fundamental right in the sense of its legal content.[56] Doctrinally, this would mean that the Charter does not grant individual rights to environmental protection through Article 37.[57] Within this context, questions arise regarding the extent to which EU political institutions are legally obligated to integrate environmental considerations into the policies of the EU, whether or not the principle of environmental integration is merely procedural or requires substantive integration, and how much discretion the EU legislator has in balancing environmental protection with conflicting policy objectives.[58] According to Morgera and Marin-Duran, the correct interpretation of the environmental integration principle requires EU decision-makers to systematically pursue environmental aims alongside sectoral objectives, demanding substantive integration without granting environmental protection clear precedence over other policy goals. [59]

However, over time the practical application of the integration principle has been highlighted by embedding environmental protection into relevant policies. For example, the European Climate Law (ECL), which will be discussed subsequently, explicitly references Article 37 of the Charter.[60] Article 37 of the Charter is more and more being recognized as having legal weight, and has been referred to as a "fundamental right to environmental protection".[61] It has also been posited that Article 37 of the Charter might even have a reflexive effect beyond the scope of EU law.[62] The potential of this article to 'green' EU law is even more significant given the EU's ambitious climate objectives and the argument that its scope extends beyond environmental legislation.[63] Article 37 of the EU Charter is therefore expected to play an increasingly prominent role, not only within the case-law of the Court of Justice of the European Union but also as an instrument for shaping the interpretation and implementation of EU law across various policy areas.[64] The specific potential in relation to platform regulation is discussed further in the next chapter, in which the important role of fundamental rights as

[55] Article 52(5) Charter
[56] ibid 16.
[57] Philipp Hacker, 'Sustainable AI Regulation' (1 June 2023) 16 <https://papers.ssrn.com/abstract=4467684>.
[58] Morgera and Marin-Duran (n 40) 17.
[59] ibid.
[60] Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (European Climate Law) [2021] OJ L243/1, recital 6.
[61] Izyumenko (n 26) 886.
[62] Krommendijk and Sanderink (n 42) 634.
[63] Josephine van Zeben, 'The Role of the EU Charter of Fundamental Rights in Climate Litigation' (2021) 22 German Law Journal 1499, 1505.
[64] Izyumenko (n 26) 887.

well as the principles under the Charter within the DSA are discussed. The significant climate impacts of AI, ICT, and technology in general prompt questions about how well current and proposed EU legislation accounts for these costs and risks.[65]

2.2 European Policy and Regulation

Restoring economic growth became the leitmotif of EU policy in the 2010s, leading to, among other things, a rewriting of environmental governance.[66] In 2019, the Commission introduced the European Green Deal as a new sustainable development strategy, leading to several supporting laws and initiatives.[67] As a key part of the Commission's plans to implement the UN's 2030 Agenda and the Sustainable Development Goals (SDGs), the European Green Deal aims to achieve climate neutrality and combat environmental degradation by 2050.[68] The ECL, in effect since 29 July 2021, enshrines this target by ensuring that EU policies align with the goal and that all sectors contribute to this.[69] Art. 1 of the ECL refers to the EU's 2050 climate neutrality mission as a "binding objective" of all measures to be taken at both Union and national level.[70]

With the entry into force of the Corporate Sustainability Reporting Directive[71] (CSRD) on 5 January 2023 and the Corporate Sustainability Due Diligence Directive[72] (CSDDD) on 25 July 2024, the EU regulatory framework on sustainability standard setting has evolved.[73] The CSRD, in line with the European Green Deal,[74] aims to standardise sustainability practices across Europe through its comprehensive set of audited environmental, social and governance indicators.[75] The CSRD increases transparency and accountability for companies, including online platforms, by requiring them to disclose climate-related risks and impacts. Insights from

[65] Hacker (n 52) 5.
[66] Kovacic and others, 'The Twin Green and Digital Transition: High-Level Policy or Science Fiction?' [2024] Environment and Planning E: Nature and Space 25148486241258046, 4.
[67] European Commission, 'The European Green Deal' (Communication) COM(2019) 640 final; Gao (n 9) 4.
[68] Reins and Wijns, 'The "Safe and Sustainable by Design" Concept – A Regulatory Approach for a More Sustainable Circular Economy in the European Union?' [2024] European Journal of Risk Regulation 1, 2.
[69] Recital 25 ECL
[70] Pagallo, Ciani Sciolla and Durante (n 48) 362.
[71] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC, and Directive 2013/34/EU, as regards corporate sustainability reporting (Text with EEA relevance) 2022.
[72] Directive (EU) 2024/1792 of the European Parliament and of the Council of 25 July 2024 on corporate sustainability due diligence and amending Directive (EU) 2019/1937 [2024] OJ L1792/1.
[73] Coenradie, 'ESG-Normering en het Nederlandse (Vestigings)Klimaat een overzicht van ontwikkelingen op het gebied van ESG-Regelgeving Anno 2024' 2024–5 Tijdschrift voor vennootschapsrecht, rechtspersonenrecht en ondernemingsbestuur 135, 135.
[74] Dehm (n 19) 159.
[75] Armisen, Uribe-Gil and Arimany-Serrat, 'Navigating Carbon Offsetting: How User Expertise Influences Digital Platform Engagement' (2024) 16 Sustainability 2171, 2.

the CSDDD's due diligence requirements could potentially assist in determining how platforms under the DSA identify and address climate risks, especially in mitigating systemic environmental harms caused by their operations. An interesting question is how the DSA, when applicable to climate risks, would align with this evolving European Environmental, Social and Governance (ESG) framework.

Additionally, the Energy Efficiency Directive (EED) adopted in September 2023 has, for the first time, focused on the energy consumption of data centres.[76] As it more generally requires large enterprises to carry out energy efficiency audits every four years, datacentre operators more specifically are required to collect, publicly disclose, and report data annually to an EU database, with this information deemed relevant for assessing the sustainability of both individual data centres and the sector as a whole.[77] Such provisions are particularly relevant for online platforms whose functionality depends on data centre infrastructure, with many of the largest platforms operating their own data centres. In the meantime, guidance has been published on the interpretation of Article 11 of the EED, which focuses more generally on energy management systems and audits that are relevant to meeting data centre-specific measures.[78] The guidelines emphasise the importance of aligning energy audits and energy management systems with recognised European and international standards and ensuring greater transparency by encouraging companies to publish the results of energy audits.[79]

As can be seen from the discussion of EU policies and regulation, a broader trend towards the integration of climate considerations into technology regulation is becoming increasingly apparent. A similar trend can also be found in legal academic literature through the incorporation of sustainability aspects into other regulatory frameworks surrounding technology, which are silent on the matter of environmental protection. For example, several provisions in the General Data Protection Regulation (GDPR)[80] have been discussed for their potential to provide opportunities in raising issues of sustainability and environmental costs, due to their open-ended wording.[81] Additionally, more materially, Izyumenko discusses the

[76] Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast) (Text with EEA relevance) 2023, Article 12.

[77] Kai Ebert and others, 'AI, Climate, and Regulation: From Data Centers to the AI Act' (arXiv, 9 October 2024) 4 <http://arxiv.org/abs/2410.06681>.

[78] Commission Recommendation (EU) 2024/2002 of 24 July 2024 setting out guidelines for the interpretation of Article 11 of Directive (EU) 2023/1791 of the European Parliament and of the Council as regards energy management systems and energy audits [2024] OJ LXXX/XX, notified as C(2024) 5155.

