Cultural audience engagement for the clean energy transition
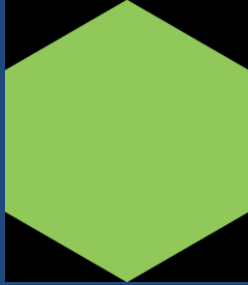
Opportunities and evidence

EERA JP e3s Conference *"Fostering changes in energy consumption: a pathway to demand reduction"*.
Padova, October 26th 2023

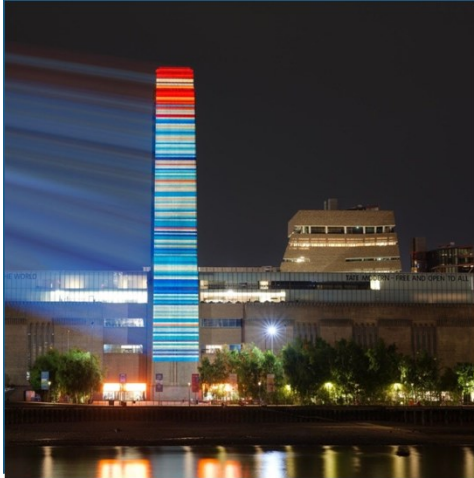**Ezilda Costanzo,** Energy technologies and renewables Department

Culture for climate

- The arts can emotionally transfer scientific messages complementing conventional knowledge

- Culture is increasingly committed to sustainable development and Climate

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Art … of persuasion

Climatestripes on Tate Modern Chimney, London

Visualization of the progressive Planet heating over nearly two centuries. Collaboration with **University of Reading Dpt. Meteorology**, #showyourstripes #climatestripes (21st June 2023)

*Persuasion relies on: Ethos (*character*), an appeal to moral principles. Logos (*reason*), an appeal to logic. Pathos, (*experience*) an appeal to emotion.*

(IV bC, Aristotle, Rhetoric)

Art typically uses **novel metaphors***, analogies or narratives, which climate communication generally lacks.*

Art can provide people with visualizations of the problem and give them a **personal experience** *…*

Art may also help to establish a group identity and to give people a sense of being **supported** *in their efforts to help* **combat climate change***.*

(2017. L. Roosen, C. A. Klöckner, J. Swim, Visual art as a way to communicate CC: a psychological perspective…)

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EERA JP e3s Conference "Fostering changes in energy consumption". Padova 26.10.2023

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Role of culture on behaviour change for Climate

Fostering knowledge valorisation through the arts and cultural institutions

Study by DG RTD E.2. **Knowledge Valorisation** Policies and IPR, September 2022

Council recommendation (EU) 2022/2415 (Guiding principles)

- 2018 UNESCO (Culture for 2030 Agenda)

- 2021 G20 Summit (Declaration of Ministers of Culture, Rome)

- 2022 ICOM (new definition of "Museum")

- 2023 OECD "cultural participation has multiple benefits ..can promote behaviour change to address social challenges"

In the **European Union**:

- 2018 Agenda for Culture: "culture as an engine for sustainable social and economic development"

- ERA Policy Agenda 2022-24 "science closer to citizens"

- 2021 New European Bauhaus, promoting a transdisciplinary transition with behaviour change as a short-term goal to meet EU Green Deal targets

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Cultural organisations: possible social functions

- Education, enjoyment, reflection and knowledge sharing
- Social innovation engaging citizens and wider audiences compared to typical research outreach (e.g. museums for co-creation and empowerment)
- Inclusion, accessibility, care
- Mobilise local action (sense of belonging)

Action on Climate can attract resources (Next Generation EU) and audience, as 98% of Europeans are aware of Climate urgency and up to 50% feel personally exposed to risks

Increased demand from citizens for participating in the science and research debate

