



ZENTROPY MICE

A new model of sustainable events transforming urban flows in Valencia.

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THE IMPACT OF THE MICE SECTOR

Events are much more than moments of gathering, sharing ideas, or celebrating milestones. They are also powerful platforms for education, awareness, and influence—capable of amplifying their reach far beyond the venue walls. However, they also carry significant environmental and social externalities. In fact, it is estimated that **the total environmental impact of an event can be up to seven times higher than its direct carbon footprint**, due to the ripple effects generated across transport, materials and resource consumption and waste production.

This growing awareness led to the creation of **ISO 20121** following the London 2012 Olympic Games, establishing a **framework for sustainable event management** that has since inspired cities and organisers worldwide to rethink how events are designed, executed and measured.

Currently, around 25% of global travel is related to business. **The MICE sector (Meetings, Incentives, Conferences, and Exhibitions)—a key component of business tourism—represents a major force**

shaping urban sustainability.

While MICE events generate 30% more revenue than leisure tourism, encourage longer stays, and offer greater purchasing power and more stable employment, they are also concentrated in cities and intensify pressure on urban infrastructure and ecosystems.

Despite its economic profitability, the traditional MICE model has contributed little to fostering local innovation or long-term benefits for host communities. Its value chains tend to be narrow, with gains captured by a limited number of stakeholders, often disconnected from local needs. Moreover, event organisers and cities are increasingly concerned about reducing the footprint of MICE activities, yet lack consistent tools to measure impact and, crucially, to enhance their legacy for citizens—a core element of sustainable urban tourism.

Valencia, a city internationally recognised for its **innovation and sustainability leadership**—European Green Capital 2024 and Capital of Smart Tourism 2022—is in a prime position to drive a fundamental transformation of the MICE sector.

Over the past year, the number of visitors to Valencia has nearly quadrupled, reflecting both the city's growing international appeal and the strategic importance of tourism in its economic model. Tourism now represents close to 15% of the city's GDP, with MICE tourism standing out as one of its most valuable and dynamic segments.

Zentropy MICE is Valencia's strategic commitment to **redefine business tourism as a driver of urban sustainability**. The project aligns with the objectives of European Green Deal, the Sustainable Development Goals, the New European Bauhaus, and the **Urban Agenda for the EU – Tourism Partnership**, embracing a transformative vision of events as engines of regeneration.

THE WORK TEAM BEHIND ZENTROPY MICE

The success of Zentropy MICE relies on the expertise and collaboration of a **multidisciplinary team** led by **Valencia's City Council**, with the support of:

- **Palacio de Congresos de Valencia**, a MICE infrastructure specialised in hosting

international conferences and events. It will serve as the primary experimentation site and living lab for piloting sustainable practices in real-world conditions.

- **València Innovation Capital**, the city's municipal innovation foundation. With a strong focus on social innovation, entrepreneurship and technology ecosystems, it plays a crucial role in embedding innovation into the project's DNA.
- **Universitat Politècnica de València (UPV)**, the academic and scientific partner. Through its Institute of Energy Engineering and contributions from the Statistics Department, UPV provides essential technical knowledge and robust methodologies to support the project's research and monitoring activities.
- **Visit València**, a public-private foundation dedicated to the city's tourism promotion with recognised expertise in destination marketing and sustainable tourism management.
- **Khora Urban Thinkers**, a consultancy specialised in urban innovation and participatory design. Khora leads the co-design process with the Municipality of Valencia.

This **quintuple helix approach** is key to the project's innovation, uniting public authorities, industry, academia, civil society, and media to address sustainability holistically—from governance and technology to entrepreneurship and citizen engagement. The **Public-Private Partnership (PPP)** model that underpins the initiative guarantees efficient use of resources, shared benefits and coordinated risk management.