[79] Recommendation 2024/2002, recital 8.

[80] Regulation (EU) 2016/679 of the European Parliament and of the Council on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation) [2016] OJ L119/1.

[81] Hacker (n 52) 9.

hindrance of current intellectual property laws on sustainable reuse practices.[82] Also, it has been examined what role the Audiovisual Media Services Directive[83] can play through stating that audiovisual communications shall not "encourage behaviour grossly prejudicial to the protection of the environment".[84]

While these examples may not be directly applicable to the direct climate impacts of platforms, they show a movement towards interpretations of environmental protection within the field of technology regulation and regulation on digital rights. In this sense, it has also been argued that it should be a priority, while protecting digital rights and holding Big Tech to account, to support climate and environmental justice movements by bringing a justice-oriented lens to tech issues.[85] Additionally, in tackling the impacts of ICT more specifically, the implementation of more substantive targets and obligations, alongside general transparency obligations, is necessary to address climate risks.[86] Such calls for specificity are reflected in the EU Artificial Intelligence Act (AI Act), which marks a significant milestone as the first technology regulation to explicitly address the protection of the environment.

2.2.1 Artificial Intelligence Act

The AI Act, which came into force in August this year, is a precedent-setting piece of legislation, providing for the first technology-specific EU regulation to address issues of environmental protection and climate risks.[87] The stated purpose of the AI Act is to protect "health, safety and fundamental rights enshrined in the Charter, including democracy, the rule of law, and environmental protection".[88] For providers of general-purpose AI (GPAI) models with systemic risk and providers of high-risk AI (HRAI) systems, Article 95 lid 2 sub b of the AI Act mandates the assessment and minimisation of "the impact of AI systems on

[82] Izyumenko (n 26) 898.

[83] Directive (EU) 2018/1808 amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) [2018] OJ L303/69.

[84] Peter Rott, 'Problemlagen und Handlungsoptionen zur Einschränkung von manipulativen und konsumsteigernden Designs im Online-Shopping' 39.

[85] Becky Kazansky, 'At the Confluence of Digital Rights & Climate Justice' 43 <https://www.theengineroom.org/wp-content/uploads/2022/07/TER-Final-Report-07-07-22.pdf>.

[86] Ebert and others (n 71) 9.

[87] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) (Text with EEA relevance) 2024.

[88] Recital 1 and Article 1(1) AI Act

environmental sustainability, including as regards energy-efficient programming and techniques for the efficient design, training, and use of AI".[89]

While environmental protection is recognised as an objective, its actual place in risk management is arguably unclear.[90] Additionally, there do not appear to be any reporting requirements on efforts to mitigate environmental risks.[91] Thus, while the AI Act appears to take steps in the right direction and sets a precedent by explicitly incorporating environmental protection into technology regulation, it does not yet seem to offer a complete overall framework.[92] The relevance of this in the context of online platforms is further underlined by developments such as the increasing integration of AI into the services provided by these platforms, making it particularly relevant in this context due to its associated environmental impacts.

2.4 Subconclusion

This chapter explored the development of the 'greening' of human rights through ECtHR case law and recent ground-breaking developments in this context, which have a direct impact on the protection through the corresponding provision, Article 7 of the Charter, and the growing recognition of an independent right to environmental protection under Article 37 of the Charter, providing an important basis for further assessing the potential role of the DSA in addressing environmental protection. As an instrument for shaping the interpretation and implementation of EU law across various policy areas, Article 37 of the EU Charter is therefore expected to play an increasingly prominent role. It further examined key EU legislation, policies, and academic perspectives, highlighting how environmental protection is increasingly integrated into both sustainability and technology regulation. A key milestone here is the explicit recognition of environmental protection in the AI Act. These findings provide a contextual framework and illustrate the relevance of environmental considerations in platform regulation, setting the stage for the next discussion, which will focus on the possibilities offered by the systemic risk framework under the DSA in this sense.

[89] Article 95 lid 2 sub b AI Act
[90] Ebert and others (n 71) 10.
[91] ibid.
[92] ibid 6.

Chapter 3: Platform Regulation under the Digital Services Act

This chapter examines the DSA and its potential role in addressing climate-related risks in the regulation of online platforms. It assesses whether the DSA's systemic risk provisions can be used to mitigate the environmental impacts of VLOPs and VLOSEs, leaving aside aspects regarding content regulation but focusing on direct climate impacts. To establish this link, the chapter examines the overarching objectives of the DSA and considers the extent to which its systemic risk regulation provisions, in particular Article 34 DSA, could address climate risks and environmental protection. Environmental impacts must be recognised as systemic risks for VLOPs and VLOSEs to be required to assess them.[93] The DSA, however, makes no explicit reference to climate impacts or environmental protection. This analysis provides insight into the DSA's wording and the discussion regarding the online and offline environment to explore whether it covers climate impacts and environmental protection. This lays the foundation for a discussion on the mitigation measures in Article 35 of the DSA and the introduction of new risks in the next chapter.

3.1 Risk Regulation

Until recent years, the rapid expansion of the internet and digital services faced minimal regulatory scrutiny, also described as 'regulatory apathy'.[94] However, through several possible developments such as an unexpected increase in threats to democracy and fundamental rights[95], growing concerns about information capitalism and the environmental impacts of digital technology, critical perspectives have gained ground.[96] As indicated by the current risk-based regulatory approach, there has been a shift within the EU towards interventionist policies.[97] Risk regulation has become a central regulatory function in many settings.[98] This entails government agencies increasingly involving private entities in enforcement roles.[99] Risk can be described as an object of regulation, a justification for regulatory action, and a framework for shaping institutional structures.[100] Additionally, the definition of risk is inherently

[93] Buri and Griffin (n 13) 14.
[94] Bietti (n 1) 1.
[95] Ylenia Citino, 'Constitutional Avenues to Curbing Unrestrained Power of Very Large Online Platforms' (2024) Forum Transregionale Studien Working Papers 32/2024, 25.
[96] Bietti (n 1) 32.
[97] Giancarlo Frosio, 'From the E-Commerce Directive to the Digital Services Act' (Social Science Research Network, 3 August 2024) <https://papers.ssrn.com/abstract=4914816>.
[98] Jonathan B Wiener, 'Risk Regulation and Governance Institutions' (OECD 2010) 136 <https://www.oecd-ilibrary.org/governance/risk-and-regulatory-policy/risk-regulation-and-governance-institutions_9789264082939-9-en>.
[99] Frosio (n 88).
[100] Maria Weimer, 'Risk as a Regulatory Idea' in Maria Weimer, *Risk Regulation in the Internal Market* (1st edn, Oxford University PressOxford 2019) 24 <https://academic.oup.com/book/34889/chapter/298433121>.

political.[101] Which makes the framing of harms as risks and their solutions as risk regulation value-laden choices.[102] In addition, institutional aspects play a role in the selection of certain risks over others.[103]

The DSA establishes an annual cycle in which platforms' risk assessment and mitigation efforts are evaluated and adjusted.[104] This continuous adaptation emphasises that it entails an ongoing process.[105] Within the DSA, the word risk is mentioned 113 times and is generally defined as "new risks and challenges for individual recipients of the relevant service, companies and society as a whole".[106]

