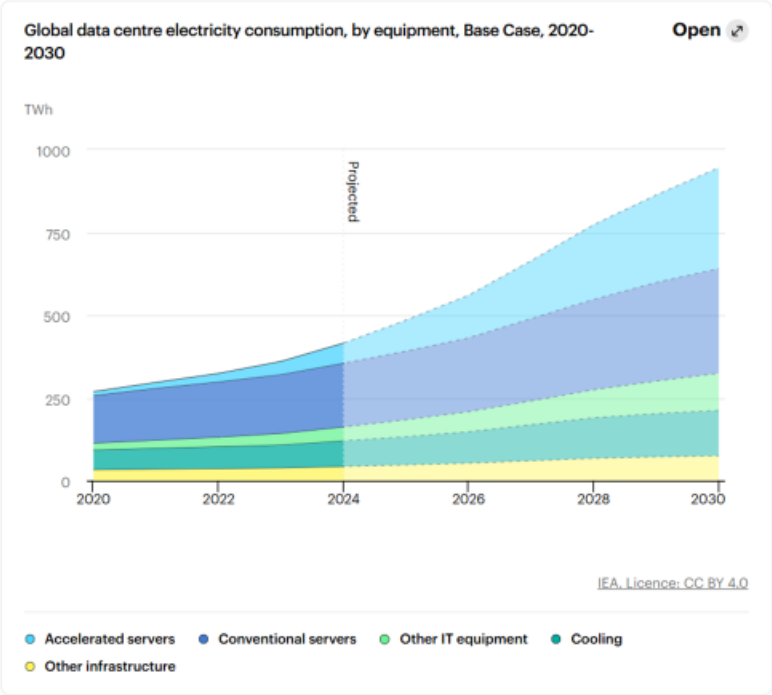
Climate impact from AI systems



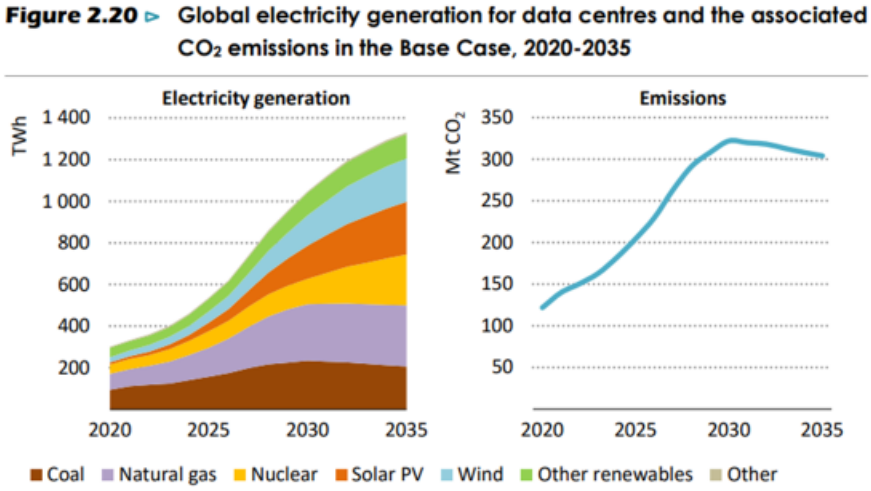
Susanna Kallio
Head of Sustainability Standardization
13 October 2026

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Exponential AI growth brings associated environmental impact



Source: IEA (2025), Global data centre electricity consumption, by equipment, Base Case, 2020-2030, IEA, Paris https://www.iea.org/data-and-statistics/charts/global-data-centre-electricity-consumption-by-equipment-base-case-2020-2030



Between now and 2030, renewables meet nearly half of the increase in global data centre electricity demand, followed closely by natural gas and coal-fired electricity generation

Source: IEA, Energy and AI - World Energy Outlook Special Report, April 2025

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Nepal – no data centres or AI but severe consequences

On the morning of 26 August 2026

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https://news.un.org/en/story/2026/09/1168441

Nepal PM urges climate justice after 'Himalayan tsunami' devastates country



UN Photo/Loey Felipe: Prime Minister Balendra Shah of Nepal addresses the General Debate of the UN General Assembly's 81st session.

"The Bhotekoshi-Trishuli disaster was not just a local tragedy, it was a warning to the world. And I ask you today: have we really heard that warning?"

"Climate change does not recognize borders. Glaciers and floods do not travel with a visa stamped on passports."

