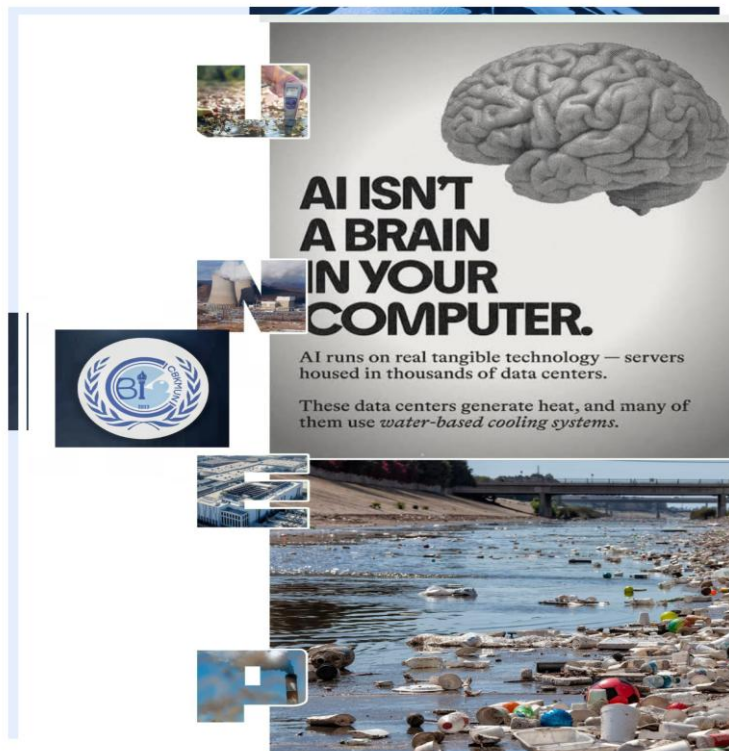


UNEP STUDY GUIDE



UNEP
Artificial Intelligence and its Impact on the
Environment

Letter from the Secretary General

Meritorious Participants,

It is with immense pride and excitement that I welcome you all to the very first session of CBKMUN'26. As the Secretary-General of this event, it is both an honor and a profound responsibility to lead this journey that we are beginning together.

CBKMUN'26 marks not only the start of a conference, but the beginning of a tradition. Every established institution once took its first courageous step, and today, we are taking ours. This conference has been built on dedication, long nights of preparation, passionate debates, and a shared belief that young minds have the power to shape tomorrow's world.

Our academic and organizational teams have worked tirelessly to ensure that this first edition of CBKMUN reflects excellence, inclusivity, and intellectual depth. I would like to extend my heartfelt gratitude to our Academic Team, Organization Team, and every volunteer who contributed to transforming this vision into reality. Without their commitment and resilience, this conference would not have been possible.

Model United Nations is more than formal speeches and draft resolutions. It is a platform where future diplomats, policymakers, and global leaders learn the values of dialogue, compromise, and cooperation. In a world increasingly defined by polarization and uncertainty, diplomacy remains our most powerful tool. At CBKMUN'26, we aim to create an environment where diverse perspectives are respected, critical thinking is encouraged, and meaningful solutions are pursued.

As this is our very first conference, you are not only participants—you are pioneers. The debates you engage in, the friendships you form, and the standards you set will define the spirit and legacy of CBKMUN for years to come. You are shaping the identity of this conference.

I encourage each of you to step beyond your comfort zone, speak with confidence, listen with empathy, and challenge ideas with respect. Let this conference be a place where ambition meets responsibility and where collaboration triumphs over division.

On behalf of the entire Secretariat, I welcome you once again to CBKMUN'26. May this be the first of many remarkable chapters in our story.

Kind Regards

İsmail Sevgen

Letter from Head of Academy

Honorable Secretary General, Fellow Academy and Dear Delegates;

I am Rana Gülerler and wishing you an informative yet exciting three days at our first ever holding of ÇBKMUN. To briefly introduce myself, I am both the Head of Academy and Chair of the UNEP committee. Being a part of this project is an honor to me. Both me and my fellow Academy members, though our backgrounds may be distant, we came together with our shared endeavours and created each Agenda Item.