Each partner plays a strategic and complementary role: the **City of Valencia** will guide the project's development coordinating all activities in close collaboration with **Khora Urban Thinkers**; **PdC** will pilot sustainable MICE practices in their facilities; Las Naves will manage communications and foster innovation; **UPV** will provide scientific-technical expertise, including the development of the "entropy calculator"; and **Fundació Visit Valencia** will drive stakeholder engagement through the deployment of a social currency to maximize the cultural wealth of the different neighbourhoods.

HARNESSING ENTROPY: A THERMODYNAMIC APPROACH TO SUSTAINABLE MICE EVENTS

At the heart of Zentropy MICE lies the concept of entropy—a **play between "zero" and "entropy"**—traditionally understood as disorder or energy loss, as defined by the Second Law of Thermodynamics.

In the world of sustainable event planning, it may seem unusual to begin with physics. Yet, the **Second Law of Thermodynamics** offers a powerful lens through which to rethink how we organize and integrate MICE events in our cities. This law, which describes the natural tendency of systems toward disorder—or entropy—can help us better understand the fragmented energy, material resources (matter) and information flows typical of the MICE sector today.

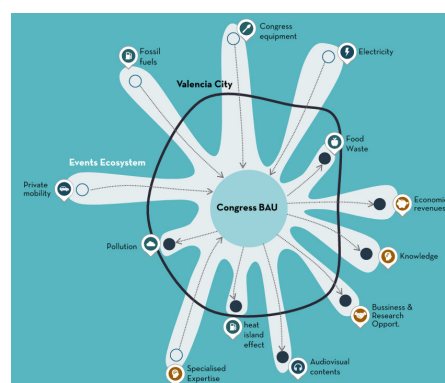
Currently, events are often planned in isolation, generating large but disordered flows of people, materials, and energy that rarely contribute to the long-term vitality of urban

ecosystems. However, by embracing cyclical processes that mimic the logic of thermodynamic systems, we can begin to identify and harness surplus energy, redistributing it in ways that enhance urban life and sustainability at large. This entropic approach invites us to reimagine events not as isolated bursts of activity, but as **integrated cycles that contribute meaningfully to the city's systems**.

Valencia wants to develop a new congress model with minimal entropy growth by organizing **energy, matter, and information (E+M+I)** flows between the MICE ecosystem and its host community. By connecting these flows in a circular loop, the project aims to minimise environmental impact while maximising economic, social and cultural returns for Valencia and its residents. Thus, Zentropy MICE reduces negative impacts (carbon footprint, resource consumption or waste generation) and boosts positive impacts (legacy, economic development and information sharing).

THE 3 STRATEGIC DOMAINS OF ZENTROPY MICE

- **ENERGY**: covering sustainable mobility and renewable energy.
- **MATTER**: food waste, materials reuse (wood, carpet, canvas) or creating new uses and products from event surplus.
- **INFORMATION**: knowledge exchange to create long-term value for citizens, tourism actors, local SMEs and institutions.



This holistic approach seeks to generate a meaningful legacy—connecting MICE tourism with local communities and neighbourhoods, while fostering economic development and educational innovation through strong engagement with Valencia's business ecosystem and academic institutions.

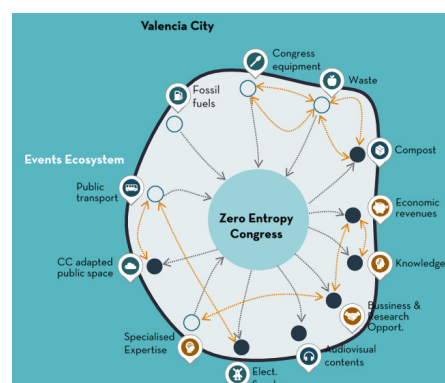


Image: Conceptual basis under Zentropy MICE approach - fig 1 entropy scenario; fig 2 Zero-entropy/integrated flows desired scenario

ACTIVATING THE LEVERS OF SUSTAINABLE TRANSFORMATION

A central innovation is the creation of an “**entropy-0 system**”—where the externalities of MICE tourism are absorbed or counterbalanced by the city’s sustainable infrastructure, ensuring efficient resource management, minimal waste and added value retention.