Coalition for Sustainable AI

A shared vision: https://www.sustainableaicoalition.org/coalition/

1. **Encourage AI Initiatives for the Planet**
2. **Wish to continue our work for an AI respectful of our Planetary Boundaries:**
   - **Standardized methods and metrics** for measuring AI's environmental impacts
   - Comprehensive **Life Cycle Analysis**
   - Frameworks for **Reporting and Disclosure**
   - Prioritization of **Research on Sustainable AI**
   - Efforts that ensure AI infrastructure and software are built and maintained in line with **global environmental commitments**
3. **Support Collaborative Approaches**

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ITU-T L.1801 - Guidelines for Assessing the Environmental Impact of Artificial Intelligence systems

World **first full methodology** standard for AI systems

Joint development in ITU-T SG5 and ETSI TC EE, as technically aligned standard

Standard containing **mandatory requirements**

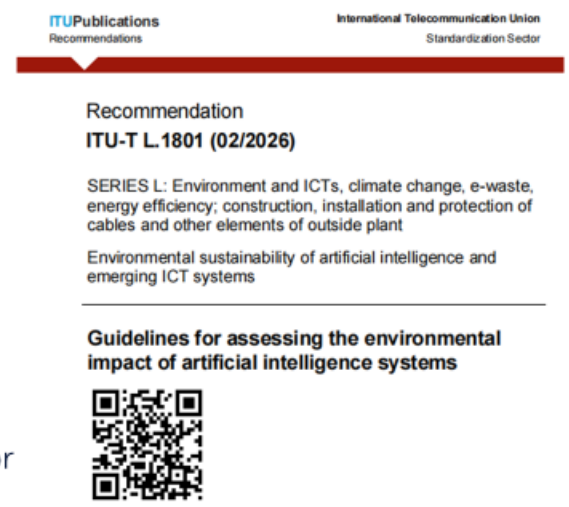
Full life cycle of AI systems

Comparative assessment

- AI technology compared to not using AI
- Impact comparison of two AI systems

Based on:

- ITU-T L.1410: Methodology for environmental LCA of ICT goods, networks and services
- ITU-T L.1480: Enabling the Net Zero transition – Assessing how the use of ICT solutions impacts GHG emissions of other sectors


ITUPublications
Recommendations

International Telecommunication Union
Standardization Sector

Recommendation
ITU-T L.1801 (02/2026)

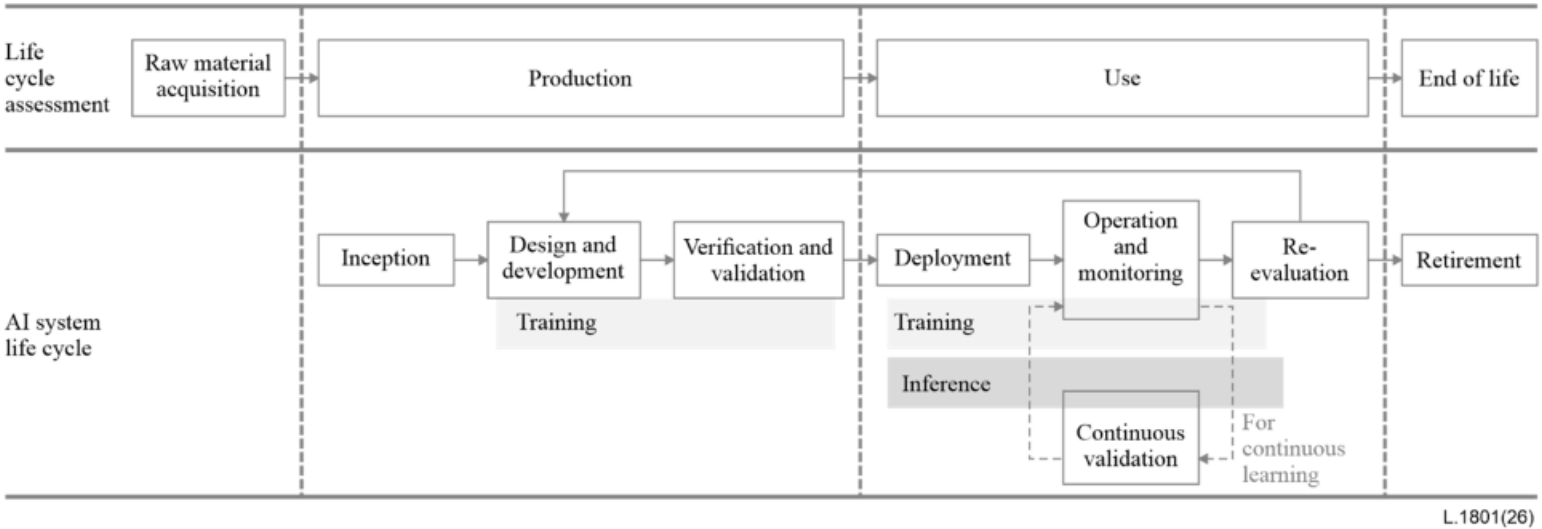
SERIES L: Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant

Environmental sustainability of artificial intelligence and emerging ICT systems

Guidelines for assessing the environmental impact of artificial intelligence systems

The climate impact of AI system

Mapping standard approaches

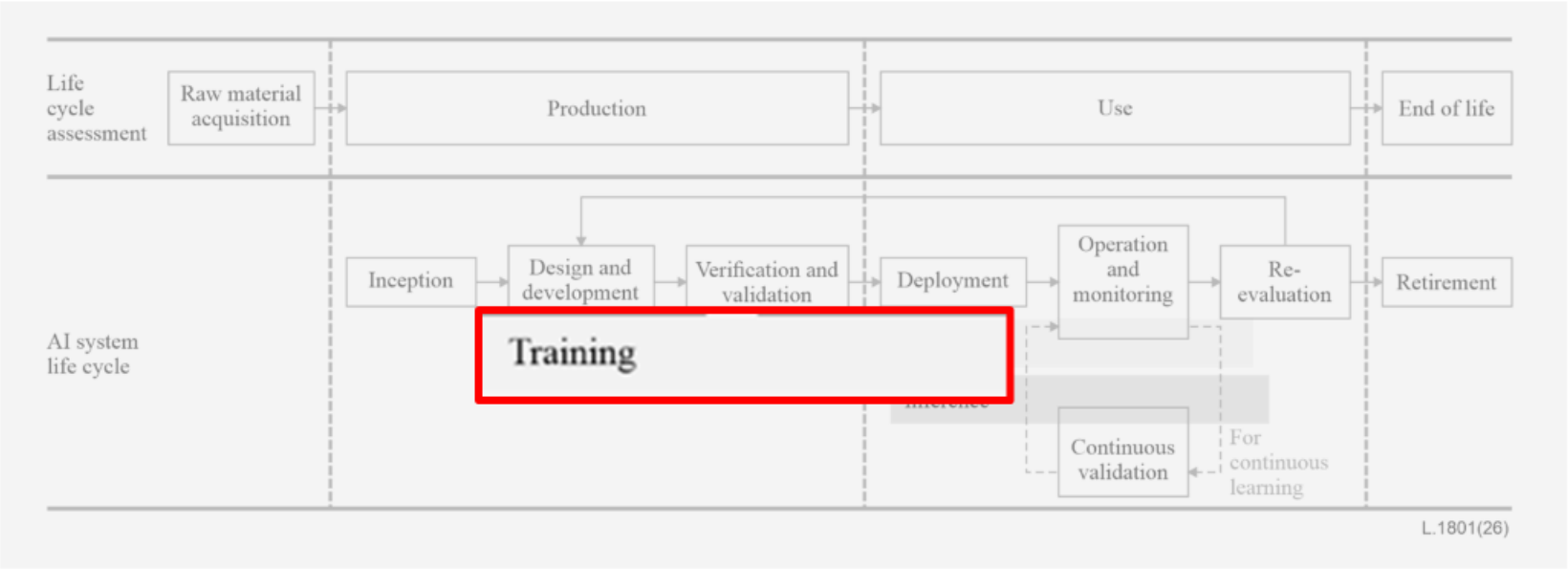


Source: ITU-T Recommendation L.1801

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The climate impact of AI system