To vaguely talk about our Agendas; in our Junior committees, delegates will fight for women's and children's rights in conflicted areas. In our UNEP committee, they will discuss the unethical usage of Artificial Intelligence and how it is badly affecting our environment. In our SOCHUM committee, they will acknowledge the current events the Uyghurs are facing within Central Asia. In our ECOSOC committee, delegates will argue about tariffs within international trade, and in our UNHRC committee they will advocate for the protection of journalists and the right to information.

I hereby encourage each delegate of their respective committee to meticulously prepare and act vigilant in our debates in order to secure a flawless ambiance of debate. Your endeavours and hard work will forever be acknowledged diligently.

As the Head of Academy, I once again wish you an experience at our conference which will bring you productivity, valuable experiences, and lasting memories. You can always find me within the premises if you would like to discuss something.

Best Regards,

Rana D. Gülerler

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2. Introduction to the Committee

2.1 Introduction to UNEP

The United Nations Environmental Program (UNEP) is responsible for coordinating responses to environmental issues within the United Nations System. It was established after the United Nations Conference on the Human Environment in Stockholm in June 1972. Its mandate is to provide leadership, deliver science and develop solutions on a wide range of issues, including climate change, the management of marine and terrestrial ecosystems and green economic development. The organization also develops international environmental agreements; publishes and promotes environmental science and helps national governments achieve environmental targets. As a member of the United Nations Development Group, UNEP aims to help the world meet the 17 Sustainable Development Goals. UNEP hosts the secretariats of several multilateral environmental agreements and research bodies, including the Convention on Biological Diversity (CBD), the Minamata Convention on Mercury, the Basel, Rotterdam and Stockholm Conventions, the Convention on Migratory Species and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), among others. Through robust science, global coordination and powerful advocacy, UNEP continues to support all UN Member States and all of society to achieve the Sustainable Development Goals and forge a future where people and planet live in harmony. With a workforce of nearly 3,000 people across 41 countries and territories, UNEP's mission is to inform, enable, and inspire nations and peoples to improve their quality of life while safeguarding the environment for future generations.

2.2 Introduction to the Agenda Item

Artificial Intelligence (AI) has rapidly transformed modern society; reshaping industries, governance healthcare, education, and global communication. From predictive algorithms to autonomous systems, AI technologies promise efficiency, innovation, and economic growth. However, alongside these advancements emerges a growing concern: the unethical, excessive, and unnecessary deployment of AI systems and their environmental consequences.

While AI is often perceived as a digital and intangible tool, its infrastructure is deeply physical. The development, training, and deployment of AI models require vast data centers powered by enormous computational capacity. These data centers consume significant amounts of electricity, much of which is still generated through fossil fuels; and water, which cannot be reused due to the harsh chemicals that pollute it. The training of large-scale machine learning models alone can produce carbon emissions comparable to those generated by multiple transcontinental flights. Furthermore, the increasing global demand for AI technologies accelerates energy consumption, water usage for cooling systems, and electronic waste production.

Beyond energy concerns, the extraction of rare earth minerals necessary for hardware production contributes to deforestation, habitat destruction, and biodiversity loss. The expansion of server farms often requires large-scale land use, which may disrupt local ecosystems. Additionally, rapid technological obsolescence encourages excessive hardware turnover, contributing to mounting e-waste and toxic waste leakage into soil and water systems.

The unethical use of AI further amplifies these environmental risks. Unregulated AI deployment in industries such as resource extraction, intensive agriculture, and mass surveillance can accelerate overconsumption and unsustainable exploitation of natural resources. Moreover, the unnecessary implementation of AI solutions—where simpler, low-energy alternatives would suffice—raises ethical questions regarding technological responsibility and environmental stewardship.

