EERA JP e3s workshop:

Cultural Engagement Through Digitalization as a Driver of the Clean Energy Transition

PROCEEDINGS

Date: 25th September 2024
Event: Sustainable Places 2024 Conference
Format: Online Workshop
Organizers: EERA Joint Programme on the clean Energy tranSition for Sustainable Society (e3s)
Workshop Duration: 90 minutes

The **recording of the workshop** is accessible **here**.

Overview

The workshop, **"Cultural Engagement Through Digitalization as a Driver for a Clean Energy Transition,"** focused on exploring how cultural engagement and digitalization can empower citizens to support the clean energy transition. Participants discussed the roles of cultural and creative sectors, digital tools, and research insights to drive behavioral change and energy demand and CO2 emissions reduction.
The session featured presentations from experts in social and environmental psychology, digitalization of the built environment and heritage, and arts-science collaboration, emphasizing how interdisciplinary approaches can engage citizens effectively. Alessandro Sciullo, coordinator of the EERA Joint Programme e3s, moderated the event.

Opening Remarks and Workshop Context

Alessandro Sciullo provided an introductory overview of JP e3s' objectives and Sub-Programmes, highlighting JP e3s' commitment in investigating social and cultural approaches to a sustainable clean energy transition. Sciullo specified that the workshop was organized within the framework of Sub-Programmes 1 and 2, which focus respectively on energy demand reduction through behavioural change and energy justice.

Keynote Presentation: Ezilda Costanzo

Ezilda Costanzo, Senior Researcher at Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), delivered the keynote. She

outlined the influence of social and cultural norms on energy behaviours, emphasizing that cultural engagement can increase environmental awareness and behavioural change. Costanzo presented the findings from the survey elaborated by JP e3s on energy-related cultural initiatives, mentioning the progress in the acknowledgement of Culture for Climate empowerment. She highlighted the need for stronger collaboration between cultural and scientific sectors. She suggested that digital tools, like the Internet of Things (IoT) and immersive environments, offer valuable channels for awareness and data gathering, and presented related best practices that have been shared from JP e3s members in the survey

Speakers Highlights

Prof. Pierluigi Sacco (University of Chieti, Italy and Advisor to the OECD) examined the limitations of the "nudging" approach, commonly used to prompt behavioural change, and proposed an alternative rooted in arts-based emotional engagement and neuroscience applications. Sacco explained that traditional nudging, which often minimizes emotional responses, has shown only short-lived and modest effects on behaviour. He argued that emotional engagement through arts-based interventions could foster stronger, more lasting behavioural change. As an example, Sacco shared insights from *Bourges 2028* (European Capital of Culture in 2028), where the cultural program is focused on "radical sustainability." Projects like the *Parliament of Rivers* invite citizens to "represent" local rivers in a symbolic parliament, encouraging emotional identification with environmental preservation. Sacco noted that digital platforms linked to the renovation of the railway station in *Bourges 2028* play a crucial role in widening the project's impact by allowing a broader audience to participate virtually in this transformative initiative.

Prof. Christian Klöckner (Norwegian University of Science and Technology, NTNU) discussed the power of art in triggering reflection and emotional responses, based on findings from the *Climart* project. This project explored how climate change-inspired artworks, like the *Pollution Pods* installation, can affect viewers' attitudes and intentions toward environmental action. The *Pollution Pods*, an interactive experience where visitors walk through domes mimicking polluted air conditions in cities worldwide, elicit a visceral response to air quality issues. Klöckner highlighted that both positive and negative emotions, such as hope and guilt, elicited by the artwork can foster reflection on personal environmental responsibility. His research shows that art installations like these, when strategically placed in public spaces, can inspire more substantial support for climate policies and personal behaviour adjustments among audiences who may not typically engage in climate discussions.

Prof. Gülben Çaliş (EGE University, Turkey) presented her work on digitalization in buildings and the role of culture in shaping energy-efficient design. She explained how smart building systems - equipped with IoT devices, automation, and analytics able to capture occupants' use- can optimize resources like heating and lighting to reduce consumption. However, Çaliş noted that occupant behaviour, often influenced by cultural norms and habits, can significantly impact a building's energy efficiency. Addressing this "energy performance gap" requires adaptive systems that consider not

only technical specifications but also cultural usage patterns, such as varying heating and lighting habits across regions. Çaliş also shared examples of interactive digital platforms in cities like Stockholm, where citizens can monitor their energy usage through smart meters, fostering a deeper personal connection to energy conservation efforts.

Dr. Antonella Passani (T6 Ecosystems) explored how citizen science and arts-science projects can drive behavioral change, especially when combined with meaningful engagement practices. She emphasized the diversity of engagement levels, from simple data collection with IoT devices to deep involvement in research design, as critical to long-term impact. Passani noted that projects that involve citizens in problem framing and data analysis, as opposed to passive data collection, lead to greater behavioural shifts. She cited examples like *Street Spectra*, which engaged citizens in analysing light pollution through data mapping, demonstrating how project duration and involvement levels influence behavioural outcomes. Passani advocated for inclusivity in citizen science, stressing the need for diverse participant backgrounds to prevent bias in engagement data and to ensure that behavioural change initiatives are accessible and impactful across various demographics.

Discussion and Key Takeaways

The workshop concluded with a discussion on best practices for integrating cultural engagement and digital tools into energy transition strategies. Key takeaways included:

- **Emotional Engagement**: Leveraging arts and cultural participation can foster emotional connections that drive more substantial and lasting behavioral changes.
- **Digital and IoT Tools**: Digital platforms can broaden access to energy-awareness initiatives, enabling interactions that were previously confined to physical spaces and facilitate data collection from citizens.
- **Cultural Relevance**: Adaptations based on local cultural contexts can make energy transition efforts more resonant and effective.
- **Interdisciplinary Collaboration**: Integrating cultural and social sciences with technology can address behavioral gaps and improve evaluation and scalability of sustainable practices.

Future Steps

The workshop organizers highlighted ongoing JP e3s initiatives, including a focused discussion group on cultural engagement and energy behaviour change and a planned publication on creativity and smart cities.