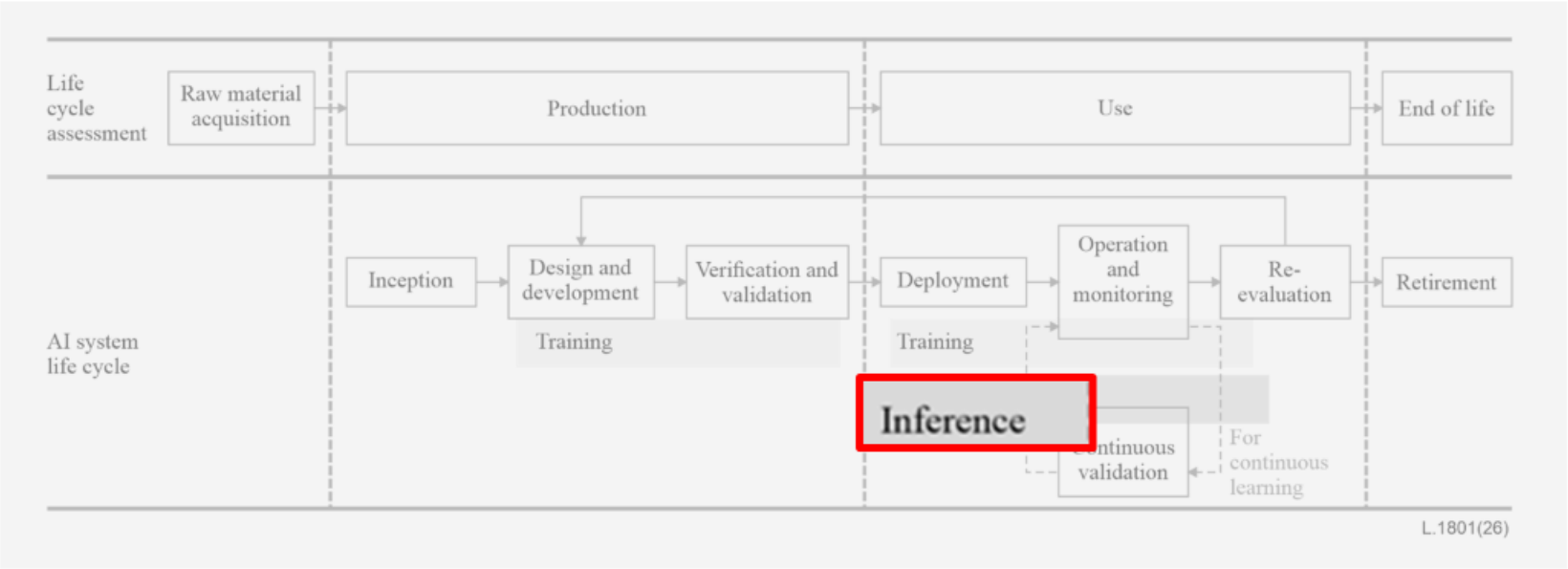
Partial view



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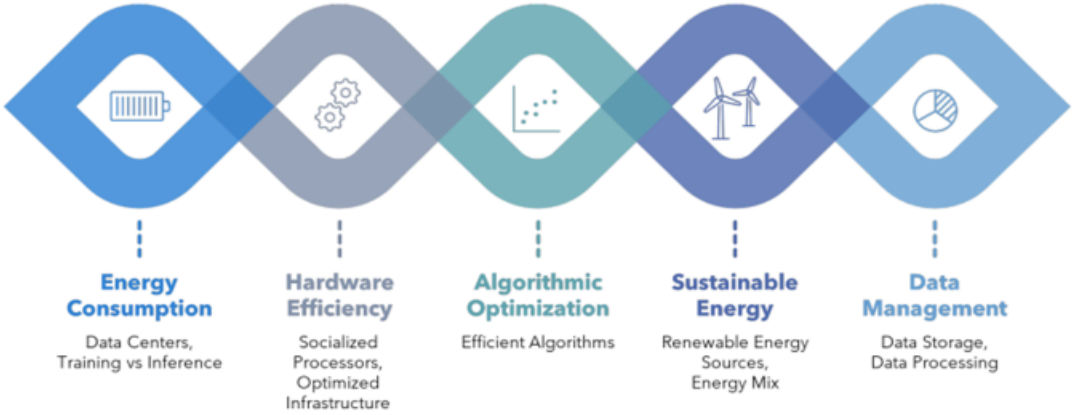
The climate impact of AI system

Partial view

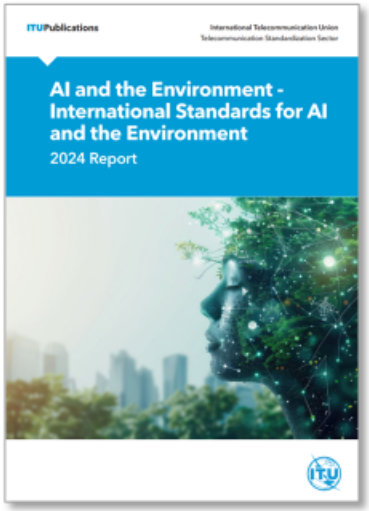


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Targeted and tailored actions to reduce climate impact

