

lieuxdits #24
Spécial Sustaining the energy transition
Décembre 2023

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Sustaining the Energy Transition

The 28th session of the Conferences of Parties (COP28), to be held in the United Arab Emirates in November 2023, is set to tackle key focus areas to advance and accelerate the energy transition. More than three decades after the establishment of the United Nations Framework Convention on Climate Change (UNFCCC), the COP28 meeting comes at a critical moment for global transformative climate action. The words pronounced by UN Secretary-General António Guterres after COP27 set the scenario for the significant challenges ahead: "*Greenhouse gas emissions keep growing. Global temperatures keep rising [...]. We are on a highway to climate hell with our foot on the accelerator*".¹

The agenda to address the mandates of the UN Sustainable Development Goals (SDG) – and, more specifically, SDG 7 "Affordable and Clean Energy" – is today compounded, among other menaces, by three clear and present threats to the socio-economic, environmental, and geopolitical sustainability of our societies: 1) *the post-pandemic recovery*, whose economic rebound has outpaced energy production; 2) the global effects of *climate change*, with its increased pressure on energy needs to respond to more intense shifts in weather patterns; 3) the dramatic surge of *military hostilities* in eastern Europe and the Middle East, which – besides its humanitarian costs – is threatening traditional sources and routes for hydrocarbon-based energy supply.

The combination of these phenomena requires a radical shift in the role held by energy to power our societies. This makes, of course, our built environment the more crucial in addressing such challenges, as our cities and buildings can greatly contribute to curb energy requirements and adapt to new climate scenarios. And not only by increasing the resilience of our energy infrastructure, from energy production to distribution networks. But also, by *fundamentally rethinking the very nature of energy demands*.

In buildings, energy systems convert fuel and electricity into heating, cooling, ventilation, and lighting. But what is this for? The greatest contributors to energy demands are, actually, the occupants, who use energy to *comfortably* perform their activities.² But how efficient are the comfort models that are embedded in our standards? A gap is often detected between design predictions and measured outcomes in buildings' energy performance, and this is mostly due to our incomplete capacity to model people's needs and behaviours. In fact, by targeting comfort as *general acceptability* (thermally, visually, etc.), and hence maintaining indoor environmental settings within a narrow range of static conditions, conventional design practices neglect the differences in personal demands and individual perceptions that drive users' requirements and, ultimately, influence their energy control actions. Similar considerations apply to the contexts that frame our lives of urban dwellers. Our cities are unvaryingly electrically lit at night, without considering the effective density of demand, the need for differentiation of the light signal (e.g., based on circadian or visual efficiency functions), its distribution, or the need to preserve the requirements of non-human urban inhabitants (flora and fauna).

Crucial steps are urgently needed to sustain the energy transition. Immediate, resolute, and collective responses are required by policy-makers, city-planners, building designers, developers and stakeholders, and by the general population. As per the commitment recently outlined by Ursula von der Leyen, President of the European Commission, "*We stay ambitious. We stick to our growth strategy. And we will always strive for a fair and just transition! That means a fair outcome for future generations – to live on a healthy planet*".³ To succeed, this is a commitment we should all be part of.

Sergio Altomonte, LAB President

1 - Guterres, A. (2022). *Statement by the Secretary-General at the conclusion of COP27*. Sharm el-Sheikh. 19 November 2022.

2 - Altomonte S., Altomonte C. (2023). COP27: A Step Ahead or a Missed Opportunity? *Buildings & Cities*, buildingsandcities.org.

3 - Von der Leyen, U. (2023). *State of the Union 2023*. Strasbourg, 13 September 2023.