At the same time, AI holds potential as a powerful tool for environmental protection. It can optimize energy grids, predict climate patterns, monitor deforestation, and enhance conservation efforts. Therefore, the central challenge before this committee is how AI should be governed and surveillanced.

3. Terminology

Algorithm: a set of instructions or rules to follow in order to complete a specific task. Algorithms can be particularly useful when people work with big data or machine learning. Data analysts may use algorithms to organize or analyze data, while data scientists may use algorithms to make predictions or build models

Application Programming Interface (API): refers to a set of protocols that determine how two software applications will interact with each other. APIs tend to be written in programming languages such as C++ or JavaScript.

Artificial Intelligence (AI): refers to technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.

Carbon Footprint: is a calculated value or index that makes it possible to compare the total amount of greenhouse gases that an activity, product, company or country adds to the atmosphere. Carbon footprints are usually reported in tonnes of emissions (CO₂-equivalent) per unit of comparison. Such units can be for example *tonnes CO₂-eq per year, per kilogram of protein for consumption, per kilometer travelled, per piece of clothing* and so forth. A product's carbon footprint includes the emissions for the entire life cycle.

Chatbot: a software application that is designed to imitate human conversation through text or voice commands

Data Centre: a facility used to house computer systems and associated components, such as telecommunications and storage systems. Data centers are critical infrastructure for the storage and processing of information, and they support the global financial system, cloud services, machine learning, and artificial intelligence.

Data Mining: is the process of closely examining data to identify patterns and glean insights. Data mining is a central aspect of data analytics; the insights you find during the mining process will inform your business recommendations

Electronic Waste(E-Waste): describes discarded electrical or electronic devices. It is also commonly known as waste electrical and electronic equipment (WEEE) or end-of-life (EOL) electronics. Used electronics which are destined for refurbishment, reuse, resale, salvage recycling through material recovery, or disposal are also considered e-waste.

Energy Development: is the field of activities focused on obtaining sources of energy from natural resources¹ These activities include the production of fossil fuel-derived, nuclear, and renewable sources of energy, and for the recovery and reuse of energy that would otherwise be wasted.

Ethics: is the philosophical study of moral phenomena. Also called moral philosophy, it investigates normative questions about what people ought to do or which behavior is morally right. Its main branches include normative ethics and applied ethics.

Generative AI: refers to deep learning models that can create complex original content such as long-form text, high-quality images, realistic video or audio and more in response to a user's prompt or request. At a high level, generative models encode a simplified representation of their training data, and then draw from that representation to create new work that's similar, but not identical, to the original data.

Pollution: is the introduction of contaminants into the natural environment that cause harm. Pollution can take the form of any substance or energy. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants. Although environmental pollution can be caused by natural events, the word pollution generally implies that the contaminants have a human source, such as manufacturing, extractive industries, poor waste management, transportation or agriculture. Pollution is often classed as point source (such as a factory), or nonpoint source pollution (such as microplastics).

Prompt: is an input that a user feeds to an AI system in order to get a desired result or output.

Unsupervised Learning: is a machine learning type that looks for data patterns. Unlike supervised learning, unsupervised learning doesn't learn from labeled data. This type of machine learning is often used to develop predictive models and to create clusters. For example, you can use unsupervised learning to group customers based on purchase behavior, and then make product recommendations based on the purchasing patterns of similar customers. Hidden Markov models, k-means, hierarchical clustering, and Gaussian mixture models are common algorithms used during unsupervised learning.

4. Dilemmas to be Discussed Upon the Matter

4.1 How Generative AI Impacts Student Creativity

Creativity has existed since the dawn of humankind and is something humans inherently possess as a capacity and a process. Creativity is applied in everyday activities and in situations where solutions to problems are at the center of creative activities and artistic endeavors. With the growing interest in generative Artificial Intelligence (AI) and the availability of technical AI chatbot tools such as Chat-GPT, Google Gemini and others, delegates must study if and how students can enhance their creative thinking skills, in particularly their divergent thinking skills without feeling the need to rely on these bots.

