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THE ENVIRONMENTAL CANKER THAT IS ARTIFICIAL INTELLIGENCE; AN ANALYSIS OF THE ENVIRONMENTAL IMPACTS OF AI AND THE STATUS OF AI REGULATION AS A RESPONSIVE MECHANISM

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ABSTRACT

Over the past few years, Artificial Intelligence ("AI") has been pervasive to say the least. There is nearly no field that can boast of remaining unadulterated by the spread of AI. It has much commendation for being the root cause for the quantum leaps in several fields after decades of stagnation. Notwithstanding this modern technology being in its golden era, AI has faced much criticism for the notable problems that stem from its production and use, with one of the major, yet seemingly obscure victims of AI being the environment. The diffusion of AI has garnered the universal attention of states, regional and international organizations who have responded by taking steps to create frameworks for the regulation of AI. This paper would begin by examining the evolution of AI since its conception in the 1940s until now. Afterwards, there will be a discussion on the advantages and disadvantages of AI across the various areas which it has permeated. Following this, there shall be a detailed analysis of the impact of AI on the environment, with particular regard to the negative environmental impacts that have already begun to manifest and are estimated to worsen with time.

Volume-2, Issue-3 *Pages: 397-435*

There shall then be an evaluation of the regulatory frameworks for AI established and yet to be established by states and regional and global organisations, focusing on the extent to which these frameworks address the negative environmental impacts of AI. This paper shall conclude with a call for AI production, use and regulation to not be without contemplation of the technology's negative effects on the environment and possible solutions to mitigate them.

KEYWORDS: Artificial Intelligence, AI, Environment, Negative Environmental Impact, AI Regulation.

1. INTRODUCTION:

The trajectory of Artificial Intelligence ("AI") since its genesis has resulted in it no longer being regarded as an aspirational technology of the distant future. It is here. AI has already permeated into most, if not all, sectors and industries globally as well as into our personal lives. From historic breakthroughs made in cancer research in the medical field to deep fake videos of animals couched into strangely captivating storylines on social media, AI is undoubtedly here to stay. There has, however, been the failure to consider the question about AI whose answers have already begun to rear their ugly heads: At what cost? The impact of modern technology and civilization on the environment has always been a matter of concern and that of AI, one of the newest rapidly emerging forms of technology, is no exception. This essay seeks to analyse AI and its impact, with particular regard to the present and estimated problems on the environment and the status of AI regulation as a mechanism in addressing said problems.

1.1 A Timeline of AI

Volume-2, Issue-3 *Pages: 397-435*

The roots of AI are traceable to the 1940s. In 1942, Isaac Asimov, an American Science Fiction Writer, published "Runaround", a short story whose plot centered on a robot developed by two engineers and evolved around the Three Laws of Robotics.[1] His work proceeded to inspire various scientists in the field of robotics, AI and computer science.[2] In 1950, Alan Turing, inspired by a previous invention of his, published his seminal paper, "Computing Machinery and Intelligence"[3] where he addressed the self-imposed question, "Can machines think?" and laid down the Turing Test, that is, if a human is interacting with another human and a machine and is unable to distinguish the machine from the human, then the machine is said to be intelligent. The Turing Test remains a benchmark to identify intelligence of an artificial system. The esteemed Alan Turing is considered the father of artificial intelligence for laying the foundation for Artificial Intelligence in his paper.

However, it was not until the 1956 Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI), where the term, "Artificial Intelligence" as we know it today was coined. It was two decades after the Dartmouth Conference that there was notable progress in the field of AI. An example of such success was the famous ELIZA computer program created by Joseph Weizenbaum at MIT between 1964 and 1966 which was a natural language processing tool able to simulate a conversation with a human. There was also the creation of the General Problem Solver Program by Nobel Prize Winner Herbert Simon and RAND Corporation Scientists Cliff Shaw and Allen

[1] ISAAC ASIMOV, RUNAROUND. I, ROBOT 40 (The Isaac Asimov Collection ed., Doubleday 1950).

[2] Michael Haenlein & Andreas Kaplan, *A Brief History of Artificial Intelligence: On the Past, Present and Future of Artificial Intelligence*, CMR, 2019, at 2.

[3] Alan Turing, *Computing Machinery and Intelligence,* LIX Mind, 433, (1950).

Volume-2, Issue-3 *Pages: 397-435*

Newell. This program was able to automatically solve simple problems such as those in the mathematical game known as the Towers of Hanoi.[4]

Since its origin, AI rippled through various fields with unprecedented speed and shows no signs of ceasing to solve the most complex problems in niche fields while simultaneously relating to the average person on a personal, conversational level.

2. HAS AI BEEN FOR THE BETTER?

The question as to whether AI has been for the better lies within a double faceted answer in the affirmative and the negative.

2.1 General Advantages of AI

AI has come with several advantages that cater to the diverse fields to which it has been introduced.

In the world of finance for instance, AI has played a huge role through the creation of AI chatbots that engage and interact with customers 24/7 on behalf of banks and help customers in creating bank accounts and make complaints to the appropriate customer service units. Also, enhanced AI components are being added to the existing systems to enable the identification of previously undetected transactional patterns, data anomalies and suspicious relationships between individuals and entities, making fraud detection and prevention easier. AI is also being applied to revenue forecasting, stock price predictions, risk monitoring and case management.[5]

[4] Haenlein & Kaplan, *supra* note 3, at 3.

[5] Jania Okwechime, *How Artificial Intelligence is Transforming the Financial Services Industry,* DELOITTE RISK ADVISORY INSIGHTS,

Volume-2, Issue-3 *Pages: 397-435*

The field of health and medicine has seen much advancement since AI was introduced into it. AI has been of great use in tasks such as diagnostics, data analysis, and precision medicine. It is already being applied in areas ranging from patient triage to cancer detection.[6]

Furthermore, there are several advantages of AI in law enforcement, with AI technology being used in identifying persons through facial, iris, fingerprint and palm-print detection as well as in voice and gait recognition systems. In addition, the new AI-powered forms of DNA analysis now being developed which attempts to predict externally visible characteristics such as eye, hair, and skin colour, as well as the geographic origins of a person's ancestors is a massive upgrade of the DNA analysis technology that is already used by law enforcement to identify suspects. Policing agencies use AI to detect crime, anomalies or suspicious events and also predict future crimes and not only their perpetrators, but also their victims.[7]

AI has also taken the legal industry by storm, with the traditional practice of law being simplified through AI being used in the review of legal documents, the research of case law and statutes, contract and legal document analysis and proofreading, error

www.deloitte.com/content/dam/assets-zone1/ng/en/docs/services/risk-advisory/2023/ng-how-artificial-Intelligence-is-Transforming-the-Financial-Services-Industry.pdf.

[6] Ted A. James, *How Artificial Intelligence is Disrupting Medicine and What it Means for Physicians,* HARVARD MEDICAL SCHOOL, (Apr. 13, 2023),

https://learn.hms.harvard.edu/insights/all-insights/how-artificial-intelligence-disrupting-medicine-and-what-it-means-physicians.

[7] The Policing Project, *How Policing Agencies Use AI,* THE POLICING PROJECT, (Apr. 2, 2024), www.policingproject.org/ai-explained-articles/2024/9/6/how-policing-agencies-use-ai.

correction and document organization, consequently saving time, ensuring more accurate risk assessment, higher quality work and improving client relations.[8]

On a personal level, the capacity of Generative AI models such as OpenAI's ChatGPT to engage in human-like conversations has made it possible for people to tap into it for brainstorming, practising conversations and seeking emotional support[9] as well as psychological insight.

2.2 General Disadvantages of AI

Despite the positive strides that AI appears to be making, there are some downsides to this modern technology that are too blatant to ignore.

AI, since its brief period of introduction to the general population, is being overly relied upon as a replacement to tasks and situations which should be reserved for human beings. Generative AI such as ChatGPT, for instance, has been vilified for being a major threat to users' critical thinking skills. It has also been criticised for perpetuating the depletion of personal and communal relationships already strained by social media use, with people substituting this Generative AI for social interactions and relationships with other human beings.[10]

[8] Kelly Brown, *7 Ways Artificial Intelligence Can Benefit Your Law Firm,* LEGAL WEB DESIGN, (Jan. 19, 2024),

https://www.legalwebdesign.com/7-ways-artificial-intelligence-can-benefit-your-law-firm/.

[9] Florence Gonsalves et al, *AI–The good, the bad, and the scary*, VIRGINIA TECH ENGINEERING, (2023), https://eng.vt.edu/magazine/stories/fall-2023/ai.html.