3.2 Fundamental Rights within the DSA

In its Explanatory Memorandum to the DSA, the Commission noted that since the adoption of the e-Commerce Directive,[107] new digital services have revolutionised the economy as well as daily life, while also introducing new difficulties for individual users and society as a whole.[108] With the increased presence of online services in our daily lives, new societal risks have emerged.[109] The main objective pursued by the DSA is the need to strike a fair balance between various fundamental rights and other interests at stake in the context of the provision of intermediary services.[110] As underscored in Article 1(1) DSA, the objective is to: "establish a safe, predictable, and trustworthy online environment that fosters innovation while ensuring the effective protection of fundamental rights as enshrined in the Charter". This would refer to all the fundamental rights protected by EU law.[111]

The DSA exists within a constitutional framework shaped by the Charter and national constitutional constraints, as seen in Recital 3 DSA.[112] Additionally, it addresses an area where

[101] Rachel Griffin, 'What Do We Talk about When We Talk about Risk? Risk Politics in the EU's Digital Services Act - DSA Observatory' (31 July 2024) <https://dsa-observatory.eu/2024/07/31/what-do-we-talk-about-when-we-talk-about-risk-risk-politics-in-the-eus-digital-services-act/>.
[102] Margot E Kaminski, 'Regulating the Risks of AI' (Social Science Research Network, 19 August 2022) 1351 <https://papers.ssrn.com/abstract=4195066>.
[103] Weimer (n 92) 27.
[104] Niklas Eder, 'Assessing the Systemic Risks of Curation' (Social Science Research Network, 1 May 2023) 170 <https://papers.ssrn.com/abstract=4458328>.
[105] Emily Laidlaw, 'The Diligent Online Platform' (Social Science Research Network, 22 February 2024) 4 <https://papers.ssrn.com/abstract=4735876>.
[106] Recital 1 DSA
[107] Directive 2000/31/EC of the European Parliament and of the Council on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Electronic Commerce Directive) [2000] OJ L178/1.
[108] Giovanni De Gregorio and Pietro Dunn, 'THE EUROPEAN RISK-BASED APPROACHES: CONNECTING CONSTITUTIONAL DOTS IN THE DIGITAL AGE' 484.
[109] Wilman, Kaleda and Loewenthal (n 41) 16.
[110] ibid.
[111] ibid.
[112] Anupam Chander, 'When the Digital Services Act Goes Global' (2023) 38 Berkeley Technology Law Review 1067, 1070.

multiple fundamental rights frequently come into conflict.[113] The DSA thus embodies a systematic attempt to both safeguard fundamental rights and to balance different and often conflicting interests.[114] This attempt is in line with the evolving characteristics of European digital constitutionalism.[115] Within this context, the risk-based impact assessments required of private actors, such as platforms, should take due account of the objective of upholding fundamental rights and values as enshrined in the Charter.[116]

It has been argued additionally that through the DSA, fundamental rights are extended to the horizontal relationship between users and platforms, which would be justified by the extraordinary power of platforms.[117] Moreover, the DSA, in Recital 47, also states giving "due regard to relevant international standards for the protection of human rights", with referencing to the UN Guiding Principles on Business and Human Rights.[118]

3.3 Tiered Approach of the DSA

The DSA makes a distinction between different types of intermediaries, depending on their service type, size, and nature.[119] VLOPs and VLOSEs are designated by a periodic decision of the Commission when they reach 45 million average monthly active users, corresponding to 10% of the EU population.[120] These VLOPs and VLOSEs are also referred to as Big Tech.[121] According to the Commission's information, last updated on 9 December 2024, there are currently 23 VLOPs and two VLOSEs.[122] The designated companies vary widely in nature, and the list is likely to grow as more services reach the threshold or as further indications emerge that additional services meet the criteria.[123] Additionally, AI chatbots used as search tools like

[113] Folkert Wilman, 'The Digital Services Act (DSA) - An Overview' (Social Science Research Network, 16 December 2022) 20 <https://papers.ssrn.com/abstract=4304586>.
[114] Giancarlo Frosio and Christophe Geiger, 'Taking Fundamental Rights Seriously in the Digital Services Act's Platform Liability Regime' (2023) 29 European Law Journal 31, 74.
[115] Gregorio and Dunn (n 99) 474.
[116] Pier Giorgio Chiara and Federico Galli, 'Normative Considerations on Impact Assessments in EU Digital Policy 2 Jul 2024' 89 <https://cris.unibo.it/handle/11585/973774>.
[117] Niklas Eder, 'Making Systemic Risk Assessments Work: How the DSA Creates a Virtuous Loop to Address the Societal Harms of Content Moderation' [2024] German Law Journal 1, 4.
[118] Joris Hoboken and others, 'Putting the DSA into Practice: Enforcement, Access to Justice, and Global Implications' 117 <https://intr2dok.vifa-recht.de/receive/mir_mods_00015033>.
[119] ibid 215.
[120] Article 33 lid 1 and Article 2 DSA
[121] Husovec, *Principles of the Digital Services Act* (n 6) 272.
[122] The designated VLOPs are AliExpress, Amazon Store, Apple App Store, Booking.com, Facebook, Google Maps, Google Play, Google Shopping, Instagram, LinkedIn, Pinterest, Pornhub, Shein, Snapchat, Stripchat, Temu, TikTok, Wikipedia, X, XNXX, XVideos, YouTube and Zalando. And the VLOSEs are Bing Google Search.
[123] 'Cross-Cutting Issues for DSA Systemic Risk Management: An Agenda for Cooperation' (*CERRE*) 15 <https://cerre.eu/publications/cross-cutting-issues-for-dsa-systemic-risk-management-an-agenda-for-cooperation/>.

ChatGPT or Bard might also be classified as potential VLOSEs under the framework of the DSA.[124]

VLOPs and VLOSEs often operate more than one service.[125] In this context, there also is a growing phenomenon of platforms integrating generative AI into their own services.[126] This often involves the integration into search engines, social media and other applications.[127] Generative AI that is integrated into regular platforms or search engines is likely to fall under the scope of regulation by the DSA.[128] This, however, does need to meet a threshold involving the degree of ancillary nature of the features of the integrated service.[129] Accordingly, when such systems or models are integrated within the VLOPs and VLOSEs, they more specifically also fall within the risk management framework of the DSA.[130]

The obligations imposed by the DSA progressively rise, starting with requirements applicable to all intermediary service providers and leading to the most robust obligations for VLOPs and VLOSEs.[131] The recitals of the DSA justify these additional obligations because of their role and reach.[132] Meaning, the larger the operation, the more accountable it will be.[133] Accordingly, these largest players are also those whose operations have been associated with significant environmental costs.[134] Additional developments surrounding the integration and inclusion of AI elements result in an even more significant environmental impact.[135]

3.4 Risk Assessment

The DSA, under Article 34, obliges VLOPs and VLOSEs to conduct systemic risk assessments in relation to societal harm.[136] Such risks stem from: "the design or functioning of their service and its related systems, including algorithmic systems, or from the use made of their