A major risk of GenAI is cognitive outsourcing: students shift from producing ideas to selecting ideas the tool generates. When a chatbot can instantly propose thesis statements, discussion questions, metaphors, story plots, or “better wording,” students may engage less in the messy, effortful stages of creativity—brainstorming, drafting, struggling, revising, and discovering. Over time, this can reduce students’ tolerance for ambiguity and frustration, both of which are essential for creative growth.

4.2 The Impact on the Environment

Most large-scale AI deployments are housed in data centres, including those operated by cloud service providers. These data centres can take a heavy toll on the planet. The electronics they house rely on a staggering amount of grist: making a 2 kg computer requires 800 kg of raw materials. As well, the microchips that power AI need rare earth elements, which are often mined in environmentally destructive ways. The second problem is that data centres produce electronic waste, which often contains hazardous substances, like mercury and lead.

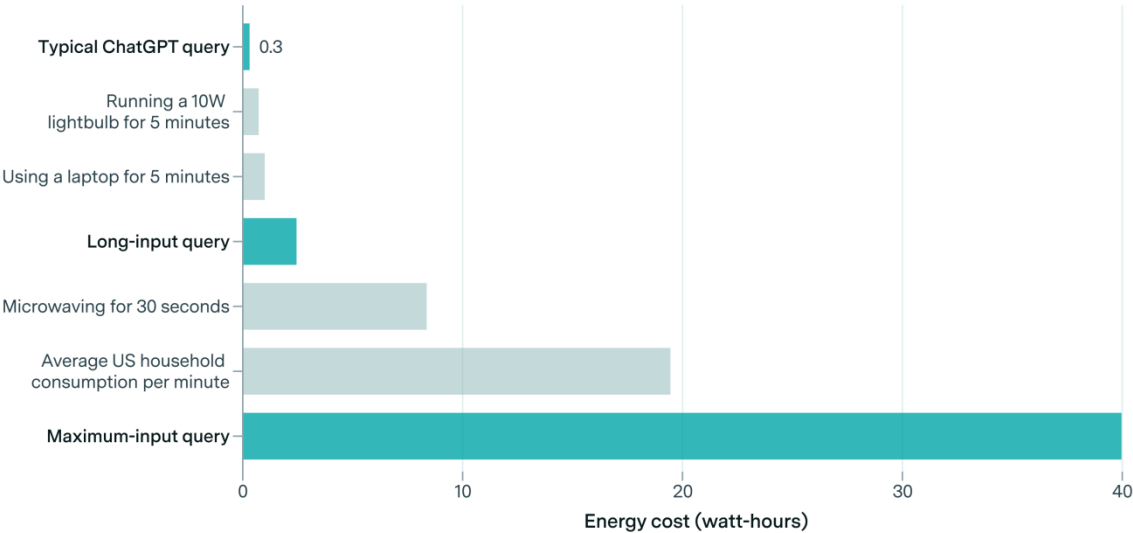
Third, data centres use water during construction and, once operational, to cool electrical components. Globally, AI-related infrastructure may soon consume six times more water than Denmark, a country of 6 million, according to one estimate. That is a problem when a quarter of humanity already lacks access to clean water and sanitation.

Finally, to power their complex electronics, data centres that host AI technology need a lot of energy, which in most places still comes from the burning of fossil fuels, producing planet-warming greenhouse gases. A request made through ChatGPT, an AI-based virtual assistant, consumes 10 times the electricity of a Google Search, reported the International Energy Agency. While global data is sparse, the agency estimates that in the tech hub of Ireland, the rise of AI could see data centres account for nearly 35 per cent of the country's energy use by 2026. Driven in part by the explosion of AI, the number of data centres has surged to 8 million from 500,000 in 2012, and experts expect the technology's demands on the planet to keep growing.