[10] *Id*.

Volume-2, Issue-3 *Pages: 397-435*

Another disadvantage is the discrimination AI is capable of creating and causing. There is a recognised term for this: Artificial Intelligence or AI bias. This refers to the systematic discrimination within AI systems that are capable of reinforcing existing biases and amplifying discrimination, prejudice, and stereotyping.[11] It happens where the already existing prejudices and stereotypes occurring in the human realm that reflect past or systemic discrimination are incorporated into the data which will likewise replicate those same human biases[12] or where the AI models reflect the assumptions of the developers responsible for coding them, causing them to have certain discriminatory outcomes.[13] This could consequently lead to certain persons of a certain race or ethnicity being flagged as potential criminals or terrorists or wrongfully charged and convicted as such for crimes already committed. In the US, it was revealed that COMPAS (Correctional Offender Management Profiling for Alternative Sanctions), an algorithm used in US Court systems to predict the likelihood of a defendant being a recidivist, predicted twice as many false positives for recidivism for black offenders (45%) then white offenders (23%).[14] AI bias is also the reason the hiring practices of a company using AI for such a process is discriminatory. The multinational company Amazon discovered in 2015 that the algorithm used for hiring employees based its selection on the number of resumes submitted over the past ten years. Since during that time, the majority of the applicants

[11] SAP, *What is AI bias? Causes, effects and mitigation strategies*, SAP, (Oct. 30, 2024), www.sap.com/resources/what-is-ai-bias.

[12] Costanza Nardocci, *Artificial Intelligence-based Discrimination: Theoretical and Normative Responses. Perspectives from Europe,* 60 DCPE Online 2367 (2023).

[13] SAP, *supra* note 11.

[14] Datatron, *Real-life Experiences of Discriminating Artificial Intelligence*, DATATRON, https://datatron.com/real-life-examples-of-discriminating-artificial-intelligence/.

were men, the algorithm was eventually trained to favour men over women and was therefore found to be biased against women.[15]

This discussion on employment also brings to light another disadvantage of AI which is that it is a threat to job security for current and future human employees. The ability of AI to perform more automated and routine tasks typically done by humans has led to the increasing risk of replacement in key sectors such as customer service and manufacturing. This is evidenced by the prevalence of AI Chatbots and Virtual Assistants and AI-driven robots in warehouses and factories. Beyond traditional work roles, AI also serves a threat to jobs in the creative industry, notable among them being ghostwriting, graphic design and art. Out of the latter have emerged criticisms, accusations and even lawsuits against AI players, including OpenAI, Stability AI, Anthropic, Microsoft, Google and Meta for exploiting creative works and violating intellectual property rights of human creators on a large scale. It is the argument of authors, visual artists, music publishers and new organisations that AI models have misused their copyrighted work to train algorithms and generate outputs.[16]

Lastly, AI has been used as a tool to amplify stereotypes, propaganda and misinformation. AI is responsible for many deepfakes[17] which are used to create non-

[15] Reuters, *Amazon ditched AI recruiting tool that favoured men for technical jobs*, THE GUARDIAN, (Oct. 11, 2018, 00.43 BST),

www.theguardian.com/technology/2018/oct/10/amazon-hiring-ai-gender-bias-recruiting-engine.

[16] Rashmi Bagri, *Discussing the Copyrightability of Generative AI Outputs*, TECH POLICY PRESS, (Feb. 12, 2025),

www.techpolicy.press/discussing-the-copyrightability-of-generative-ai-outputs/.

[17] Beena Ammanath, *In a world of deep fakes, we must build a case for trustworthy synthetic AI content*, WORLD ECONOMIC FORUM, (May 30, 2024),

Volume-2, Issue-3 *Pages: 397-435*

consensual explicit content using someone's likeness, as well as perpetuate stereotypes, leading to severe privacy violations and harm to individuals, particularly women and marginalized communities. These Deepfakes are also responsible for using the likeness of politicians and other important personalities (dead or alive) to spread certain harmful political and social ideologies such as fascism, racism and overall hate. In 2024, investigations were made into phone calls made to the American citizens with an AI generated imitation of the voice of the then President Joe Biden urging people to not vote in the presidential primary election.[18] There have also been reports of over 50 AI-generated fake news websites,[19] which would have undoubtedly spread misinformation to the unsuspecting public.

3. AI AND THE ENVIRONMENT:

The environment is no exception regarding the many fields into which AI has wormed its way. The answer as to whether it has had a positive impact for the environment or otherwise is a nuanced one.

3.1 Benefits of AI on the Environment

www.weforum.org/stories/2024/05/why-we-need-to-look-beyond-deepfakes-to-benefit-from-synthetic-content-technology/.

[18] Tiffany Hsu, *New Hampshire Officials to Investigate A.I. Robocalls Mimicking Biden*, THE NEW YORK TIMES, (Jan. 22, 2024),

www.nytimes.com/2024/01/22/business/media/biden-robocall-ai-new-hampshire.html?ref=disinfodocket.com.

[19] Matthew Cantor, *Nearly 50 news websites are 'AI-generated', a study says. Would I be able to tell?*, THE GUARDIAN, (May 8, 2023),

www.theguardian.com/technology/2023/may/08/ai-generated-news-websites-study.

Volume-2, Issue-3 *Pages: 397-435*

On one hand, the potential of AI use in relation to the environment has been recognised and already been put to the test by several institutions and persons which has resulted in positive feedback.

Firstly, AI is capable of monitoring environmental conditions and improving biodiversity protection and conservation efforts. Regarding environmental monitoring, AI can process satellite imagery to assess land-use changes and deforestation while also assessing data from environmental sensors to evaluate pollution levels. The former has been done by a Scottish company, Space Intelligence, which paired AI with satellite images to map more than 1 million hectares of land in 30 different countries which are impacted by deforestation.[20]

Secondly, the world of agriculture has been regarded as a potential beneficiary of Artificial Intelligence. AI can be a major contributor to the improvement of agriculture by providing weather forecasts, instructions on when to water crops and suggestions on which pesticides farmers are to use.[21] This could go a long way to increase crop yield and prevent agricultural losses during and after the farming season.

Furthermore, AI could be used to predict and provide early warning signs of natural and climate disasters, thus allowing for the ability to mitigate damage and loss of life.[22] This is evident in "Early Warnings for All", an initiative by the UN Secretary-General,

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[20] Victoria Masterson, *9 Ways AI is helping tackle climate change,* WORLD ECONOMIC FORUM, (Feb. 12, 2024),

www.weforum.org/stories/2024/02/ai-combat-climate-change/.

[21] UC News, *9 Benefits of Artificial Intelligence (AI) in 2025*, UNIVERSITY OF CINCINNATI ONLINE, (2025),

www.online.uc.edu/content/uc/news/articles/uco/artificial-intelligence-ai-benefits.html.

[22] Enock Ebbah, *The Truth About AI & The Environment: Pros and Cons*, ASTUTIS, (May, 2025),

www.astutis.com/astutis-hub/blog/artificial-intelligence-environmental-impacts.

Volume-2, Issue-3 *Pages: 397-435*

António Guterres. This initiative constitutes an action plan that aims to ensure everyone is protected from hazardous weather, water, or climate events through early warning systems by the end of 2027 incorporates AI use in the achievement of this aim.[23]

Moreover, AI can be used to develop better sustainability practices. This is particularly great news to countries, companies and other institutions whose operations involve catastrophic greenhouse emissions. With the help of AI, they would be able to properly transition to, adopt and implement alternative operations that are more environmentally conscious and friendly.

Lastly, AI is being used to make clean-up efforts more efficient by using satellite imagery and machine learning to identify plastic debris in the ocean. The Ocean Cleanup is a non-profit organization that uses AI to identify and track plastic pollution in the Great Pacific Garbage Patch, which is a huge pile of plastic floating in the Pacific Ocean.[24] The organization uses a fleet of autonomous boats to collect data on the location and size of plastic debris, helping to create a detailed map of ocean litter in remote locations.[25] AI has also been used to develop new clean-up technologies.

[23] World Meteorological Organization, 'Early Warnings for All' UNITED NATIONS, (2022), www.un.org/en/climatechange/early-warnings-for-all.

[24] CleanHub, *Everything You Need to Know About the Great Pacific Garbage Patch*, CLEANHUB, (Nov. 23, 2023), www.cleanhub.com/blog/the-great-pacific-garbage-patch-how-marine-plastic-impacts-our-biggest-ocean.