[124] Buri and Griffin (n 13) 11; 'Is It a Platform? Is It a Search Engine? It's Chat GPT! The European Liability Regime for Large Language Models by Beatriz Botero Arcila: SSRN' 12 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4539452>.
[125] José van Dijck, David Nieborg and Thomas Poell, 'Reframing Platform Power' (2019) 8 Internet Policy Review 4 <https://policyreview.info/articles/analysis/reframing-platform-power>.
[126] Paddy Leerssen, 'Embedded GenAI on Social Media: Platform Law Meets AI Law - DSA Observatory' (16 October 2024) <https://dsa-observatory.eu/2024/10/16/1864/>.
[127] Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' (n 12) 5.
[128] Husovec, *Principles of the Digital Services Act* (n 7) 322.
[129] Article 2(2) DSA
[130] Leerssen (n 120).
[131] Chiara and Galli (n 108) 95.
[132] Sally Broughton Micova and Andrea Calef, 'Elements for Effective Systemic Risk Assessment Under the DSA' [2023] SSRN Electronic Journal 13 <https://www.ssrn.com/abstract=4512640>.
[133] Martin Husovec, 'Introduction: Taming the Powers' in Martin Husovec, *Principles of the Digital Services Act* (1st edn, Oxford University Press 2024) 7 <https://academic.oup.com/book/58088/chapter/478880051> accessed 13 October 2024.
[134] Buri and Griffin (n 13) 1.
[135] Ilaria Buri and Rachel Griffin, 'Platform Regulation in Times of Environmental Collapse: The Digital Services Act and the Climate Emergency' (13 June 2024) 12 <https://papers.ssrn.com/abstract=4867333>.
[136] Broughton Micova and Calef (n 126) 8.

services.".[137] There does not appear to be a universally accepted definition of systemic risk, either in the literature or in the text of the DSA.[138] This is first of all due to the fact that Article 34 DSA specifically mentions that *any* systemic risk ought to be assessed.[139] Thus, with the DSA only outlining the broad parameters of the processes by which risk assessments will be developed and reviewed, much uncertainty remains.[140] Overall, these provisions are notably broad, wide-ranging and abstract.[141] Also referred to as "360-degree scrutiny of many types of risks".[142]

Recital 76 of the DSA does provide some clarity as to what systemic risks are. They should be linked to societal risks and the societal impact from the use and functioning of these services.[143] Moreover, "a risk is systemic when it can lead to harm to individuals at a large scale or to systems essential to the governance and good functioning of society".[144] Systemic can thus be divided into two meanings: central to society and arising from systems.[145]

Article 34(1) DSA itself also gives more guidance on what potential systemic risks could be. It categorises four main categories of risk which these risk assessments in any case "shall include": (a) the dissemination of illegal content, (b) any actual or foreseeable negative effects for the exercise of fundamental rights, (c) public security and elections, and (d) gender-based violence, public health, protection of minors, and physical and mental well-being.[146] The EU legislator's inclination to address a broad range of demands related to potential risks is evident in the final category, which encompasses various situations and both collective and individual interests.[147] The relevant types of risks and risk areas overlap and are not mutually exclusive.[148]

The second risk category regarding fundamental rights, mentioned in Article 34(1)(b) DSA, provides a list of rights that are potentially affected including explicit reference to the

[137] Article 34(1) DSA
[138] Aliya Bhatia and Asha Allen, 'Auditing in the Dark: Guidance Is Needed to Ensure Maximum Impact of DSA Algorithmic Audits' (*Center for Democracy and Technology*, 20 November 2023) <https://cdt.org/insights/auditing-in-the-dark-guidance-is-needed-to-ensure-maximum-impact-of-dsa-algorithmic-audits/>.
[139] Wilman, Kaleda and Loewenthal (n 41) 261.
[140] Eder (n 110) 3.
[141] Rachel Griffin, 'EU Platform Regulation in the Age of Neo-Illiberalism' (Social Science Research Network, 29 March 2024) 10 <https://papers.ssrn.com/abstract=4777875>.
[142] Husovec, *Principles of the Digital Services Act* (n 7) 272.
[143] Jose Florinio Farcon, 'Epistemic Rights and Where to Find Them: The Systemic Risk Management Rules in The Digital Services Act as an Epistemic Rights Framework' (Social Science Research Network, 24 April 2024) 10 <https://papers.ssrn.com/abstract=4946495>.
[144] ibid 13.
[145] Husovec, *Principles of the Digital Services Act* (n 6) 320.
[146] Article 34(1) DSA
[147] Hoboken and others (n 111) 111.
[148] Husovec, *Principles of the Digital Services Act* (n 6) 318.

Charter. Although the rights mentioned in this list are non-exhaustive, the ones mentioned like respect for private and family life and consumer protection, are apparently those most at risk.[149] This reference would, however, be meant to refer to all fundamental rights protected by EU law.[150]

It is possible that the formulation of Article 34 is intentionally open-ended for the creation of a framework that is foundational yet adaptable.[151] In this sense, the narrowing of these categories could have the consequence of excluding situations that warrant protection.[152] However, the broad mix of risk categories might lack the clarity necessary for effective future-proof regulation.[153] This tension reflects the challenge of balancing legal certainty with regulatory flexibility.

Paragraph 2 of Article 34 DSA provides for a list of factors which the VLOPs and VLOSEs should consider when doing risk assessment. This non-exhaustive list could have been a potential place for the inclusion of elements regarding environmental protection. As the current wording mainly seems to focus on elements of the service situated within the online sphere, such as the design of recommender systems, content moderation systems, and data practices, this leads to the subsequent discussion on the inclusion of climate risks under Article 34 DSA.

3.5 Climate Risks as Systemic Risks

The following section assesses whether direct climate impacts fall or could fall under the scope of the risk provisions of the DSA considering the previous discussion of Article 34, which showed its broad nature. As described, the protective objective of the DSA relates to multiple dimensions of the functioning of our online environment, encompassing various public interest concerns.[154] Questions have been raised as to whether risks such as environmental costs are consistent with this purpose of the DSA, explicitly regarding the aspect of the 'online environment'. Additionally, the question of whether research into systemic risks must demonstrate a real or probable off-platform impact, and whether such an impact must be sufficiently severe, has been raised.[155] It has been argued that for a risk to be relevant under the

[149] Hoboken and others (n 111) 112.
[150] Wilman, Kaleda and Loewenthal (n 41) 16.
[151] János Tamás Papp, 'Moving Forward: Charting the Much-Needed Evolution of the Digital Services Act' (Nomos Verlagsgesellschaft mbH & Co KG 2024) 476 <https://www.nomos-elibrary.de/10.5771/9783748946526-457/moving-forward-charting-the-much-needed-evolution-of-the-digital-services-act?page=1>.
[152] Chiara and Galli (n 108) 97.
[153] Hoboken and others (n 111) 111.
[154] Wilman, Kaleda and Loewenthal (n 41) 16.
[155] Dr Oliver Marsh, 'Researching Systemic Risks under the Digital Services Act' 7.