Recent research has shown that developing and training large language models can produce significant environmental impacts, including approximately 493 metric tons of carbon dioxide emissions and 2.77 million liters of water use when considering the full lifecycle from hardware manufacturing to model training. BERT, a language model trained in 2019, required "the energy of a round-trip transcontinental flight" to train. GPT-3 released 552 metric tons of carbon dioxide into the atmosphere during training, "the equivalent of 123 gasoline-powered passenger vehicles driven for one year". Much of the energy cost is due to inefficient model architectures and processors. One model named BLOOM, from Hugging Face, trained with more efficient chips and, therefore, only released 25 metric tons of CO₂. Incorporating the energy cost of manufacturing the chips for the system doubled the carbon footprint, to "the equivalent of around 60 flights between London and New York." Operating BLOOM daily was estimated to release the equivalent carbon footprint as driving 54 miles.

The images below shows the estimate energy consumption of a single ChatGPT prompt as well as the estimated energy consumption of AI by 2030.

Energy consumption per ChatGPT query is small compared to everyday electricity use 

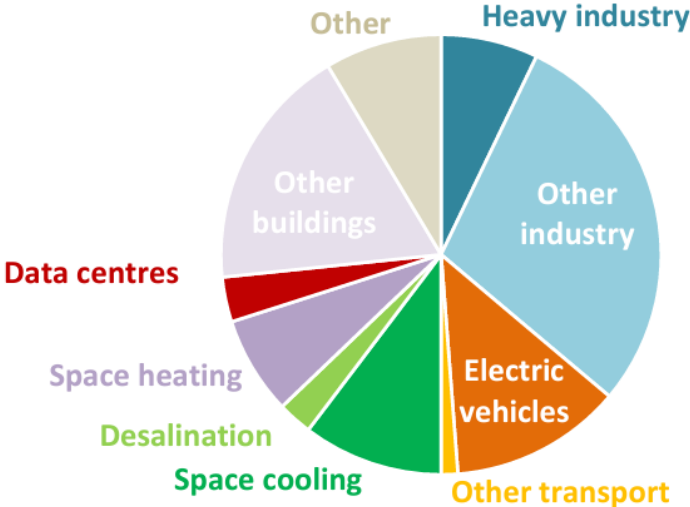


Pessimistic estimates of the energy usage of ChatGPT with GPT-4o across for different query lengths: typical (<100 words), long (~7,500 words), and maximum context length (~75,000 words), with an average response length of 400 words.

CC-BY

epoch.ai

Electricity demand growth, 2023-30
6 760 TWh



4.3 The Impact on Social Life

With the rising of AI, *chatbots* are now taking over human interaction. With people finding AI chatbots such as Character.AI or ChatGPT more reliable than humans, people have started to distance themselves away from others. With their fast and almost human-like responses; some people, mainly teenagers, have started to gain an addiction to talking to these bots, disrupting their sleep schedule and overall health over these AIs just to feel some sympathy.

Despite its innovative appeal, Character.AI has been at the center of ethical debates. The platform is linked to the suicide of a 14-year-old American user, Sewell Setzer III, in Florida, USA, on February 28, 2024. A subsequent civil lawsuit filed by his mother, Megan Garcia, in October 2024 alleges that the platform's design and safety protocols contributed to Setzer's death. This lawsuit, naming Character.AI, Its founders, and Google as defendants, highlights broader concerns about the ethical and psychological risks posed by AI companion chatbots, particularly for vulnerable users like children. Notably, it is not the only instance of chatbots urging suicide, with some on other, smaller platforms even detailing how to do this.

A World Health Organization survey of 280,000 children aged 11, 13, and 15 across 44 countries and regions in Europe, central Asia, and Canada in 2022 finds a sharp rise in addictive social media use, with rates increasing from 7% in 2018 to 11% in 2022. The EU Kids Online 2020 survey of 25,101 children from 19 European countries finds that although a majority of 12- to 16- year-olds have not seen ways of physically harming or hurting themselves in the past year online, on average, 8% have seen ways of committing suicide.