[25] Robin de Vries, *Using AI to Monitor Plastic Density in the Ocean*, THE OCEAN CLEANUP, (Jan 26, 2022), https://theoceancleanup.com/updates/using-artificial-intelligence-to-monitor-plastic-density-in-the-ocean/.

Volume-2, Issue-3 *Pages: 397-435*

Researchers at the University of California, Berkeley have developed a robot that can identify plastic particles in the water and swim through the ocean to collect plastic waste.[26]

These are a mere handful of the current and potential advantages of AI to the environment as a whole.

3.2 The Negative Effects of AI on the Environment

The seemingly bright future of the environment with the application of AI is not sufficient to conceal the ugly truth of what really goes into the production of this technology and the fact that the same environment it seeks to protect bears the brunt of it all. The use of AI is reported to amount to the consumption of large quantities of water by the data centres that meet AI data requests. Water covers 70% of the Earth, however, only 3% of the Earth's water is freshwater and with only 0.5% of all water is accessible and safe for human consumption. AI servers and data centres rely on fresh water to cool onsite servers and dissipate heat, consuming up to 2.4 gallons or 9 litres of water per kilowatt hour of energy used.[27] The process of producing electricity to power AI also consumes water.[28] It has been reported that OpenAI's GPT-4 uses up to

[26] CleanHub, *10 Ways AI is Being Used to Help the Environment*, CLEANHUB, (Sept. 6, 2024), www.cleanhub.com/blog/how-is-ai-being-used-to-help-the-environment.

[27] U.S. Energy Information Administration (EIA), *Electricity use in homes*, U.S. ENERGY INFORMATION ADMINISTRATION (EIA), (Dec. 18, 2023), www.eia.gov/energyexplained/use-of-energy/electricity-use-in-homes.php.

[28] Shaolei Ren, *How much water does AI consume? The public deserves to know* OECD AI POLICY OBSERVATORY, (Nov. 30, 2024), https://oecd.ai/en/wonk/how-much-water-does-ai-consume; Food and Water Watch, *Thirsty Fossil Fuels: Potential for Huge Water Savings by Switching to Renewables*, FOOD AND WATER WATCH, (July, 2022),

Volume-2, Issue-3 *Pages: 397-435*

three 500ml bottles of water just to generate a 100-word email.[29] Microsoft's company reports revealed that the company's water use increased to 87 percent between 2020 and 2023 alone, part of which was attributed to the growth in the data centre and AI sectors.[30] Reports from Google, Meta, and Microsoft estimate that, together, these companies withdrew 580 billion gallons of water in 2022 to provide power and cooling to data centres and AI servers.[31] All this water consumption has not been without consequences on the primary users of the resource: human beings. In the state of Arizona in the United States, it was reported that farmers' fallowed fields and families went through most of 2023 without tap water.[32] In the state of Georgia, residents that live close to AI data centres have complained of severe water shortage since these centres were established.[33] If this is the case for a country that should have access to more water, the worst could only be expected for water-stressed countries in areas such as the Middle East and North Africa.[34] The water consumption by AI technology is estimated to worsen with time. Globally, AI-related infrastructure may soon

www.foodandwaterwatch.org/wp-content/uploads/2022/07/2207_FSW_WaterUseRenewablesFinalA.pdf.

[29] Food and Water Watch, *A No Brainer: How AI's Energy and Water Footprints Threaten Climate Progress*, FOOD AND WATER WATCH, (Mar., 2025),

www.foodandwaterwatch.org/wp-content/uploads/2025/03/FSW_0325_AI_Water_Energy.pdf.

[30] Microsoft Corporation, *2024 Environmental Sustainability Report*, MICROSOFT, (May 15, 2024, at 24 and 26

https://cdn-dynmedia-1.microsoft.com/is/content/microsoftcorp/microsoft/msc/documents/presentations/CSR/Microsoft-2024-Environmental-Sustainability-Report.pdf

[31] Food and Water Watch, *supra* note 29.

[32] Food and Water Watch, *supra* note 29.

[33] Eli Tan, *Their Water Taps Ran Dry When Meta Built Next Door,* THE NEW YORK TIMES, (July 14, 2025),

www.nytimes.com/2025/07/14/technology/meta-data-center-water.html.

[34] Enock Ebbah, *supra* note 22.

Volume-2, Issue-3 *Pages: 397-435*

consume six times more water than Denmark, a country of 6 million, according to one estimate.[35] It is further estimated that AI's projected water usage could hit 6.6 billion[3] by 2027.[36]

Moreover, AI can be responsible for further damage to our environment through the harmful waste released into the water bodies and soil as a result of its production and use. A UNEP report has revealed that the microchips that power AI need rare earth elements, which are often mined in environmentally destructive ways.[37] The mining and production of the metals used in the production of AI hardware such as cobalt, silicon and gold, can lead to soil erosion and pollution.[38] More water usage by the AI data centres results in more wastewater discharge, which has the potential to pollute public water sources or make public water treatment operations more difficult.[39] These data centres are also known to produce electronic waste, which often contain hazardous substances such as mercury and lead. This can amount to not only the pollution of our water bodies, but also soil degradation, since the polluted water can

[35] Pengfei Li et al, *Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models* ARXIV, (Mar. 26, 2025) https://arxiv.org/pdf/2304.03271.

[36] Cindy Gordon, *AI is Accelerating the Loss of Our Scarcest Natural Resource: Water*, FORBES, (Feb. 25, 2024), www.forbes.com/sites/cindygordon/2024/02/25/ai-is-accelerating-the-loss-of-our-scarcest-natural-resource-water/.

[37] United Nations Environment Programme and International Science Council, *Navigating New Horizons: A Global Foresight Report on Planetary Health and Human Wellbeing* (2024) Nairobi.

[38] Yale School of the Environment, *Can We Mitigate AI's Environmental Impacts?* YALE SCHOOL OF THE ENVIRONMENT, (Oct. 10, 2024),

https://environment.yale.edu/news/article/can-we-mitigate-ais-environmental-impacts.

[39] Ganesh Hedge, *AI Data Centers, Wastewater Discharge, and the Growing Need for Effective Water Management*, KETOS.CO, (July 10, 2024),

https://ketos.co/ai-data-centers-wastewater-discharge-and-the-growing-need-for-effective-water-management.

seep into the ground. In addition, the pollution of these water bodies can lead to health issues among the public that consume the water, especially among the persons in surrounding communities.[40]

Furthermore, AI is rapidly becoming one of the largest contributors to greenhouse emissions and is thus exacerbating climate change. The data centres which host AI technology require a lot of energy which is sourced from fossil fuel combustion. The latter generates greenhouse gas emissions, which contributes to climate change.[41] The International Energy Agency estimates have revealed that data centres that power AI consume energy comparable to the entire country of Japan.[42] According to a report by the same institution, a request made through ChatGPT consumes 10 times the electricity of a Google Search.[43] In 2024, Google released an 86-page sustainability report which revealed that its greenhouse gas emissions rose by 48% since 2019 and attributed the said surge to its data centre energy consumptions and supply chain emissions. The construction of AI data centres is only going to increase with time and so will the need for more energy. Currently, there are more than 7,000 data centres

[40] *Id.*

[41] Yale School of the Environment, supra note 38.

[42] International Energy Agency, *AI is set to drive surging electricity demand from data centres while offering the potential to transform how the energy sector works*, IEA - INTERNATIONAL ENERGY AGENCY, (Apr. 10, 2025),

www.iea.org/news/ai-is-set-to-drive-surging-electricity-demand-from-data-centres-while-offering-the-potential-to-transform-how-the-energy-sector-works.

[43] International Energy Agency, *Electricity 2024: Analysis and Forecast to 2026*, INTERNATIONAL ENERGY AGENCY, (Jan. 2024),

https://iea.blob.core.windows.net/assets/6b2fd954-2017-408e-bf08-952fdd62118a/Electricity2024-Analysisandforecastto2026.pdf; Goldman Sachs, *AI is poised to drive 160% increase in data center power demand*, GOLDMAN SACHS, (May 14, 2024),

www.goldmansachs.com/insights/articles/AI-poised-to-drive-160-increase-in-power-demand.

Volume-2, Issue-3 *Pages: 397-435*

worldwide.[44] This is a massive increment from the 3,600 data centres that existed in 2015, exactly ten years ago.[45] It has been estimated that by the end of 2025, energy consumption by AI systems could approach up to 49% of total datacentre power consumption.[46] All these pieces of information, predictions and estimates point to the undeniable fact that greenhouse emissions, which are already at a record high, are being escalated by the production and use of AI and its components. The world is already at a critical point when it comes to climate change, with scientists warning of dire, irreversible consequences if there are no effective mitigation efforts to the climate crisis. Although commendable steps have been taken nationally, internationally and personally to reduce global emissions, the production and use of AI without any environmentally friendly precautions make it a huge setback to the budding progress made.