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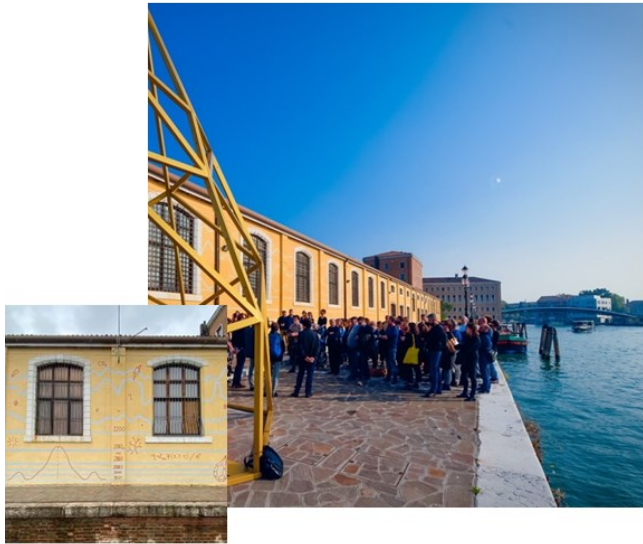EERA JP e3s Conference "Fostering changes in energy consumption". Padova 26.10.2023

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2 Arts and Science

- Several cultural and creative industry-led initiatives on Climate in the last years

- What interaction between the Arts, Culture and Science/Research sectors?

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Activist art with research and people for Climate

2017, Andreco. **«Sea Level Rise»** (related to COP23)

With ISMAR CNR Institute of marine sciences. University Ca' Foscari and Region Veneto for restauration in 2022

2013, Tomas Saraceno. **"Solar Bell"**

Flying square, for an utopian land. With Aerospace Engineering Faculty at TU Delft, NL

2003, Olafur Eliasson. **"Weather Project"**

Turbine Hall, Tate Modern, London

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Many cultural initiatives, different interaction with R&I

- EU S+T+ARTS (Ars Electronica Linz, Bozar, Centre Pompidou, ZKM Karlsrhue, Biennale Tecnologia Turin, MAXXI, Milan Triennale, Venice Biennale…)

- Performances (*Flumen*), music (*Karma Klima*), Comics & Novels, Murals …

Muro dell'Energia, Bovisa station
ENEA, Politecnico di Milano, Designers

EVERYBODY TALKS ABOUT THE WEATHER

Fondazione Prada and
New Institute Centre For Environmental Humanities
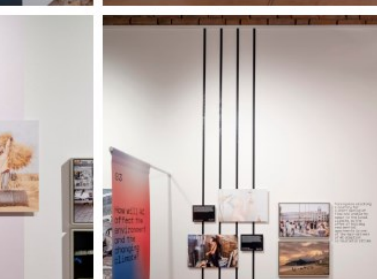NICHE, Ca' Foscari University, Venice

8

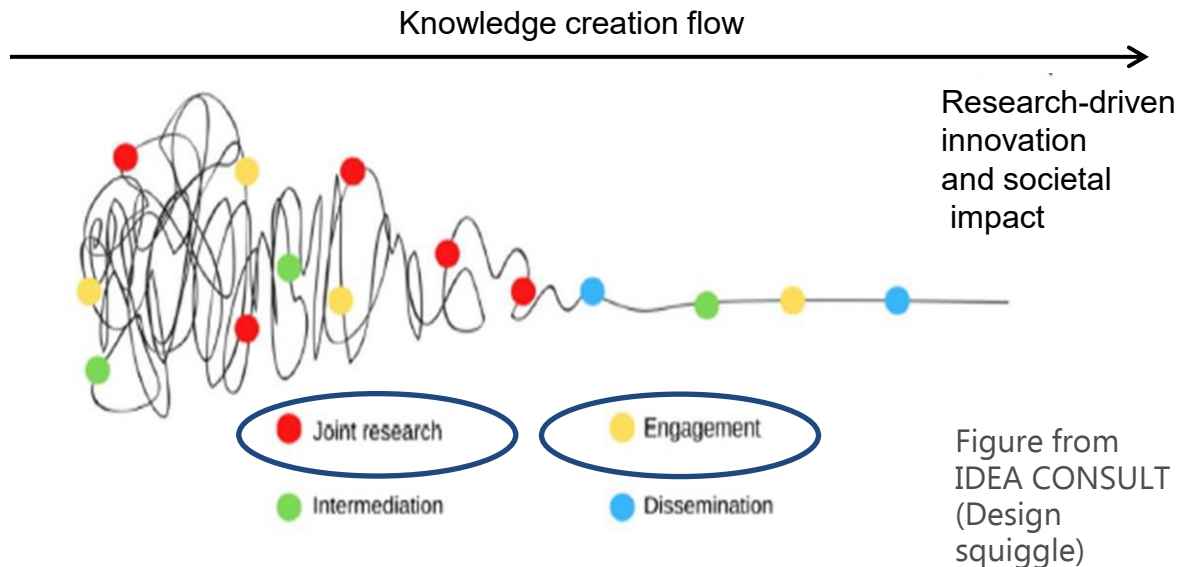# A case: ENERGYA and the Cooling Solution exhibit