DSA, it must have a clear and specific link to the functioning of services in this online environment.[156] Without such a link, doubts can be raised as to whether such risks can fall within the scope of the DSA, as stated by Huscovec.[157]

Griffin and Buri oppose such a view, by labelling this view that the DSA is assumed to be relevant only to issues associated with the 'online environment' as separate from the 'offline' world, as siloed thinking.[158] They argue that the online environment is connected to energy-intensive material systems which directly impact the offline environment.[159] And as a risk multiplier, climate change arguably amplifies existing risks.[160] In line with this, it has been argued that the use of language in this way overshadows the fact that the digital world has real-world consequences.[161] This narrow focus on the 'online environment' may stem from the fact that the 'offline' environment would be treated as belonging to other policy areas.[162] Nevertheless, they argue that division is no longer tenable and may never have been.[163] Recognising the material nature of digital infrastructures is arguably a way of challenging this online versus offline dichotomy.[164]

The growing attention to the broader social effects of platforms within the DSA, such as their contribution to negative health outcomes such as youth mental health, is a positive development suggesting that environmental impacts could also be included.[165] So while the scope appears to be limited to specific rights at risk in online platform environments, the wording, however, also clearly extends to broader interests that address significant economic and social concerns, such as public health and gender-based violence.[166] Similarly, "both public security and public health are also the subject of Article 36 DSA that deals with 'offline' situations of crisis such as natural disasters, acts of terrorism, or pandemics".[167] These allow for urgent measures to be taken by VLOPs during extraordinary circumstances, in addition to

[156] Martin Husovec, 'Risk-Based Approach to Digital Services' in Martin Husovec, *Principles of the Digital Services Act* (1st edn, Oxford University Press 2024) <https://academic.oup.com/book/58088/chapter/478882565>.
[157] ibid.
[158] Buri and Griffin (n 13) 9.
[159] Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' (n 12) 2.
[160] European Environment Agency, 'European Climate Risk Assessment' (Publications Office 2024) 11 <https://data.europa.eu/doi/10.2800/8671471>.
[161] Federica Lucivero, 'Big Data, Big Waste? A Reflection on the Environmental Sustainability of Big Data Initiatives' (2020) 26 Science and Engineering Ethics 1009, 1019.
[162] Buri and Griffin (n 13) 9.
[163] ibid.
[164] Lucivero (n 158) 1017.
[165] Buri and Griffin (n 13) 14.
[166] Chiara and Galli (n 108) 96.
[167] Broughton Micova and Calef (n 126) 13.

their regular obligations.[168] This crisis protocol mechanism does not form part of the systemic risk framework but is referred to in Article 35 DSA, which addresses the mitigation of risks.

While climate and environmental protection are not mentioned in the DSA, they can be regarded as included by falling under the risk categories of fundamental rights, public security, or as well as under the category of public health and physical well-being.[169] When falling underneath the category of fundamental rights, this should be under respect for private and family life, which is mentioned as one of the specific examples. This is reinforced by recent case law of the ECtHR on Article 8 ECHR, which established that climate risks fall within the scope of the right to private life.[170] Additionally, Article 37 of the Charter and its right to environmental protection can also be seen as falling within the framework established by the DSA here. It is worth repeating that Article 37 of the Charter is classified as a principle. However, as discussed, Article 37 of the Charter is expected to serve as a tool for shaping the interpretation and implementation of EU law.[171] Additionally, consumer protection enshrined in Article 38 of the Charter and anti-discrimination enshrined in Article 21 of the Charter are not explicitly called rights under the EU Charter but are still mentioned in the DSA as such. Accordingly, the obligations in the DSA should also be interpreted according to environmental protection provided for in Article 37 of the Charter as well as the protection under the right to private and family life under Article 7 of the Charter, which corresponds to Article 8 ECHR.

From an analysis of the already published reports on systemic risks, interesting points emerged, leaving the context of dissemination of content aside. By stating their reliance on new literature and industry best practice for risk management updates, the recently published AliExpress Risk Assessment and Mitigation Measures Report,[172] made explicit reference to the European Climate Risk Assessment (EUCRA) report which identified 36 significant climate risks across Europe.[173] In addition, in outlining the risks identified, the report explicitly mentions public health, defined as "any situation, behaviour or substance that poses a threat to the physical and psychological health and well-being of the general population, which includes (...) exposure to harmful environmental factors (...)".[174] In the context of the risk category of negative impact on the exercise of fundamental rights, and more specifically the right to consumer protection, the Zalando report identified mandatory environmental information that

[168] Recital 91 DSA
[169] Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' (n 12) 4.
[170] *Verein Klimaseniorinnen Schweiz and Others v Switzerland* [2024] ECtHR [GC] 53600/20.
[171] Izyumenko (n 26) 887.
[172] 'AliExpress DSA Risk Report 2024', <https://www.aliexpress.com/p/transparencycenter/mitigationReport.html>.
[173] European Environment Agency (n 157).
[174] AliExpress DSA Risk Report 2024, 50.

is either incorrect or missing as a risk.[175] They also mentioned the right to private life but did not attach that to environmental considerations. These findings show that in both cases, but especially in the case of Zalando, it remains questionable whether the environmental focus is on direct and material offline impacts, thereby failing to clarify the ambiguities arising from the online-offline debate. However, these reports do relevantly demonstrate the presence of environmental factors in the reporting, more specifically under public health risks and consumer protection.

3.6 Subconclusion

A textual analysis of Articles 34 DSA has been conducted to determine whether the DSA covers environmental protection and direct climate risks. It can be argued that offline risks fall within the scope of the DSA, also by pointing to explicitly mentioned non-online risks under Article 34 DSA such as public health and electoral integrity, which break the focus within the DSA on purely online risks. Through allowing for risks in the 'offline sphere', the right to environmental protection can be interpreted as part of the risk assessment framework under Article 34 of the DSA, derived through both ECtHR case law on the right to privacy under Article 8 ECHR and its corresponding Article 7 of the Charter through Article 52(3) of the Charter, or from the stand-alone provision on environmental protection in Article 37 of the Charter. This interpretation seems to be supported in a preliminary way by developments in the first risk reports, although concrete details and the scope remain unclear. Synchronisation with other digital regulation, such as the AI Act and the overlap between AI and platforms discussed above, further supports the argument that climate risks can be systemic risks. As climate risks become widely recognised as a systemic risk, VLOPs and VLOSEs will also become required to mitigate these risks, which is something the following chapter will focus on.

[175] 'Zalando DSA Risk Report 2024' 10 <https://corporate.zalando.com/sites/default/files/media-download/Zalando-SE_DSA_Risk-Report_2024.pdf>.

Chapter 4: Operationalising the DSA for Climate Risk Mitigation

This chapter explores how the constitutional obligation on environmental protection can be operationalised within the existing framework of the DSA. Articles 34 and 35 DSA relate in such a way that the former imposes a procedural obligation to analyse without requiring direct action, while the latter imposes a material requirement for action.[176] Through Article 35, the DSA provides for a variety of mitigation strategies in the form of legal, technical and organisational measures.[177] The subsequent discussion in the next chapter focuses on how the DSA could incorporate measures, through Article 35, when Article 34 DSA would cover climate risks. The role of the key actors within the system in promoting and integrating them will also be explored, as will the way they can do so. Despite the separate discussion of Articles 34 and 35 DSA, a close relationship between the two exists, and the initial essential step remains identifying climate risks in accordance with Article 34 DSA, to which certain of the proposed solutions in this chapter may also contribute.