In addition, AI is capable of being used to spread false information about environmental issues. In 2024, The World Economic Forum identified AI-generated misinformation and disinformation as the world's greatest threat, followed by climate change.[47] The components that make AI so formidable, including its speed, scalability and the ability to make human-like content, also make it a potent tool for spreading

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[44] Bloomberg, *AI is Already Wreaking Havoc on Global Power Systems*, BLOOMBERG, (June 21, 2024), www.bloomberg.com/graphics/2024-ai-data-centers-power-grids/?srnd=undefined&sref=h2AwP2mF.

[45] Dara Kerr, *AI brings soaring emissions for Google and Microsoft, a major contributor to climate change*, NPR, (July 12, 2024), www.npr.org/2024/07/12/g-s1-9545/ai-brings-soaring-emissions-for-google-and-microsoft-a-major-contributor-to-climate-change.

[46] Alex de Vries-Gao, *Artificial Intelligence: Supply chains constraints and energy implications*, 9 Cell J (2025).

[47] World Economic Forum, *Global Risks Report 2024,* WORLD ECONOMIC FORUM, (Jan. 10, 2024), www3.weforum.org/docs/WEF_The_Global_Risks_Report_2024.pdf.

Volume-2, Issue-3 *Pages: 397-435*

climate disinformation.[48] The International Energy Agency, in its special report titled, "Energy and AI", suggests that AI could worsen the spread of climate disinformation by enabling climate deniers to easily create and spread false content across social media and search engines.[49] They will also allow climate disinformation professionals and the fossil fuel industry to build on their decades of disinformation campaigns for greenwashing purposes[50]. In the United States, the Centre for Countering Digital Hate conducted an experiment where it tested Gemini, the AI Chatbot created by Google on 100 false narratives on a variety of topics. Gemini provided misinformation in 78 out of the 100 narratives and all the information produced climate-related narratives were false.[51] A few years ago, AI models were successfully used to falsely blaming wind power as a cause of whale deaths in New Jersey [52] or power outages in Texas.[53]

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[48] Earth Day, *The Double-Edged Sword of AI and the Battle against Climate Change Information*, EARTH DAY, (May 30, 2025),

www.earthday.org/the-double-edged-sword-of-ai-and-the-battle-against-climate-change-misinformation/.

[49] International Energy Agency, *Energy and AI*, INTERNATIONAL ENERGY AGENCY, (Apr. 10, 2025),

https://iea.blob.core.windows.net/assets/601eaec9-ba91-4623-819b-4ded331ec9e8/EnergyandAI.pdf.

[50] Jeffery Pierre & Scott Neuman, *How decades of disinformation about fossil fuels halted U.S. climate policy*, NPR, (Oct. 27, 2021),

www.npr.org/2021/10/27/1047583610/once-again-the-u-s-has-failed-to-take-sweeping-climate-action-heres-why.

[51] Earth Day, *supra* note 48.

[52] Ilana Berger, *Misinformation about recent whale deaths dominated discussions of offshore wind energy on Facebook*, MEDIA MATTERS FOR AMERICA, (Mar. 23, 2023),

www.mediamatters.org/facebook/misinformation-about-recent-whale-deaths-dominated-discussions-offshore-wind-energy.

[53] Friends of the Earth, *Four Days of Texas-Sized Disinformation: Social Media Companies Threaten Action on Climate Change*, FRIENDS OF THE EARTH, (August, 2021),

https://foe.org/wp-content/uploads/2021/08/Texas_Disinfo_Report_final_v4.pdf.

Volume-2, Issue-3 *Pages: 397-435*

It is only a matter of time before AI is used to spread misinformation and disinformation with respect to other environmental issues, such as pollution, deforestation, rising sea levels, oil spills and others. In a world where media literacy appears to be at its lowest and anti-intellectualism is skyrocketing, the misinformation about the environment championed by AI could be the reason for regressions in the strides made towards conserving the environment as well as for the escalation of its degradation.

4. THE REGULATION OF AI:

The increased use of AI worldwide has led to the need for regulation. Consequently, there has been the emergence of laws and policies and strategies to regulate the technology in respective territories. Currently, out of 195 countries, over 70 countries are on the path to taking steps toward AI regulation.[54]

In the European continent, the European Union, on March 13, 2024, formally adopted the EU Artificial Intelligence Act.[55] This is the first law ever governing Artificial Intelligence. The United Kingdom does not have a specific AI Act. However, the existing laws such as the Equality Act[56] and the UK General Data Protection Regulation[57] are applied to AI.[58] The UK government's AI Regulation White Paper of

[54] OECD, *OECD AI Policy Observatory: National AI Policies*, OECD, (2025), https://oecd.ai/en/dashboards/overview

[55] Regulation (EU) 2024/1689 (Artificial Intelligence Act) [2024] OJ L2024/1689.

[56] Equality Act, 2010.

[57] Regulation (EU) 2016/679 (UK GDPR).

[58] Patrick Brione & Devyani Gajjar, *Artificial intelligence: ethics, governance and regulation*, UK PARLIAMENT, (Oct 7, 2024), https://post.parliament.uk/artificial-intelligence-ethics-governance-and-regulation/.

Volume-2, Issue-3 *Pages: 397-435*

August 3, 2023 (the "White Paper") and its written response of February 6, 2024 to the feedback it received as part of its consultation on the White Paper (the "Response") both indicate that the UK does not intend to enact horizontal AI regulation in the near future. Instead, the White Paper and the Response support a "principles-based framework" for existing sector-specific regulators to interpret and apply to the development and use of AI within their domains. The UK government announced plans to introduce legislation in 2025 to address AI risks, making voluntary agreements with AI developers legally binding and granting independence to the AI Safety Institute. On January 13, 2025, the UK Labor government launched a detailed AI action plan setting out steps that the UK aims to take, with the goal of boosting economic efficiency and growth, including dedicated AI growth zones, new infrastructure, and a National Data Library. On March 4, 2025, the Artificial Intelligence (Regulation) Private Members' Bill ("the Bill") was re-introduced into the House of Lords after failing to become law under the previous government. This Bill, if enacted, would require the Secretary of State to create the "AI Authority", which would create a new regulatory body that would regulate AI according to the approach outlined in the Bill.[59]

In North America, the United States, to be specific, there is no federal legislation which explicitly governs the development and deployment of AI across all sectors. However, at the State level, the States of Colorado, California, New York, Illinois, Maryland, Texas and Virginia have either enacted or are in the process of enacting laws on AI

[59] White & Case, *AI Watch: Global regulatory tracker - United Kingdom*, WHITE & CASE LLP, (Nov. 25, 2025),www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-united-kingdom.

regulation. Most of the enacted laws are to take effect January 1, 2026.[60] Canada was one of the first countries to propose a law to regulate Artificial Intelligence.[61] The law known as the Artificial Intelligence and Data Act (AIDA), however, never saw the light of day, with it languishing and dying in a parliamentary committee after failing to secure the confidence and political will needed to proceed through the legislative process.[62] The state of Mexico is yet to have any comprehensive AI regulation. Since 2020, however, over 60 bills have been introduced in the Mexican Congress seeking to regulate AI.[63]

In Asia, South Korea passed the Framework Act on Artificial Intelligence Development and Establishment of a Foundation for Trustworthiness[64] or simply, the AI Framework Act to take effect on 22 January 2026.[65] China has not only extended its

[60] The Brightmine Editorial Team, *AI laws by state and locality | 50-state chart,* BRIGHTMINE, (Dec. 9, 2025), www.brightmine.com/us/resources/hr-compliance/ai-laws-by-state-and-locality/.

[61] Innovation, Science and Economic Development, *Artificial Intelligence and Data Act*, INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT, (Dec. 9, 2025),

https://ised-isde.canada.ca/site/innovation-better-canada/en/artificial-intelligence-and-data-act.

[62] Blair Attard-Frost, *The Death of Canada's Artificial Intelligence and Data Act: What Happened, and What's Next for AI Regulation in Canada?*, MONTREAL AI ETHICS INSTITUTE, (Jan. 17, 2025), https://montrealethics.ai/the-death-of-canadas-artificial-intelligence-and-data-act-what-happened-and-whats-next-for-ai-regulation-in-canada/.