- ERC funded research: from energy use data to scenarios of climate-induced energy demand and environmental and socio-economic implications

- The exhibition: photography (by Gaia Squarci) to show how people adapt to high temperatures and humidity (energy demand for air conditioning)

- A durable website and a survey for feedback

Leading role of Department of economics
Ca' Foscari, University of Venice and Center for Environmental Humanities NICHE

www.thecoolingsolution.com/

the
cooling
solution

A scientific project that uses photography to investigate how people of different socioeconomic backgrounds around the world adapt to high temperatures and humidity.

02. Reasons
01. Air-conditioning
03. Environment
04. Society

Best experienced on desktop & laptops!
On desktop, use your mouse wheel & on laptops, use two fingers on the touchpad.

On view in Venice
from May 19th till July 31 2023

06. Quiz
08. Shop

What is your cooling solution?
Why will you buy an Air Conditioner?
How will AC shape our environment?

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Joint research-driven innovation and societal impact

Knowledge creation flow

Research-driven innovation and societal impact

Joint research

Engagement

Intermediation

Dissemination

Figure from IDEA CONSULT (Design squiggle)

- **Joint research with Arts**: feed research during the scoping phase with speculative thinking

- Hybrid spaces for **higher level of engagement:*** citizens labs, creative hubs and maker spaces, allowing for new research-based visions and solutions

* Space for improved citizens engagement in Energy R&I: e.g. EU Collective Energy Projects show mid-level of engagement or consultation such as surveys, interviews, workshops (JRC 2022)

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10

3 Monitoring & Evaluation

- Call for evidence of the impact of cultural initiatives (e.g. G20 Culture WG, EU NebLab)

- Citizens Science as enabler of Art/science collaboration and behaviour change?

ENEA

M&E: potential behaviour change is rarely analysed

2020-2021 UK programme "**Season for Change**" : urgent and inclusive action on climate change

- 29 thematic cultural events on Climate Change (of the 230 submitted to the open call), before COP26

- 231.000 participants (in presence!) and 182.000 on line

- > 1 Million reached through media (86% out of London)

- 3,000 artists involved in debates and meetings

- Durable online toolkit (how to act, organise an event, create an artwork, tell stories, participate to a network) with the aim of reaching 10M people

- Audience research "proved" the effectiveness in stimulating behavioral and attitudinal change" (2021 Assessment report and Audience Insight)

Interviews with people (SfC audience)

Stepping outside everyday life and focus on climate change

Increased mindfulness and awareness of the impact of personal choices

Greater understanding of the possibilities for combatting climate change

More awareness that the impacts are different for different communities, both locally and globally.

Opportunities to connect with like-minded people and space for reflection

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12

M&E: potential behaviour change is rarely analysed

Creative cities

Can be incubators of lifestyle change, but citizens' visions and energy-related behaviors for zero-carbon cities are unknown.