4.1 Mitigation of Risks

Art. 35 DSA contains a non-exhaustive list of the most obvious mitigation measures that VLOPs and VLOSEs can or may take. Examples are listed, such as adapting the design, features or functioning of the VLOPs' services, adapting the terms and conditions and their enforcement, and adapting content moderation processes.[178] As the operative word in the provision is 'may', this indicates that the VLOPs have a wide margin of discretion in choosing which measures to take.[179] Also meaning, additional approaches next to those listed could be included.[180] Provided that they are "reasonable, proportionate and effective mitigation measures, tailored to the specific systemic risks identified pursuant to Article 34".[181] As the principle of proportionality is fundamental to the DSA, the mitigation measures should be "proportionate to the economic capacity of the VLOPs and the need to avoid unnecessary restrictions on the use of their service, taking due account of potential negative effects on fundamental rights" as clarified in Recital 86 of the DSA.[182] So not only do fundamental rights play a role in the assessment of risk, but also in the mitigation part of it.

[176] Husovec, *Principles of the Digital Services Act* (n 6) 325.
[177] ibid 326.
[178] Article 35 (1)(a), (b) and (c) DSA.
[179] ibid 14.
[180] Buri and Griffin (n 13) 15.
[181] Article 35(1) DSA
[182] Farcon (n 141) 13.

It is clear that much of the DSA's mitigation framework focuses on content moderation, but broader examples are provided, allowing climate risks to fall under the provision. The adaptation of the design, features, or functioning of services could specifically contribute to effectively mitigating environmental impacts.[183] Such measures could include reducing own direct energy and resource use.[184] Within such design strategies, 'sustainability impact assessments' have been identified as important tools.[185] While impact assessments have been deployed for a long time within the sphere of environmental impacts,[186] there might be potential in establishing specified shared indicators in terms of environmental assessment frameworks and assessment frameworks regarding digital rights.[187] However, the DSA arguably has more of a security approach to risk mitigation, with less of a focus on what is outside the system, which is often the case in environmental or human rights impact assessments.[188] Nevertheless, such assessments could complement the human-centric approach found within the DSA.[189]

It is possible, although exceptional in practice, that the Commission obliges VLOPs and VLOSEs to take specific, as well as general, risk mitigation measures.[190] However, in order to do so, it would be necessary that "the measures in question are the only reasonable, proportionate and effective options tailored to the identified systemic risk, taking into account their impact on fundamental rights".[191] In this sense, it is interesting to refer to the earlier argument on the responsibility of EU decision-makers to systematically consider environmental objectives as part of Article 37 of the Charter and its principle of environmental integration. By providing an insight into the Commission's powers within this process, this opens onto a further discussion of the broader mechanism put in place within the DSA context to address systemic risks. There are several ways in which the DSA can be used to encourage action once a serious risk to others has been identified.[192]

[183] Buri and Griffin (n 13) 15.
[184] Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' (n 12) 6.
[185] Hacker (n 52) 29.
[186] Alina Wernick, 'Impact Assessment as a Legal Design Pattern—A "Timeless Way" of Managing Future Risks?' (2024) 3 Digital Society 29, 1.
[187] Kazansky (n 76) 45.
[188] Hoboken and others (n 111) 114.
[189] Pagallo, Ciani Sciolla and Durante (n 48) 371.
[190] Husovec, *Principles of the Digital Services Act* (n 6) 269.
[191] ibid.
[192] ibid 317.

4.2 European Commission

And the Commission's powers extend beyond those already mentioned. The Commission is granted significant investigative powers in relation to VLOPs and VLOSEs.[193] To address the cross-border enforcement challenges observed with the GDPR, the DSA has expanded the Commission's enforcement powers.[194] The Commission has considerable discretion in enforcing not only Article 35 but also Article 34 DSA.[195] It is expected that issues of interpretation will be resolved over time through delegated acts, regulatory guidance, codes of conduct, best practices, and informal norms.[196] Busch, however, stated that while certain additions could legally be incorporated into the DSA, from a political perspective it is unlikely that the package of the DSA will be adjusted any time soon.[197] Several examples and alleyways for operationalising these mechanisms in favour of environmental protection will be discussed subsequently.

4.2.1 Delegated Acts

Delegated acts according to EU law, as defined in Article 290 TFEU, are "intended to supplement or amend non-essential elements of legislation".[198] Meaning, when applied to environmental protection, the question again becomes whether all essential elements are to be already present within the DSA.[199] Following the conclusion in the previous chapter, these, however, would fall underneath the scope of the DSA, meaning such an act could be adopted in order to promote environmental protection under the DSA. To date, delegated legislation on independent audits has been adopted, and a draft delegated act on access to data has recently been published for consultation.

[193] Kasia Söderlund and others, 'Regulating High-Reach AI: On Transparency Directions in the Digital Services Act' (2024) 13 Internet Policy Review 17 <https://policyreview.info/articles/analysis/regulating-high-reach-ai> accessed 14 November 2024.

[194] 'Enforcement of the DSA and the DMA: What Did We Learn from the GDPR?' (*Verfassungsblog*) 2 <https://verfassungsblog.de/power-dsa-dma-10/>.

[195] Griffin, 'EU Platform Regulation in the Age of Neo-Illiberalism' (n 136) 11.

[196] Griffin, 'Climate Breakdown as a Systemic Risk in the Digital Services Act' (n 12) 10.

[197] Busch (n 103) 39.

[198] Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47, article 290.

[199] Defne Halil, Konrad Kollnig and Aurelia Tamò-Larrieux, 'Regulating Pressing Systemic Risks – but Not Too Soon? *Comparative Analysis of the Implementation of Data Access Requests to Platform Data under Article 40(4) of the EU Digital Services Act*' (Social Science Research Network, 17 September 2024) 14 <https://papers.ssrn.com/abstract=4959049>.

4.2.2 Voluntary Standards

Article 44 of the DSA states that the Commission shall encourage the development and use of voluntary standards by the relevant European and international standardisation bodies.[200] Through these, essential requirements often provide a critical reference point for ensuring compliance.[201] The DSA specifically states that compliance with its obligations "may require implementation through technological means" and it then is "important to promote voluntary standards covering certain technical procedures".[202] Taking inspiration from the AI Act, specifications could enhance this process. Recital 165 of the AI Act emphasises that, in order to be effective, voluntary codes of conduct "should be based on clear objectives and key performance indicators to measure the achievement of those objectives".[203] Similarly, such methods could be adopted under the DSA when making use of AI systems within platforms, but could also be used as an example and extended to the broader functioning of platforms further than focusing on the mere integration of AI. In this broader sense, the DSA risk system arguably has similarities to the value-based engineering method described in the IEEE 7000 standard, which can be used as a tool for assessing and mitigating climate risks.[204] Here, value-based entails a design process approach with ethical principles at its core, which can be utilised to consider climate risks at all stages of platform design.[205] In this sense, it may also be interesting to consider the aforementioned EED and its recent Commission Recommendation, which specifically refers to the European and international standards EN 16247-1 and EN ISO 14000 in terms of energy audits and environmental management systems.[206]

4.2.3 Codes of Conduct

Article 45 of the DSA provides an obligation for the Commission and the Board to "encourage and facilitate the drawing up of voluntary codes of conduct".[207] It is also stated that they should "aim that the codes of conduct clearly define the nature of the public interest objectives being addressed, that they contain mechanisms for independent evaluation of the achievement of