[63] Kimberly Breier et al, *New Artificial Intelligence Legislation in Mexico*, GLOBAL POLICY WATCH, (Mar. 14, 2025), www.globalpolicywatch.com/2025/03/new-artificial-intelligence-legislation-in-mexico/.

[64] Framework Act on the Development of Artificial Intelligence and Establishment of Trust, 2024 (South Korea)

[65] Sakshi Shivhare & Kwang Bae Park, *South Korea's New AI Act: A Balancing Act Between Innovation and Regulation,* THE FUTURE OF PRIVACY FORUM, (Apr. 18, 2025),

https://fpf.org/blog/south-koreas-new-ai-framework-act-a-balancing-act-between-innovation-and-regulation/.

Volume-2, Issue-3 *Pages: 397-435*

existing laws on cybersecurity and personal information protection to apply to AI,[66] but also taken some AI-centered legal measures, which include, passing the Interim Administrative Measures for Generative Artificial Intelligence Services Act,[67] and the Provisions on the Administration of Deep Synthesis Internet Information Services[68] which govern the use of AI technology that produces synthetic content such as Deepfakes. Both have been in force since 2023.

South America also appears to be taking steps towards AI regulation, with Peru in the lead. In September 2025, Peru approved Law 31814, whose purpose is revealed by its official title, "Law that promotes the use of artificial intelligence in favour of the economic and social development of the country." Brazil, Argentina, Chile and Colombia, have AI regulations that are either under review or on the verge of being enacted.[69]

As far back as 2017, the UAE in the Middle East was the first country ever to appoint a Minister of State for Artificial Intelligence and launched a National AI Strategy.[70] It

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[66] Cybersecurity Law of the People's Republic of China 2017 (China); Personal Information Protection Law of the People's Republic of China 2021 (China).

[67] Interim Administrative Measures for Generative Artificial Intelligence Services Act 2023 (China).

[68] Provisions on the Administration of Deep Synthesis Internet Information Services 2023 (China).

[69] Andrés Mosqueira & Shaanty Emmanuel Rubio Gonzalez, *Foster innovation or mitigate risk? AI regulation in Latin America*, WHITE & CASE LLP, (Nov. 18, 2024),

www.whitecase.com/insight-our-thinking/latin-america-focus-2024-ai-regulation#:~:text=Governments%20in%20the%20region%20are,innovation%20and%20attract%20foreign%20investment.; The Xenoss Editorial Team, *AI regulation in Latin America (LATAM): Brazil leads*, XENOSS, (May 22, 2025),

https://xenoss.io/blog/latin-america-latam-ai-regulations#:~:text=AI%20is%20gaining%20momentum%20across,%2C%20healthcare%2C%20and%20public%20services.

[70] UAE Government, *UAE Strategy For Artificial Intelligence*, UAE GOVERNMENT, (Dec. 30, 2024), https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/government-services-and-digital-transformation/uae-strategy-for-artificial-

has since then introduced in 2022 AI Ethics Principles and Guidelines to promote the ethical design and use of AI systems and a Charter for the Development and Use of AI in 2024 which sets out twelve principles for inclusive, responsible AI adoption.[71] In the Kingdom of Saudi Arabia, there are currently no operative AI laws in existence. That being said, AI is a core pillar of Saudi Arabia's Vision 2030 in which 66 of 96 strategic objectives set out in the plan are in respect of AI and data.[72] The strategy includes, but is not limited to the creation of a regulatory environment that will position Saudi Arabia as a forward-thinking jurisdiction for the adoption of AI. Saudi Arabia has created a specific authority known as the Saudi Data and Artificial Intelligence Authority (SDAIA) which developed the National Strategy for Data and AI.[73] The two specific major developments in AI-related jurisprudence in Saudi Arabia occurred in 2023. First, in April of that year, the Saudi Authority for Intellectual Property (SAIP) published a draft set of amendments to intellectual property legislation for public consultation. The draft contained a section on intellectual property rules on AI titled, "AI-related IP and emerging technologies, and supporting their motivation."[74] In September 2023, the SDAIA issued the final version of its AI

intelligence#:~:text=The%20UAE%20Strategy%20for%20Artificial,market%20with%20high%20economic%20value.

[71] Smart Dubai, *AI Ethics Principles and Guidelines*, DIGITAL DUBAI AUTHORITY, www.digitaldubai.ae/docs/default-source/ai-principles-resources/ai-ethics.pdf.

[72] Kingdom of Saudi Arabia, *Vision 2030*, SAUDI VISION 2030, www.vision2030.gov.sa/en/explore/story-of-transformation.

[73] Saudi Data and Artificial Intelligence Authority, *National Strategy for Data and AI*, SAUDI DATA AND ARTIFICIAL INTELLIGENCE AUTHORITY, (Oct., 2020), https://sdaia.gov.sa/en/SDAIA/SdaiaStrategies/Pages/NationalStrategyForDataAndAI.aspx.

[74] Brian Meenagh and others, *In Depth: Artificial Intelligence | Saudi Arabia,* LATHAM & WATKINS LLP, (Jan. 17, 2024),

Ethics Principles,[75] which represents the first AI legal framework in Saudi Arabia. Additionally, SDAIA has also issued two Generative AI Guidelines (the "Guidelines"), both dated January 1, 2024. The first version is directed toward government employees (the "Government Guidelines"). The second version is for the public (the "Public Guidelines").[76] These Guidelines also do not have the force of law but serve as guidance. Enforcement and penalties relating to the creation, dissemination and/or use of AI are governed by the Royal Order establishing the SDAIA, which grants the SDAIA the overarching power to monitor and regulate AI in the Kingdom.[77]

In Africa, many countries are at the ground zero stage in AI regulation, with the traces of eventual AI regulation being envisioned in AI Strategies. Mauritius was the first country to publish the Mauritian AI Strategy as far back as 2018.[78] Other countries such as Nigeria, Rwanda, Egypt, South Africa and Ghana have had National AI Strategies since 2023.[79] In January 2025, Kenya launched the Draft National AI Strategy 2025-2030 aimed at positioning Kenya as a regional AI Hub.[80] The African

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www.lw.com/admin/upload/SiteAttachments/Lexology-In-Depth-Artificial-Intelligence-Law-Saudi-Arabia.pdf

[75] Saudi Data and Artificial Intelligence Authority, *AI Ethics Principles,* SAUDI DATA AND ARTIFICIAL INTELLIGENCE AUTHORITY, (Sept., 2023), Principle 4,

https://sdaia.gov.sa/en/SDAIA/about/Documents/ai-principles.pdf.

[76] White & Case, *AI Watch: Global regulatory tracker - Saudi Arabia,* WHITE & CASE LLP, (June 20, 2024), www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-saudi-arabia.

[77] *Id.*

[78]Government of Mauritius, *Mauritius AI Strategy,* GOVERNMENT OF MAURITIUS, (2018), https://treasury.govmu.org/Documents/Strategies/Mauritius%20AI%20Strategy.pdf.

[79]African Union, *Continental Artificial Intelligence Strategy*, AFRICAN UNION, (Aug. 9, 2024), https://au.int/sites/default/files/documents/44004-doc-EN-_Continental_AI_Strategy_July_2024.pdf.

[80] Ministry of ICT and the Digital Economy, *Kenya Artificial Intelligence Strategy 2025-2030*, MINISTRY OF ICT AND THE DIGITAL ECONOMY, (Mar. 27, 2025),

Volume-2, Issue-3 *Pages: 397-435*

Union (AU) in 2024 introduced the African Union (AU) Continental AI Strategy which seeks to prioritise the development and adaptation of AI systems to Africa's Context.[81] Although some of these strategies are yet to be implemented and some individual African countries are yet to make any pronouncement on AI regulation, the steps taken so far makes AI regulation in Africa one with a promising future.

At the international level, the Organisation for Economic Co-operation and Development ("OECD") developed the OECD AI principles which were adopted in May 2019 and amended in 2024.[82] The OECD Principles outline five value-based principles and five recommendations for policy makers. The principles are inclusive growth, sustainable development and well-being; respect for the rule of law, human rights and democratic values; transparency and explainability; robustness, security and safety and accountability.[83] These principles are a benchmark for creating AI systems that contribute positively to society and safeguard human rights.[84] The OECD AI Principles also promote use of AI in a manner that is innovative and trustworthy and that respects human rights and democratic values and set standards for AI that are practical and flexible enough to stand the test of time.[85] They guide AI actors in their efforts to develop trustworthy AI and provide policymakers with

www.ict.go.ke/sites/default/files/2025-03/Kenya%20AI%20Strategy%202025%20-%202030.pdf.

