

The AI Environmental Footprint: Between hidden costs and green opportunities

4th November 2025, 10.00 – 12.00h CET

Smart City Expo World Congress

Fira Barcelona, Gran Via Venue, Av. Joan Carles I, 64, 08908 L'Hospitalet de Llobregat

Side Event, Level 1 (Conference Center), Zone CC1 – Room 1.4

Organised by: CIDOB, with the support of the Barcelona City Council and the Cities Coalition for Digital Rights (CC4DR), co-funded by the CERV (Citizens, Equality, Rights and Values) programme of the European Commission in the framework of the DigiDem-EU project

Artificial intelligence is no longer an abstract concept hovering on the horizon—it is becoming an integral part of the urban landscape. Across the globe, cities are integrating AI systems into daily operations, from adaptive traffic signals and predictive maintenance of infrastructure to climate-responsive architecture and real-time air quality monitoring. These innovations promise to transform how cities function, making them more efficient, resilient, and responsive to the complex challenges of urban life in the 21st century.

This session explores the dual nature of artificial intelligence in the context of sustainable urban development. On one hand, AI holds enormous potential to support climate action: reducing carbon emissions through optimized energy systems, streamlining public transportation networks, enabling smarter waste management, and enhancing environmental monitoring. On the other hand, the widespread deployment of AI systems comes with significant environmental and societal costs that are often overlooked. The high energy consumption of data centers, the carbon footprint of developing and maintaining AI infrastructure, algorithmic bias that can exacerbate inequalities, and unequal access to AI-driven services are just a few of the sustainability challenges that demand urgent attention.

As cities around the world race to adopt smart technologies, it is crucial to ask: Are we truly building greener cities, or are we inadvertently creating a new layer of environmental and social complexity? How can policymakers, technologists, and urban communities ensure that AI contributes meaningfully to sustainability goals rather than undermining them?

Bringing together a cross-disciplinary panel of experts, this session will offer a critical space to examine the promises and pitfalls of AI in urban environments. Speakers will reflect on real-world applications, share emerging research, and engage the audience in discussions about responsible AI governance, inclusive digital innovation, and climate-aligned technology development.

Through this dialogue, organised by CIDOB with the support of the Barcelona City Council and the Cities Coalition for Digital Rights (CC4DR) and co-funded by the CERV (Citizens, Equality, Rights and Values) programme of the European Commission in the framework of the DigiDem-EU project, participants will gain deeper insight into the sustainability paradox of urban AI and leave equipped with actionable pathways toward implementation that is not only intelligent but just, equitable, and ecologically sound.

Key objectives of the session:

- Examine the dual impact of AI in Urban Contexts
- Interrogate the environmental footprint of AI technologies
- Promote responsible AI governance in cities
- Empower participants with actionable strategies based on the Global Observatory of Urban Artificial Intelligence

Programme

10.00 – 10.05 **Introductory remarks**, provided by the co-organizers of the side event

10.05 – 11.35 **Panel: The AI Environmental Footprint**

- **Constanza Gómez Mont**, AI for Climate and Biodiversity expert at UNESCO and founder of NaturaTech LAC
- **Julen Imana Sobrino**, Green Digital Transformation Expert, ICLEI
- **Patrick Maurelli**, Research fellow, Centro di Ricerca Interdipartim Territorio Edilizia Restauro Ambiente (CITERA), Sapienza Università di Roma
- **Matthieu Porte**, Deputy Chief of the Data & AI Office, French Ministry of Environment

Moderated by: **Marta Galceran**, Global Cities Research Coordinator and Senior Research Fellow, CIDOB

11.35 – 12.00 **Snacks and Networking**