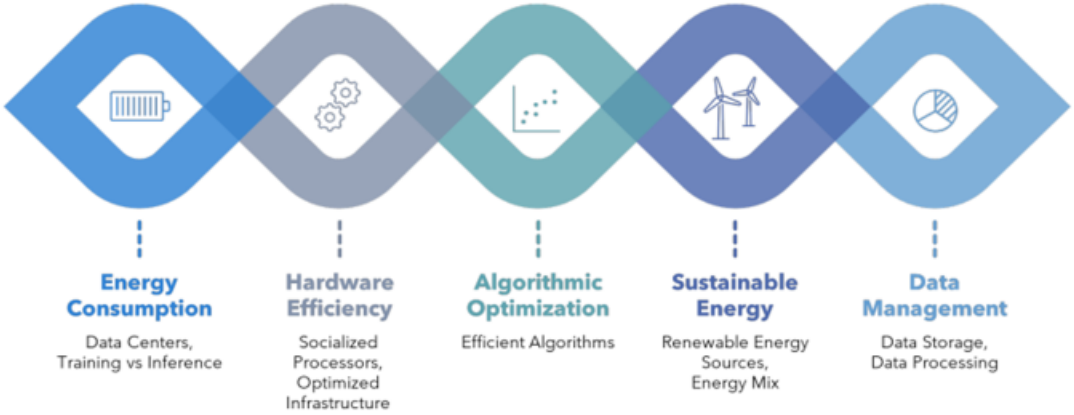


Source: ITU-T 2024 Report, AI and the Environment - International Standards for AI and the Environment, https://www.itu.int/dms_pub/itu-t/opb/env/T-ENV-ENV-2024-1-PDF-E.pdf

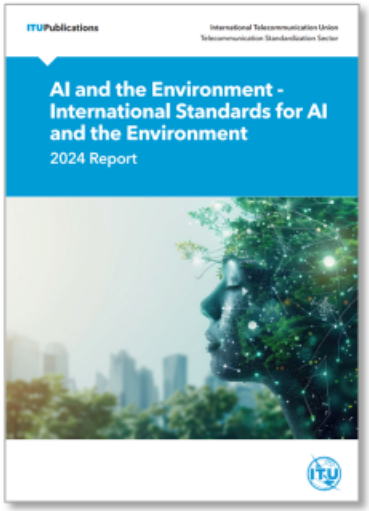


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Targeted and tailored actions to reduce climate impact



Source: ITU-T 2024 Report, AI and the Environment - International Standards for AI and the Environment, https://www.itu.int/dms_pub/itu-t/opb/env/T-ENV-ENV-2024-1-PDF-E.pdf



New work: ITU-T L.S_AI: Guidelines for environmentally sustainable and resource-efficient artificial intelligence systems across the life cycle

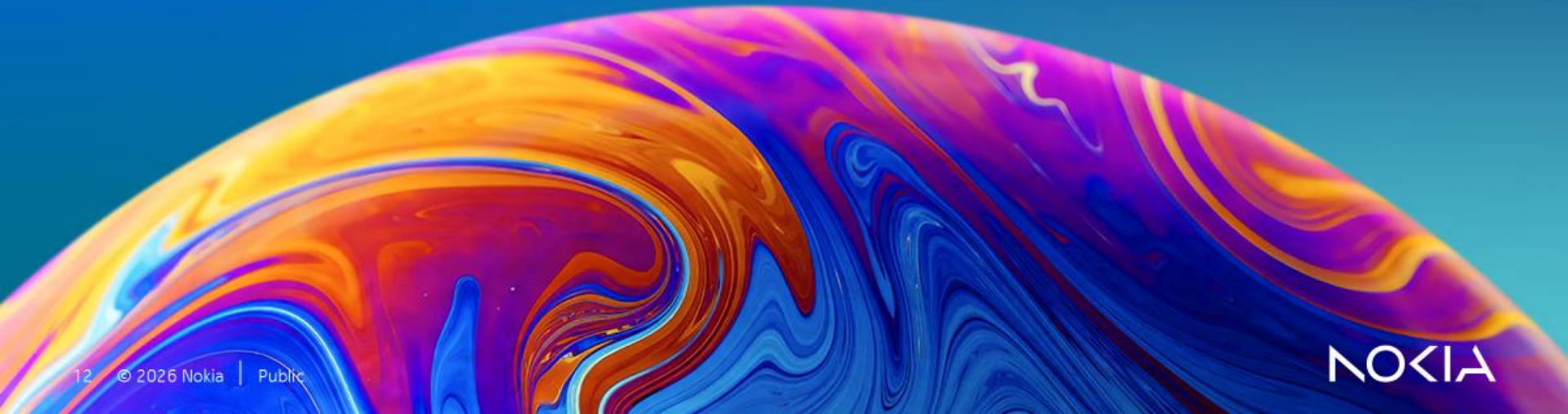
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Take aways

Exponential increase in AI use

Global climate commitments

Calculating the climate impact with a standard methodology



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