[81] African Union, *Continental Artificial Intelligence Strategy*, AFRICAN UNION, (Aug. 9, 2024), https://au.int/sites/default/files/documents/44004-doc-EN-_Continental_AI_Strategy_July_2024.pdf.

[82] OECD, *AI Principles*, OECD (2019), https://oecd.ai/en/ai-principles.

[83] *Id.*

[84] Dirk Brand, 'OECD AI Principles, Edition 1.0 Research' (Rutgers AI Ethics Lab, 28 February 2025), https://aiethicslab.rutgers.edu/glossary/oecd-ai-principles/.

[85] OECD, *AI Principles*, OECD, (2019), www.oecd.org/en/topics/sub-issues/ai-principles.html.

recommendations for effective AI policies. Countries and organizations use the OECD AI Principles and related tools to shape policies and create AI risk frameworks, building a foundation for global interoperability between jurisdictions. This is evident in the AI frameworks of Europe, the United States and the United Nations and other jurisdictions who use the OECD's definition of an AI system and lifecycle.[86] In addition to these principles on AI under international law are the Guidelines for the Use of AI Systems in Courts and Tribunals developed by UNESCO, which has already indicated, were not only first adapted by Colombia, but also used by the country as the blueprint for its Guidelines for the Responsible and Safe Use of Generative AI in the Judicial Branch.

Undoubtedly, therefore, there have been worldwide efforts towards the regulation of the production and use of AI ranging from budding strategies to nearly comprehensive legal frameworks soon to be implemented.

4.2 AI Regulation and the Negative Environmental Impact of AI

The question still lingers on whether AI regulation so far has addressed the negative effects of AI on the environment and sought to regulate them or instead perpetuate said effects, whether actively or by its lukewarm consideration or non-consideration of AI impact on the environment.

The EU Artificial Intelligence Act has been criticized for not responding effectively to the AI industry's significant environmental impacts. Article 40 of the Act states that the Commission should request standardisation bodies to provide deliverables on reporting and documentation processes to improve AI systems resource performance.

[86] National Contact Point, *OECD AI Principles*, OECD AI POLICY OBSERVATORY, (July 9, 2025), https://oecd.ai/en/dashboards/policy-initiatives/oecd-ai-principles-9705.

Volume-2, Issue-3 *Pages: 397-435*

These include standards for reducing the high-risk AI system's consumption of energy and other resources consumption during its lifecycle and on energy-efficient development of general-purpose AI models'.[87] This provision has been criticised as problematic because relying on standardisation bodies to provide environmental standards may prove not only time consuming, but also insufficient because a significant proportion of members of these bodies come from for-profit organisations and thus incentivising solutions that are less environmentally impactful but increase costs might be a challenge. Also, Article 40 only specifying energy expenditure and categorizing all other environmental impacts of AI systems as just the consumption of 'other resources', creates a level of vagueness that makes it very easy for the standards to not sufficiently cover AI impacts that go beyond energy consumption. Lastly, the facts that adherence to these standards is voluntary makes it very difficult to ensure positive results.[88] In the UK, there have been calls for the government to take the lead in ensuring that the general effect of AI on the planet is not negative.[89] Notwithstanding being the third largest AI market in the world presently,[90] and the actions that have been done or are being done towards AI regulation, there does not seem to be any notable moves which ensure that AI is used sustainably in the UK.

[87] Regulation (EU) 2024/1689 (Artificial Intelligence Act) [2024] OJ L2024/1689, art 40.

[88] José Renato Laranjeira de Pereira, *The EU AI Act and environmental protection: the case for a missed opportunity*, HEINRICH BOLL STIFTUNG | BRUSSELS OFFICE, (Apr. 8, 2024),

https://eu.boell.org/en/2024/04/08/eu-ai-act-missed-opportunity.

[89] Matthew Gooding, *Legislation proposed in Virginia to regulate data centers, ease grid concerns*, DATA DENTER DYNAMICS, (Jan. 20, 2025),

www.datacenterdynamics.com/en/news/virginia-data-center-laws/.

[90] Department for Science, Innovation and Technology, *AI Opportunities Action Plan,* (Crown copyright 2025).

Volume-2, Issue-3 *Pages: 397-435*

In February 2024, lawmakers in the United States introduced the Artificial Intelligence Environmental Impact Act of 2024. To date, the bill is still in committee. The Act, if passed, would mandate the U.S Environmental Protection Agency (EPA) to conduct a study centering the positive and negative environmental impacts of AI application.[91] It would also require the Director of the National Institute of Standards and Technology (NIST) to convene a consortium of stakeholders from various fields who would provide recommendations for mitigating the negative environmental impacts and require the Director to develop a voluntary reporting system for companies to disclose the environmental impacts of their artificial intelligence systems.[92] This law could go a long way to effectively address the negative environmental impacts of AI use, but there are still some gaps worth addressing. It is important to note that the reporting system by the NIST is voluntary, thus giving companies the chance to refuse to disclose any information on the environmental impacts of their AI system or understate the said information that they choose to tender. This may stagnate the proper implementation of the Act and thus fail to properly mitigate the negative environmental effects of AI. In addition to all this, the bill has not been reintroduced in the 119th Congress. At the state level, the State of Virginia, in light of growing

[91] Jillian Kunze, *Environmental Impacts of Artificial Intelligence: Peril, Promise, and Policy*, SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS, (Oct. 4, 2024), www.siam.org/publications/siam-news/articles/environmental-impacts-of-artificial-intelligence-peril-promise-and-policy/#:~:text=Potentially%20Beneficial%20Applications%20of%20AI,detrimental%20behaviors%20like%20hyper%2Dconsumption.

[92] *Artificial Intelligence Environmental Impacts Act 2024*, S.3732 (118th Congress).

Volume-2, Issue-3 *Pages: 397-435*

concerns about resource consumption, sustainability and land use,[93] appears to be considering legislation which mandates data centres to submit water use estimates. In December 2024, Virginia's Joint Legislative Audit and Review Commission (JLARC) recommended in its report[94] that data centres report their energy and water usage to address the strain these facilities place on infrastructure and resources.[95] Also, a previous attempt[96] by the same group of politicians to introduce data centre legislation in Virginia stalled last year. Since then, another Virginia bill was introduced which proposed a mandatory review and approval process from the State Corporation Commission (SCC) for data centre developments exceeding 100 megawatts to ensure grid reliability. However, the House Labour and Commerce Committee unanimously voted against the bill, expressing concerns that it might deter data centre investments in the state.[97] Additionally, House Bill 2035, introduced in the Virginia General Assembly, would require data centres to report quarterly on water and energy use to the Department of Environmental Quality, with the information made publicly

[93] Aliya Uteova, *We're mowed over': colossal data centers are taking over the US countryside*, THE GUARDIAN, (June 5, 2023),

www.theguardian.com/us-news/2023/jun/05/virginia-historic-preservation-data-center-development.

[94] Joint Legislative Audit and Review Commission, *Data Centers in Virginia*, 2024 JLARC Report 598.

[95] Patrick Temple West, *Big Tech under pressure to act on data centres' thirst for water*, FINANCIAL TIMES, (Mar. 21, 2025),

www.ft.com/content/65fff689-bd47-4c15-bdb8-083e5ccd84dc.

[96] Dan Swinhoe, *Virginia lawmakers propose new bills limiting data center development*, DATA CENTER DYNAMICS, (Jan. 15, 2024),

www.datacenterdynamics.com/en/news/virginia-lawmakers-propose-new-bills-limiting-data-center-development/.

[97] Matthew Gooding, *supra* note 88.

accessible.[98] Although this looks promising, a look into the history of the treatment of AI data centres by the Virginia government shows that they still have a long way to go in ensuring AI regulation is geared to environmental conservation and protection. Although other states are on course in the road to AI regulation, as precedingly assessed, it seems as though Virginia is the only state that has taken several steps further to acknowledge the negative environmental impacts of AI use and make attempts to mitigate them with the law, albeit unsuccessfully.

In Asia, it could be argued that South Korea is the pacesetter in the use of AI regulation to address the negative environmental impacts of AI. The country's AI Act requires that AI business operators providing products or services using high-impact AI shall make efforts to assess in advance the impact of this system on basic human rights[99], that is, conduct impact assessments. A high impact AI system is an AI system that has the potential to significantly impact human life, safety, or fundamental rights.[100] In South Korea, the law recognises the right to a healthy and agreeable environment as a human right.[101] The inference could therefore be drawn that institutions that use high-impact AI systems are required to ensure that their impact assessments include an environmental impact assessment in order to uphold the human right to a healthy and agreeable environment. It is important, however, to note that the AI Act only indicates that an "impact assessment" must be conducted and that other necessary matters concerning the specific content and methods of the impact assessments shall be prescribed by Presidential Decree. There are various types of impact assessment,

[98] Matthew Gooding, *supra* note 88.