[200] Article 44, Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act) (Text with EEA relevance) 2022 (OJ L).
[201] Michael Veale and Frederik Zuiderveen Borgesius, 'Demystifying the Draft EU Artificial Intelligence Act' (Social Science Research Network, 31 July 2021) 105 <https://papers.ssrn.com/abstract=3896852>.
[202] Recital 102 DSA
[203] Hacker (n 52) 20.
[204] Busch (n 103) 30.
[205] ibid 7.
[206] Commission Recommendation (EU) 2024/2002 of 24 July 2024.
[207] Article 45 DSA

those objectives and that the role of relevant authorities is clearly defined".[208] These codes would have the potential to make enforcement under Articles 34 and 35 DSA cheaper and faster.[209] Moreover, they can potentially increase transparency and civil engagement.[210] Article 45(2) DSA specifies engaging stakeholders in the development of codes of conduct where systemic risks concern multiple platforms.[211] They could specifically be operationalised to specify that risk assessments must include environmental protection and an assessment of climate risks.[212]

4.3 Transparency, Digital Service Coordinators, and the European Board for Digital Services

As part of their transparency obligations, VLOPs and VLOSEs are required to publish a report detailing the results of their risk assessments and the specific mitigation measures implemented.[213] In addition, Article 41 DSA requires them to establish a 'compliance function', including compliance officers, to ensure that all risks identified under Article 34 are identified and adequately reported.[214] Transparency reports are published summarising systemic risks, mitigation measures and audit findings, with full reports being shared confidentially with the Commission and Digital Service Coordinators (DSC), excluding sensitive information.[215] In the Netherlands, the DSC will be the Authority for Consumers and Markets (ACM), which will oversee enforcement at national level. While the DSA does not explicitly require publication of the full risk assessment, Recital 100 emphasises the importance of thorough risk reporting.[216] Collecting information about the environment is necessary to protect it. In terms of reporting, several Big Tech companies have been reporting on environmental metrics already and compete on their sustainability credentials.[217] Concerns have however been raised over the reliance on these companies for data on their emissions.[218] And the broad exemptions under

[208] Recital 103 DSA
[209] Husovec, *Principles of the Digital Services Act* (n 6) 274.
[210] ibid.
[211] Hoboken and others (n 111) 221.
[212] Buri and Griffin (n 13) 15.
[213] Chiara and Galli (n 108) 104.
[214] Article 41(3)(b)
[215] Söderlund and others (n 149) 15.
[216] European Center for Not-for-Profit Law and AccessNow, 'Towards Meaningful Fundamental Rights Impact Assessments under the DSA | Global Freedom of Expression' (2023) 17 <https://www.accessnow.org/wp-content/uploads/2023/09/DSA-FRIA-joint-policy-paper-September-2023.pdf>.
[217] David Mytton, 'Data Centre Water Consumption' (2021) 4 npj Clean Water 1, 3; 'Fighting over Who Has the Greenest Public Cloud' (*David Mytton*, 25 September 2020) <https://davidmytton.blog/fighting-over-who-has-the-greenest-public-cloud/>.
[218] Kazansky (n 76) 34.

Article 42(5) DSA regarding public disclosure of systemic risks potentially significantly dilute the enforceability of these provisions.[219]

The DSA further stipulates that VLOPs and VLOSEs must provide access to data to vetted researchers "upon a reasoned request from the Digital Services Coordinator".[220] This access is for "the sole purpose of conducting research that contributes to the detection, identification, and understanding of systemic risks (...) and to the assessment of the adequacy, efficiency, and impact of the risk mitigation measures".[221] Arguably, these provisions on research data access could be leveraged to incentivise more sustainable practices.[222] This subject will be discussed in more detail below, but is briefly mentioned here to underline the role of the DSCs here.

In addition, there are various possibilities for DSCs to assist the Commission in the supervision of VLOPs and VLOSEs, either individually or through the European Board for Digital Services (Board).[223] The DSCs, in their collective capacity, form the Board.[224] The Board also provides for contacts with external experts, which may lead to exchanges of information and non-binding recommendations.[225] A yearly report will be published by the Board, in cooperation with the Commission, in which the Board is provided the opportunity to speak out on almost all matters related to enforcing the DSA.[226] According to Article 35(2) DSA, this report must document the "most prominent and recurrent" systemic risks reported by VLOPs and VLOSEs, and "best practices to mitigate these risks".[227] These reports are thus, and may increasingly become, another potential means of at least promoting environmental protection.

[219] Hoboken and others (n 111) 203.
[220] Article 40(4) DSA
[221] Article 40(4) DSA
[222] Buri and Griffin (n 13) 10.
[223] Julian Jaursch, 'Here Is Why Digital Services Coordinators Should Establish Strong Research and Data Units - DSA Observatory' (10 March 2023) <https://dsa-observatory.eu/2023/03/10/here-is-why-digital-services-coordinators-should-establish-strong-research-and-data-units/>.
[224] Art. 61-63 DSA
[225] Julian Jaursch, 'More than an Advisory Group: Why the European Board for Digital Services Has Key Roles in DSA Enforcement - DSA Observatory' (23 February 2024) <https://dsa-observatory.eu/2024/02/23/more-than-an-advisory-group-why-the-european-board-for-digital-services-has-key-roles-in-dsa-enforcement/>.
[226] ibid.
[227] Paddy Leerssen, 'Counting the Days: What to Expect from Risk Assessments and Audits under the DSA – and when? - DSA Observatory' (30 January 2023) <https://dsa-observatory.eu/2023/01/30/counting-the-days-what-to-expect-from-risk-assessments-and-audits-under-the-dsa-and-when/>.

4.4 Audits

The DSA requires VLOPs and VLOSEs to undergo independent audits at least annually to ensure compliance with their obligations, including the assessment of systemic risk.[228] In October, the Commission adopted a delegated regulation on DSA audits, where Recital 5 emphasises the alignment of annual audits with annual risk assessments, so that their results are closely linked.[229] While auditors do not appear to have a significant role in shaping these assessments, critics argue that the ambiguities left by the Commission may allow auditors to take a central role in defining the boundaries of compliance,[230] effectively acting as regulators.[231] Entrusting private entities with the assessment of risks to fundamental rights raises significant concerns, notably in the context of online platforms.[232] This concern is reinforced by the control online platforms exercise over their ecosystems and their ability to select auditors.[233] Article 44(1)(e) DSA allows the Commission to promote voluntary standards to fill gaps or inconsistencies in audit criteria.[234] This could be operationalised for environmental protection by requiring climate risk assessments through sustainability audits in the form of environmental impact assessments.[235] Moreover, to ensure that audit standards reflect the values of the Charter, it has been suggested that civil society and human rights experts be involved in the process.[236]

4.5 Data Access Under the DSA

The data access rights for researchers set out in Article 40(4) and (12) of the DSA introduce a new institutional framework allowing independent researchers to access internal data held by platforms, and have been seen as one of the most innovative aspects of the legislation.[237] Accordingly, such research must contribute to "the detection, identification and understanding of systemic risks in the Union, as referred to in Article 34(1) DSA".[238] In addition, Article 40(4) DSA allows research to assess "the adequacy, effectiveness and impact of the risk-

