SOI-176

Challenge: Back to the Future: energy security and Microalgae

Exploring circularity and multicultural future imaginaries

Apply here and select "**SOI admission apply 2026/27 - S1 (Challenges and BIPs)**"
Application **deadline**: Monday **7th September**

Challenge Provider: ECIU University
Diego Maranan, SEADS (Space Ecologies Art and Design), a transdisciplinary and cross-cultural collective of artists, scientists, engineers and activists, Professor at the University of the Philippines Open University.

Hosting Institution
Università di Trento, School of Innovation

Study Format: Blended

Study period: 12 November - 18 December
In presence: 16-20 November 2026 in Trento

Calendar of activities:
12/11/2026: Warm Up, presentation of the Challenge (online)
16/11-20/11: In presence week in Trento
01/12: Sectors of Application (online)
11/12: 3 Scenarios presentation (online)
18/12: Grand Finale (online)

Learning Outcomes:

- Apply Futures-Thinking Tools: Utilize and adapt foresight methodologies, including scenarios and back-casting, to map out future energy transitions.
- Investigate Energy Demand Drivers: Analyze how cultural imaginaries (e.g., solarpunk), shifting desires, habits, and societal assumptions about comfort and consumption shape energy demand.
- Evaluate Alternative Energy Sources: Explore innovative and distributed energy systems, ranging from microalgae and circular bio-resources to human-scale generation, storage, and harvesting methods.
- Prototype Responsible Solutions: Co-create concepts and recommendations that are technologically plausible, socially grounded, and ethically informed.

- Cultivate Critical Imagination: Develop the capacity to rethink sustainability, moving beyond resource extraction and scarcity toward sufficiency, solidarity, and more-than-human ecological resilience.

The Challenge

This edition of Back to the Future invites learners to explore energy security in a time of volatile fuel prices, climate disruption, and deepening inequalities. Working in multidisciplinary, international teams, students will collaborate with SEADS (Space Ecologies Art and Design), to imagine more just and resilient energy futures. Using tools inspired by futures such as adaptations of scenarios and back-casting, participants will investigate how changing desires, habits, and cultural imaginaries shape energy demand, as well as where future energy might come from: from microalgae and circular bio-resources to human-scale and distributed systems. Throughout the week in Trento and in complementary online activities, students will prototype concepts and recommendations that are technologically plausible, socially grounded, and ethically informed. The challenge aims to cultivate critical and imaginative capacities to rethink energy beyond extraction and scarcity, towards sufficiency, solidarity, and more-than-human sustainability.

CHALLENGE QUESTIONS:

What kinds of futures become possible under conditions of energy scarcity, instability, or transition?

- IMAGINATION: How might culturally situated imaginaries of the future (e.g. solarpunk, island futures) inspire alternative models of energy sufficiency and abundance?
- ENGINEERING AND TECH: How might energy be generated, stored, shared, or harvested differently in everyday life?
- DESIRE AND BEHAVIOR: What assumptions about comfort, convenience, mobility, and consumption shape contemporary energy demand?

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