Zentropy MICE will operate as a living lab, showcasing how a circular MICE economy can be applied at scale, shifting business tourism from a linear high-impact model into a **regenerative catalyst for urban transformation**.

The three strategic domains—**energy, matter, and information**—will be addressed through concrete sectorial programs that will take form through:

1. **Circularity programs**, addressing energy, materials, and data flows. Examples include reducing food waste via **composting hubs** linked to schools, or promoting **sustainable mobility** for MICE attendees through public transport incentives and park-and-ride services.
2. **Sustainable infrastructure**, with the **Palacio de Congresos de Valencia** as the core pilot site. Planned upgrades include energy-efficient **vinyl window films**, **rooftop urban wind turbines** connected to an energy community with surrounding schools, composters and digital signage to reduce waste. **Nature-based solutions** and **sustainable drainage systems** will also be integrated into new exterior green designs to improve water management and regenerate the local biodiversity.
3. **Knowledge capitalisation** through dissipative structures around the city to engage with local communities, SMEs, and universities, creating opportunities for knowledge transfer, fostering innovation and entrepreneurship. Programs like the **Social Currency** will empower MICE attendees to participate in local tourism activities, ensuring that the benefits of MICE tourism are felt throughout the different neighbourhoods of the city.

THE LEGACY BEYOND MICE EVENTS

The legacy of Zentropy MICE extends well beyond immediate environmental improvements or isolated infrastructure innovations. **Its long-term strategy is based around five key dimensions:**

1. **Cultural and social cohesion:** integrating cultural identity, community engagement and transformative behaviour into MICE programming will ensure more equitable outcomes, encouraging participation from local SMEs and residents, while fostering a shared sense of responsibility for Valencia’s future.
2. **Economic resilience:** by anchoring MICE tourism in local production and circular value chains, Zentropy MICE will diversify the economy, reduce dependency on external actors and boost industrial competitiveness. Connecting local SMEs with event organisers will generate new demand for
- products and services, while increased local sourcing will enhance Valencia’s attractiveness for high-value MICE events.
3. **Environmental sustainability:** the project will drive the **decarbonisation of Valencia’s tourism sector**, embedding circular economy principles into every layer of MICE tourism, creating a more resilient urban environment.
4. **Transdisciplinary governance:** the project will feed insights and evidence back into local policies and regulatory frameworks, ensuring that governance evolves in response to real-world challenges and solutions, highlighting the wealth of knowledge from the different intersectoral angles of sustainable urban development.



“You bring the idea, here is the city”

THE URBAN INNOVATION SANDBOX INITIATIVE

Inspired by EU frameworks such as the Horizon Europe Missions and the EU Industrial Strategy’s test beds, Valencia’s new Urban Innovation Sandbox ordinance provides a **real-world testing** environment for innovative, sustainable solutions.

As part of Zentropy MICE, the Sandbox will act as **an accelerator for the sectorial programmes and infrastructure upgrades**, allowing rapid experimentation in a controlled setting, free from regulatory bottlenecks. This will streamline implementation timelines and facilitate dynamic coordination between all involved stakeholders.

By enabling early validation of technologies and solutions, the Sandbox will ensure that effective models tested at Zentropy MICE could be rapidly scaled city-wide—boosting economic impact, attracting green investment and positioning Valencia as a frontrunner in sustainable MICE innovation.

5. **European transferability:** Zentropy MICE will be co-developed with three European transfer cities with complementary needs. Supported by the **European Urban Initiative**, the project will document and share its model for replication across Europe—shaping future policies and best practices for sustainable business tourism.

Valencia’s leadership will pave the way for other cities to embrace transformative tourism models, ensuring that the MICE sector becomes a powerful driver of economic, social and environmental sustainability—**across Europe and beyond.**

Stay tuned—this is just the beginning!

Author:
Ana Contreras Escribano
EUI Innovative Actions Expert