[228] Article 37 DSA
[229] Bhatia and Allen (n 133).
[230] Eder (n 96) 171.
[231] Giovanni De Gregorio and Oreste Pollicino, 'Auditing Platforms under the Digital Services Act' [2024] Verfassungsblog 1 <https://verfassungsblog.de/dsa-auditors-content-moderation-platform-regulation/>.
[232] ibid 4.
[233] ibid 1; ibid 3.
[234] De Gregorio and Pollicino (n 226) 3.
[235] Busch (n 103) 39.
[236] Bhatia and Allen (n 133).
[237] Buri and Griffin (n 13) 17.
[238] Anna Liesenfeld, 'The Legal Significance of Independent Research Based on Article 40 DSA for the Management of Systemic Risks in the Digital Services Act' [2024] European Journal of Risk Regulation 1, 6.

mitigation measures referred to in Article 35". This system could provide evidence of societal threats related to the activities of platforms or search engines.[239] This article could arguably help integrate digital and climate policies by providing access to information on how the activities of VLOPs and VLOSEs affect the climate, informing societal debates and providing a basis for mitigating and addressing these impacts.[240]

In this context, Liesenfeld has examined the extent to which the independent research facilitated by Article 40 DSA is legally relevant under the framework of systemic risk under the DSA.[241] Accordingly, the DSA does not explicitly require VLOPs and VLOSEs to take into account research findings from Article 40(4) DSA investigations, even if they identify systemic risks, as Article 35(1) DSA requires VLOPs and VLOSEs to mitigate "the specific systemic risks identified in accordance with Article 34", which means that only risks identified through their own risk assessments are included.[242] Whether Recital 90, which states that VLOPs and VLOSEs should "ensure that their approach to risk assessment and mitigation is based on the best available information and scientific evidence", changes this obligation remains a matter of debate.[243] While this recital encourages dialogue with independent researchers, its non-normative status within EU law leaves this interaction voluntary. However, the Commission and the Board could give significant weight to civil society involvement in assessing the risk management of platforms, through issuing best practices and guidelines.[244] Such clarification of the participation of civil society would not create legal obligations, but it could have "quasi-legal authority".[245] This less voluntary nature would arguably be necessary not only to strengthen civil society participation, but also to prevent its exclusion.[246]

Liesenfeld concludes that in practice, the legal significance of such research findings depends on two factors: whether researchers can obtain sufficient evidence to demonstrate systemic risks, and whether the Commission has the discretion to initiate proceedings based on these findings. Establishing a dialogue with vetted researchers or creating a database of all published research results based on Article 40(4) DSA could facilitate the initiation of proceedings by the Commission.[247] Without effective enforcement, Liesenfeld concludes,

[239] ibid 1.
[240] Buri and Griffin (n 13) 18.
[241] Liesenfeld (n 233) 3.
[242] ibid 7.
[243] ibid.
[244] Eder (n 110) 15.
[245] ibid.
[246] ibid 17.
[247] Liesenfeld (n 233) 12.

VLOPs and VLOSEs lack incentives to integrate research findings into their risk assessments.[248] Consequently, this could lead to the loss of a credible mechanism for integrating climate risks and environmental protection into the DSA.

4.6 Subconclusion

As shown in this and the previous chapter, the systemic risk provisions in Articles 34 and 35 of the DSA provide a basis for operationalising environmental protection under the DSA. The discussion of specific mitigation measures in this chapter has shown how VLOPs and VLOSEs can address environmental risks as part of their systemic risk obligations under Article 35 DSA. By leveraging the roles of the DSCs, the Board, and the Commission, the DSA framework can be effectively used to address climate risks through mechanisms such as delegated acts, voluntary standards, and codes of conduct.

However, due to the inherent conflict of interest, platforms and auditors lack credibility in defining systemic risk and determining how to mitigate it. In addition, the concentration of power within the Commission and the Digital Services Board has been criticised, making direct recommendations on the audit and focus of the DSA by regulators potentially undesirable. For this reason, this chapter has also explored the potential legal significance of research evidence in supporting the risk mitigation obligations of VLOPs and VLOSEs under the DSA. The inclusion of civil society and researchers as active participants in systemic risk assessment, as foreseen in Article 40 of the DSA, offers a way to increase accountability and address environmental risks more effectively.

[248] ibid 13.

Chapter 5: Final Remarks and Conclusion

This thesis examined how the DSA can contribute to mitigating climate risks through its framework of systemic risk regulation. By situating this discussion within broader considerations of evolving environmental protection, digital and sustainable regulation, and the role of fundamental rights, it demonstrates how environmental protection can be integrated into the platform regulation under the DSA.

It is concluded that by firmly embedding environmental protection and climate risks in the fundamental right to private life, the European Court of Human Rights has provided an important avenue for considering climate risks as systemic risks within the DSA, as the right to private life is explicitly mentioned in its systemic risk framework. In addition, as discussed above, Article 37 of the EU Charter is expected to play an increasingly important role in shaping the interpretation and implementation of EU law, with implications for the DSA. The review of key EU legislation, policies and academic perspectives also highlighted how environmental protection is increasingly being integrated into both sustainability and technology regulation. For example, the recent AI Act explicitly includes environmental protection.

The contribution to the literature lies in exploring this unconventional application of systemic risk provisions to direct climate risks. By assessing and building on the work of Buri and Griffin through examining this potential, the analysis contributes to the broader debate on the definition and scope of systemic risks. Through a textual analysis of Article 34, it is shown that although the DSA does not explicitly refer to climate impacts, such risks can be integrated under its provisions. This finding is supported by the broader regulatory context of the DSA, a discussion of the online versus offline debate, and the broad nature of systemic risk. In addition, an examination of published systemic risk reports underlines the current and likely future relevance of including environmental factors, notably in the context of public health and consumer protection.

The analysis also discusses practical mechanisms for operationalising the DSA framework, such as delegated acts, voluntary standards, and codes of conduct, which can be used to address climate risks. In addition, the combination of the integration principle enshrined in Article 37 of the EU Charter and the resulting obligations of the Commission can be used to argue that the Commission already had a responsibility to systematically integrate environmental objectives into new legislation. At the same time, the thesis recognises challenges such as the credibility problems faced by platforms in self-assessments and auditing,

and the concentration of regulatory power in the Commission and the Digital Services Board. To address these challenges, the involvement of civil society and researchers as active participants in systemic risk assessments, as foreseen in Article 40 of the DSA, is of particular importance. By strengthening their involvement through best practices and guidelines, the potential for effective climate risk mitigation through the DSA could be enhanced.

As the whole background to this legal analysis is also a highly political one, further research into the desirability of including climate risks under the Digital Services Act is of significant interest. Another interesting aspect to explore concerns the intersection of the different legal frameworks discussed, including the EED, the CSRD, and the CSDDD in relation to the DSA. It is possible that, utilising the role of the DSCs, a similar framework could be further explored to address oversight challenges related to climate risks under the Digital Services Act with the relevant regulators, in the same way that, for example, the Dutch Data Protection Authority and ACM currently cooperate to manage the regulation of data protection in the Netherlands.

In conclusion, the answer to the research question ‘How can the Digital Services Act contribute to environmental protection by mitigating climate risks through its systemic risk regulatory framework governing online platforms?' lies in its ability to reshape the digital economy through a systemic risk regulatory framework by integrating environmental considerations. By leveraging its ability to hold the largest platforms to account, the DSA has the potential to address the direct climate risks of platform activities. By grounding these efforts in fundamental rights, such as the right to private life, and leveraging the broader EU regulatory framework, the DSA can support a shift towards protection of the environment through platform regulation.

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