Seeing such statistics shows the next generation's reliance to generative AI, and its potential harm of letting them grow up with this. In addition, studies how that frequently relying on AI chatbots rapidly decline social skills.

4.4 AI in Security

Seeing people use AI within their daily life has become the norm within the past half decade. Asking public AI softwares stuff like recipes, relationship advice or sometimes even what to order in a restaurant. Feeding personal information to AI lessens personal security. Participating in popular online challenges such as “Ghibli Style” or “My Career”, which involve people feeding a photograph of themselves to programs such as ChatGPT; prompting it to generate a version of themselves in a specific art style or working a career “based off everything it knows about them”, makes people overlook the fact that the AI stores personal data, breaching security. Recently, the home security company *Ring* has started using a feature where face recognition is taken to another level, connecting each camera to an AI which tracks people’s face and location to find missing pets, or other people. Though many do not consent to this, the company still kept this feature in their system. Many other companies have snuck in an AI into their own systems which track browsing history and other personal information. Softwares such as *Gemini* may seem to be there to assist, however behind it is a machine, gathering data of every Google search.

Recent research has revealed an accelerating threat environment surrounding AI-related security incidents. According to the latest data breach report findings, organisations are grappling with unprecedented challenges as AI adoption outpaces security preparedness. Some reports indicate that AI-related breaches can be costly and may involve longer detection times than traditional breaches, often exacerbated by inadequate AI access controls or shadow AI usage. These numbers reflect a concerning trend in which technological advancements outpace security implementations. The report revealed that most organisations have adopted AI tools and algorithms without establishing corresponding AI governance policies or conducting thorough risk assessments. Industry sectors show varying vulnerability levels. Healthcare organisations handling patient data face the highest risk, with AI deployments in medical imaging and diagnostic systems creating new pathways for data exposure. Financial services institutions report significant concerns about AI systems processing sensitive client information and financial records. The data also shows that organisations with strong measures in place experience substantially lower incident rates. Companies that implemented comprehensive AI governance policy frameworks and conducted regular security testing reported 73% fewer AI-related security incidents compared to those without such protections. By leveraging AI algorithms to analyse data patterns, these organisations can detect security threats and anomalies early, further reducing incident rates.

In addition, CrowdStrike data showing that voice phishing, or vishing, attacks skyrocketed 442% in the second half of 2024. Cybercriminals’ breakout time, the measure of how long it takes intruders to begin moving laterally after gaining initial access, dropped from roughly an hour in 2023 to 48 minutes in 2024. The security firm ReliaQuest recently found that it had dropped to just 18 minutes in the middle of 2025. With AI models introducing new risks into companies’ networks, organizations should focus on training their employees to avoid costly mistakes. The company recently found that 68% of organizations let employees develop or deploy AI agents without high-level approval, and only 60% of organizations issue guidance for that work.

Companies should also take steps to protect the integrity of their data, given the importance of that data to both traditional business functions and AI model training. The report noted multiple AI-related data risks, including models leaking sensitive information and companies accidentally letting models train on personally identifiable information.

5. Questions a Resolution Must Answer (QARMA)

- How can the carbon footprint of AI data centers and large-scale computing be reduced globally?
- What regulations should be implemented to ensure sustainable energy use in AI infrastructure?
- How does AI contribute to electronic waste, and how can this be mitigated?
- How can governments address job displacement caused by AI automation?
- What policies can ensure that AI development does not widen global inequality between developed and developing nations?
- How can AI systems be regulated to prevent bias, discrimination, and ethical violations?
- Who should be legally accountable for harm caused by autonomous AI systems?
- How can access to AI technologies be made equitable across societies?
- Should there be a global regulatory body overseeing AI development? If so, under which UN organ?
- How can transparency and explainability in AI decision-making be enforced internationally?
- What ethical framework should guide AI research and innovation?
- How can misuse of AI in misinformation, surveillance, and weaponization be prevented?
- How can international cooperation balance innovation with precaution in AI governance?

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