Few virtuous examples:

- World Cities Culture Forum presents inspiration cases for climate-cultural programmes
- Creative Scotland *Climate Beacons* initiative (ongoing) following COP26 in Glasgow

JRC Cultural and creative cities monitor: 24 indicators on cultural, social and economic vitality

UNESCO Culture|2030 Indicators: Environmental impact of cultural products/practice

Impact on behavior change is not taken into account

Initiatives: insight into behaviour change

I**nterviews and questionnaires, gaming and apps, pilot studies** (behavioural science)

- Increased awareness and learnings
- Increased understanding of socio-cultural aspects
- Availability to change attitudes and behaviour
- Inclination to use clean technologies
- Commitment to act as an ambassador, champion

OECD (2023) How to measure the impact of culture….

- Total carbon footprint of the event operation (buildings, set-up, transport, …)"

- % of target groups reporting a change towards more sustainable behaviours

Citizen science: boosting engagement and democracy

Citizen Science (CS): volunteer participation in scientific research: co-creation of R&I questions, collecting/analysing data, computing

- Enables art/science collaboration and policy monitoring

- Practiced by Museums and Civil Society Organisations

- May generate new perspectives on research subjects

- Can provide monitoring/feedback data on energy- and environment-related behaviours on a large scale (opportunities from IoT, digitalisation)

- May create behaviour change: e.g. lifestyle changes, political activism, local conservation (Ceccaroni L., 2020)

Few CS projects (6%) focus on sustainable resources and energy efficiency

Few CS projects are built through a co-designed process

Lack of requirements for reporting and monitoring social impact

Different data policies and management principles (licenses, access, use)

Need for a data infrastructure

Turbé, A., 2019, study on 500 EU CS projects

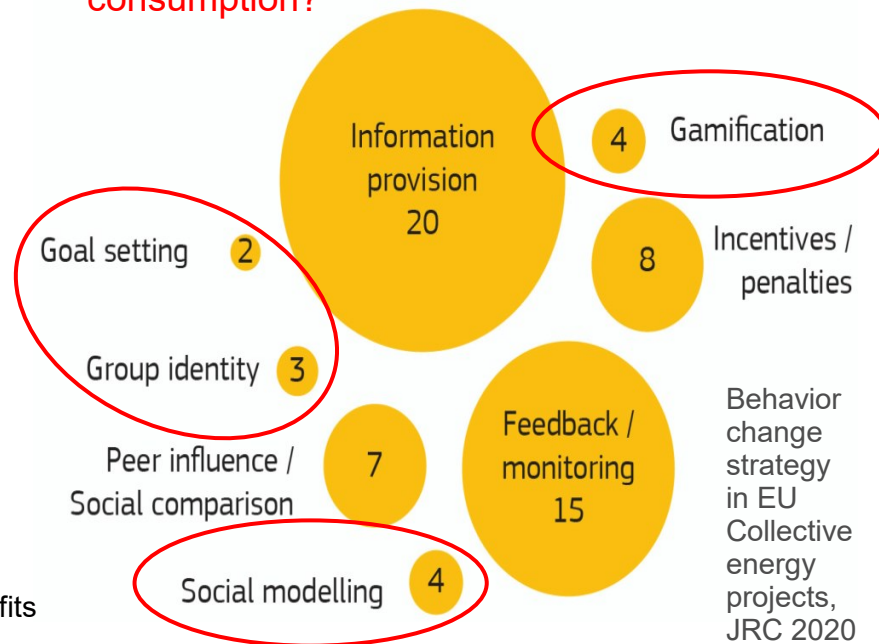*Best practices in Citizen Science for Environmental monitoring* , EU Commission, 2020)

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Conclusions

Benefits of Energy R&I and Culture&Creative Industry (CCI) collaborations

- Outreach, media interest

- Higher engagement and Responsible R&I

- Novel way to create impact from research

- Reveals directions for product/service innovation (clean energy tech., efficiency)

- New governance (and partnerships)

- New skills in STEM CVs (STEAM)

See EU project DITO (2019), Citizen Science and Art/Science benefits

Can CS and Art/Science provide **new strategies** to address **behavioral change** in energy consumption?

Information provision 20

Gamification 4

Goal setting 2

Incentives / penalties 8

Group identity 3

Peer influence / Social comparison 7

Feedback / monitoring 15

Social modelling 4

Behavior change strategy in EU Collective energy projects, JRC 2020

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