[99] *supra*, note 63, art 35.

[100] *supra*, note 63, art 3.

[101] Framework Act on Environmental Policy, 2011 (South Korea).

Volume-2, Issue-3 *Pages: 397-435*

including social impact assessment, health impact assessment, cultural heritage impact assessment, human rights impact assessment and environmental impact assessment.[102] The failure of the Act to explicitly require the conduct of a traditional environmental impact assessment provides the AI institutions with the opportunity to manoeuvre their way around conducting this particular kind of assessment in fulfilment of their impact assessment obligation. Despite its shortcomings, South Korea is commendable as compared to the efforts or lack thereof of other Asian countries to enact laws addressing the negative effects of AI on the environment.

In South America, Peru's landmark AI law does not appear to address the negative impact of AI on the environment. The long title of the Act "Law that promotes the use of artificial intelligence in favour of the economic and social development of the country" is a clear giveaway that the main aims of the law does not cater to addressing the AI environmental impacts is not one of them. While the law references "ethical, sustainable, and transparent" AI and affirms respect for human rights, these references are declarative,[103] thus hindering any practical legal steps to curb the negative environmental impacts. Colombia in December 2024 made history by being the first country to adapt UNESCO's Guidelines for AI Use in Judicial Systems.[104] The

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[102] International Association for Impact Assessment, *Impact Assessment*, INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSEMENT,

https://iaia.org/impact-assessment/#:~:text=taken%20into%20account.-,Types%20of%20IA,Cumulative%20Effects%20Assessment%20(CEA).

[103] Sebastian Smart & Victor M. Montori, *Peru's AI Regulatory Boom: Quantity Without Depth*, HARVARD KENNEDY SCHOOL, (Apr. 23, 2025),

www.hks.harvard.edu/centers/carr-ryan/our-work/carr-ryan-commentary/perus-ai-regulatory-boom-quantity-without-depth.

[104] UNESCO, *Colombia - Case Studies - Technology Policy Assistance Facility*, TECHNOLOGY POLICY ASSISTANCE FACILITY,

Volume-2, Issue-3 *Pages: 397-435*

guidelines, shaped by the UNESCO Recommendation on the Ethics of AI, aim to ensure AI technologies are integrated into judicial systems in a way that upholds justice, human rights and the rule of law.[105] In Figure No.2 of the guidelines, certain recommendations are given to courts, tribunals and judiciary authorities that intend to assess, develop, adopt, use and evaluate AI systems. One of such recommendations is that the judiciary should consider the substantial environmental footprint of the development, deployment and usage of certain AI systems.[106] Pursuant to these guidelines, the Guidelines for the Responsible and Safe Use of Generative AI in the Judicial Branch were developed in Colombia in collaboration with UNESCO and the Superior Council of the Judiciary. They provide practical guidance on implementing AI ethically across different judicial cases, ensuring that AI strengthens justice systems while upholding human rights and judicial integrity. Though monumental, with these guidelines emphasising transparency, accountability, and human oversight in AI applications within the judiciary, there is not much regard for the impact of AI on the environment, thus failing to build on the UNESCO guidelines and ensure on a national level a proper acknowledgment of the environmental footprint of AI.[107] In Brazil, although its AI regulation is yet to be passed, it appears to be on the right track with one of the foundational values in the Act which form the backbone of AI development, deployment, and usage in Brazil being environmental protection and

https://g20techpolicy.unesco.org/en/casestudies/colombia.

[105] UNESCO, *Guidelines for the Use of AI systems in Courts and Tribunals*, UNESCO, (2025).

[106] *Id*, Figure 2.1.8.

[107] UNESCO, *Justice meets innovation: Colombia's groundbreaking AI guidelines for courts*, UNESCO, (Feb. 25, 2025),

www.unesco.org/en/articles/justice-meets-innovation-colombias-groundbreaking-ai-guidelines-courts

Volume-2, Issue-3 *Pages: 397-435*

sustainable development. Brazil's inclusion of detailed principles ensures a more actionable framework for AI governance, particularly for businesses looking to ensure their AI systems are compliant with both legal and ethical standards.[108] Countries such Argentina and Chile, also indicate that in South America, there is still hope for the environment in terms of AI use, with these countries set to pass AI bills that anticipate the environmental impacts of AI and ensure sustainable development.[109]

In the Middle East, the UAE has made it clear its international policy stance on artificial intelligence, acknowledging the growing energy consumption associated with the rapid expansion of AI applications and stating that it plays a responsible role by participating in platforms that contribute to the development of international standards for AI sustainability.[110] Commendable as this may be, it is important to note that its international stance is not binding and the national principles and charter adopted by the UAE do not have any specific binding obligations reflecting this stance, thus hindering any practical steps to curb the negative environmental impact of AI. For a country that has established itself as a pioneer in AI governance, the lack of binding AI legislation to address the environmental impact of this technology is

[108] Daniela Atanasovska and Lejla Robeli, *Brazil's AI Act: A New Era of AI Regulation*, GDPR LOCAL, (Feb. 26, 2025),

https://gdprlocal.com/brazils-ai-act-a-new-era-of-ai-regulation/.

[109] Oxford Institute of Technology and Justice, *Argentina | Focused AI adoption with expansion*, UNIVERSITY OF OXFORD, (Oct. 2, 2025), www.techandjustice.bsg.ox.ac.uk/research/argentina; UNESCO, *Chile launches a national AI policy and introduces an AI bill following UNESCO's recommendations*, UNESCO, (Oct. 10, 2024), www.unesco.org/en/articles/chile-launches-national-ai-policy-and-introduces-ai-bill-following-unescos-recommendations-0.

[110] Government of United Arab Emirates, *UAE's International Stance on Artificial Intelligence Policy*, UAE LEGISLATION, (Sept., 2024),

https://uaelegislation.gov.ae/en/policy/details/uae-s-international-stance-on-artificial-intelligence-policy.

Volume-2, Issue-3 *Pages: 397-435*

rather regressive. Saudi Arabia is on the path to doing an impressive job through its AI principles. The principles recognise that AI should not cause or accelerate any harm to the human beings and the environment and therefore environmental sustainability is to be prioritised in the use of AI Systems.[111] In order to ensure this, the AI ethics principle obliges the owners of AI systems to make sure that the systems are planned and designed, developed and used in an environmentally sustainable manner. In addition, the AI system owner is required to ensure the continuous assessment of the human, social, cultural, economic and environmental impact of AI technologies.[112]

In Africa, Mauritius has a comprehensive AI strategy that in a way reflects the United Nations Sustainable Development Goals (SDGs). It also provides a clear linkage to several SDGs as the key targets of the strategy such as SDG 8 (Decent work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure) as well as SDG 11 (Sustainable Cities and Communities). It is recognised in Mauritius that there is a rise in energy consumption as a result of AI data centres and computing infrastructure. A 2024 study carried out at University of Mauritius says that ICT sector's electricity consumption as a percentage of the total country's electricity consumption stood at 5% in 2018 and is projected to rise to 8% by 2023 with the AI applications contributing immensely to this growth. To address these challenges, the government set up energy efficiency standards for data centres and encouraged the adoption of renewable energy in the IT industry.[113] However, these moves do not

[111] Saudi Data and Artificial Intelligence Authority, *AI Ethics Principles*, SAUDI DATA AND ARTIFICIAL INTELLIGENCE AUTHORITY, (Sept. 2023), Principle 4, https://sdaia.gov.sa/en/SDAIA/about/Documents/ai-principles.pdf.

[112] *Id.*

[113] Reeshabh Shayan Tupsee et al, *AI For Sustainable Growth; A Case Study of Mauritius' Strategic Vision*, The SPRING GROUP, 2024.

Volume-2, Issue-3 *Pages: 397-435*

create any mandatory legal obligation on institutions that produce and use AI, thus still requiring specific regulations to address the negative impacts of AI on the environment in Mauritius. In Ghana, in spite of the recognition of sustainable development in the country's AI National Strategy, AI is regarded as a means to achieve sustainable development and not that which could pose a risk to it.[114] Although the risks of AI are recognised, they are risks that may compromise security, safety, privacy, and human rights, as well as cause biased decision-making, the widening of inequality gaps and data abuse. The risk of AI to the environment is in no way addressed. It is therefore safe to draw the conclusion that if this AI Strategy served as the blueprint for AI legislation in Ghana, it would fail to regard the negative environmental impacts of such technology. The same can unfortunately said for Rwanda, South Africa, Egypt and even the African Union, whose national and continental strategies recognise AI as a tool to achieve sustainable development and not the enabler of environmental destruction and climate change that must thus be regulated. Nigeria's draft National Artificial Intelligence Strategy ("NAIS") is by far the most environmentally conscious framework in Africa. NAIS specifically recognises that AI's energy and resource consumption warrants a specific focus on green and sustainable AI initiatives and therefore provides strategies to support Green AI by establishing a Green AI challenge and grant competition and fostering adoption of green AI projects and innovations across sectors.[115] The downside to all this is that the AI strategy is still in the draft stage, thus delaying the possibility of specific legal

[114] Ministry of Communications and Digitalisation with Smart Africa et al, *Republic of Ghana National Artificial Intelligence Strategy: 2023-2033*, AFRICA DATA PROTECTION, (Oct., 2022), www.africadataprotection.org/Ghana-AI-Strat.pdf.

[115] Government of Nigeria, *National Artificial Intelligence Strategy*, NCAIR, (Aug. 1, 2024), https://ncair.nitda.gov.ng/wp-content/uploads/2024/08/National-AI-Strategy_01082024-copy.pdf.

Volume-2, Issue-3 *Pages: 397-435*

measures to be enacted and implemented in a manner that mandates the production and use of AI in an environmentally conscious, sustainable manner.

At the international level, amongst the OECD AI Principles is the principle titled, "Inclusive growth, sustainable development and well-being".[116] This principle states that, "Stakeholders should proactively engage in responsible stewardship of trustworthy AI in pursuit of beneficial outcomes for people and the planet, such as augmenting human capabilities and enhancing creativity, advancing inclusion of underrepresented populations, reducing economic, social, gender and other inequalities, and protecting natural environments, thus invigorating inclusive growth, well-being, sustainable development and environmental sustainability." According to the OECD AI Policy Observatory, the principle highlights the potential for trustworthy AI to contribute to overall growth and prosperity for all, including individuals, society and the planet and advance global development.[117] The words of the Principle and the Policy Observatory's statement reveal that AI is being regarded as a tool for the attainment of environmental protection and sustainability and sustainable development with no recognition of the harmful effects of AI on the very environment it seeks to protect. The sole beacon of hope in the international community appears to be the UNESCO Guidelines for the Use of AI Systems in Courts and Tribunals. As mentioned earlier, one of the recommendations of UNESCO's Guidelines is that the judiciary should consider the substantial environmental footprint of the development, deployment and usage of certain AI systems.[118] This

[116] OECD, *AI Principles*, OECD, (2019) Principle 1.1, https://oecd.ai/en/ai-principles.

[117] OECD AI Policy Observatory, *Inclusive growth, sustainable development and well-being (Principle 1.1)*, OECD AI Policy Observatory, https://oecd.ai/en/dashboards/ai-principles/P5.

[118] UNESCO, *supra* note 104, at Figure 2.1.8.

recommendation indicates the efforts of the United Nations to not only recognise the negative effects of AI on the environment, but to also call on member states to consider them in the development of their regulatory framework on AI. Although states are not bound by the UNESCO Guidelines and can disregard them as was done by Colombia, the recommendation in Figure 2.1.8 raises enough awareness on the potential environmental effects of AI for states to take notice and consider them when adapting these Guidelines.

4.3 AI Regulation: An Enabler or A Saviour?

It is evident from all of the above that the majority of the existing AI regulations and strategies fail to address the negative environmental impacts of AI. The irony of the matter is that many of these regulations seek to use AI as a mechanism for the achievement of sustainable development while simultaneously turning a blind eye to the irrevocable destruction on the environment by the AI Industry which is bound to be detrimental to not only present, but future generations as well. By not taking active steps to ensure that the production and use of AI is in a more environmentally friendly and sustainable manner, current AI regulations may be regarded as complicit in paving the destructive path upon which the environment is headed.

5. AI REGULATION AND THE ENVIRONMENT: THE WAY FORWARD

States must endeavour to pass laws that take AI from the mainstream use to apply strictly to relevant fields instead. Doing so would cut down the AI use by an impactful margin and in effect reduce the energy and water consumption by AI and the extent of its degradation of the environment.

Volume-2, Issue-3 *Pages: 397-435*

It is conceded that it would not be an easy task in deciding the specific fields in which AI use is to be permitted and those in which it must be exempted. However, it is evident that social media, which has billions of users, must be one of the first areas where the use of AI should be exempted by law. Overtime, there has been a dramatic spike in AI generated content flooding the pages of the various kinds of social media, which is a key indication of the role social media plays in not only hosting and platforming countless AI users, but also encouraging them to produce more AI content as a result of the positive responses that other social media users may leave regarding said content. Once laws are passed banning AI use in social media use, there will be a drastic reduction in the use of ChatGPT and other AI tools as users would be compelled to be more cautious about the type of content they share on these platforms.

Another area where the law could ban AI use and effectively reduce AI use by a large majority of persons is the area of education. Students and academics from the lowest forms of education all the way to the highest levels of academia have been known to use AI for assignments and research purposes. This has resulted in one too many cases of persons getting into serious trouble with the authorities for plagiarism or phantom concepts, theories in their papers or assignments which are riddled with AI use. If states are to liaise with educational institutions to help formulate and enforce laws that restrain AI use in education, it would go a long way to minimize prevalent AI use in our educational institutions and academia.

The use of law to create restrictions in fields, including, but not limited to the ones discussed above, which AI has taken by storm since its creation, would effectively narrow down the fields and to that extent the people that use AI. Consequently, the negative effects of AI on the environment which only keeps escalating over the years due to prevalent users would see a rapid decline in AI use.

Volume-2, Issue-3 *Pages: 397-435*

Further, laws that States pass must ensure that the production and use of AI is done sustainably. These laws must lay out requirements of the conduct of environmental impact assessment and the methods of mining AI resources that are environmentally conscious. The laws must also oblige data centre companies to resort to more green methods. These institutions must be mandated by the law to develop and/or use systems that are able to recycle and reclaim the large amounts of water used in providing power to and cooling the data centers and AI servers. This would play an immense role in curbing water scarcity and combating the waste pollution caused by the residue from these technologies. The laws should also require these companies to make progressive but certain transitions from fossil fuel combusts to more environmentally friendly sources of energy such as solar energy, biomass, geothermal energy, wind energy, among others in order to mitigate global warming and climate change. For the limited fields that the laws would allow access to AI, states must pass laws that go beyond obliging the companies and institutions within these fields to use AI in a sustainable manner. The laws set up must make them subject to regular checks by government institutions and submit regular, periodic reports on their AI use with particular details on how conscious efforts have been made to use it sustainably.

In order to ensure harmonisation in the global combat against the negative environmental effects of AI, efforts should go beyond the national and even the regional level. International organisations must formulate binding treaties, protocols and like instruments on AI, which include mandatory obligations on the sustainable use of AI and couple them with enforcement mechanisms to ensure compliance by member states of the international community. These instruments must further mandate the States to submit national reports every few years on steps States have taken to ensure sustainability considerations in AI use by its citizens and the national and multinational corporations that have data centres in their jurisdictions. In the interim, independent international observers authorised by the international

Volume-2, Issue-3 *Pages: 397-435*

organisations must be made to make on-site visits to these states and report on their observations as to how the states are complying with international law. This would aid in filling the gaps left at the state level in trying to resolve the negative environmental impacts of AI and make the latter the global undertaking it is meant to be.

6. CONCLUSION

Artificial Intelligence is here to prevail in production and use from the most complex, ground-breaking equations down to simple, minute tasks that people were capable of doing on their own only a few years ago. This is further legitimised by emerging AI Regulation which is only going to get more prevalent in the years to come, with 2026 already poised to be the year a number of AI Legislations would come into force. While this appears to be revolutionary, it cannot be ignored that these strides are being made with little to no consideration of AI's effect on the environment. It is, therefore, important to contemplate what kind of future is anticipated where AI thrives at the consequential cost of the environment which is essential for our survival. The fixation on AI with regard to its production, use and regulation must not be without rumination on its negative effects on the environment and what can be done to curb the irreversible damage AI has been proven to occasion.