

NEW SOURCES OF ENERGY

Using long live waste & Hydrogen

Jean-Christophe de Mestral, Transmutex
Elli Varkaraki, Epfl & Planair
Marie-Christine Sawley, ICES – moderator

Energy panel #2, ICES 2022 Summit, Geneva



CHALLENGES

Steering towards new ways of producing or extracting energy which must be, at least

Renewable

Accessible

Affordable



Exploring
multiple new
ways to
extract energy

...only 3
examples
from the last
quarter....



Solar kerosene for
planes

1

Small Modular
Reactors

2

CO₂ heating fluid
for urban networks

3

1 Solar kerosene for planes



[Solar Fuels](#) [Technology](#) [Solar Heat](#) [About](#) [News](#)



SWISS to be the world's first airline to use Synhelion solar fuel

Zurich Airport and Lugano, Switzerland. 1 March 2022

SWISS and the Lufthansa Group have concluded a strategic collaboration with

2

Small Modular Reactors

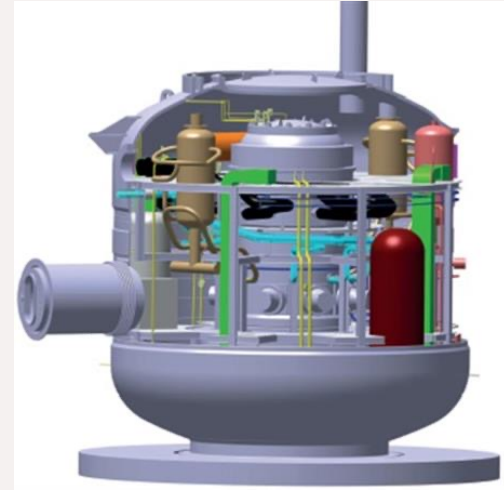
NUWARD™

2 x 170 MW power

Built by EDF France

security assessed by

Finland and Czech Republic
energy agencies

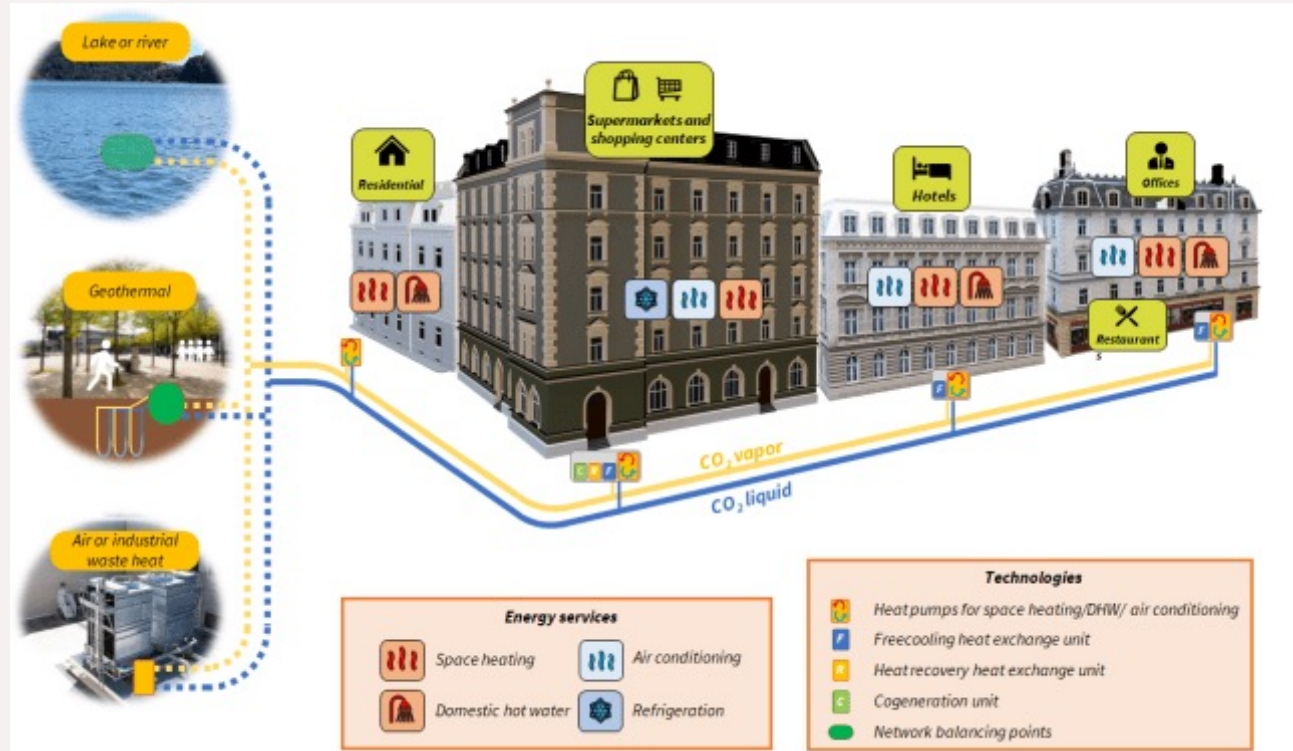


“Cooling down and heating with CO₂: ENERGYPOLIS is testing a totally new system”

3

CO₂ heating fluid for urban networks

HES-SO
&
EPFL Wallis



Fil rouge of the panel

Take us out of the maze!

From innovative ideas to
functioning solutions for
industry & society



Panelists with a solid industrial and business background



Jean-Christophe de Mestral, Transmutex

Jean-Christophe de Mestral studied physics in the UK. He began his career in banking and finance and worked for several years in the area of chaotic systems and artificial intelligence as applied to economics. While active as an independent board member of various companies in the financial and industrial fields, he joined a group of CERN engineers, which eventually became the international Thorium Energy Committee (iTheC), of which he is today President. He was one of the organizers of the Thorium Energy Conference at CERN in 2013, and heads the organizing Committee for the next Thorium Energy Conference under the patronage of CERN and IAEA in 2023. He is the author of a book on this topic, “L’Atome Vert”, and is a speaker at various venues, among them TEDxParis. He remains active in the field of finance, as occasional speaker in crypto and blockchain-related topics, and is chairman of the Board of the Eric Sturdza Bank in Geneva. He is also a member of the Board of Directors of Transmutex SA in Geneva.



Elli Varkaraki, Epfl & Yara

Elli Varkaraki studied chemical engineering at the EPFL and got her PhD in high temperature electrochemistry and catalysis at the same school. She started her career as a process engineer at Casale Group, Lugano, and in 2000 she moved to Greece, at the Centre for Renewable Energy Sources and Energy Saving, managing projects and working on the integration of hydrogen technologies with renewables. She represented Greece at the Executive Committee of the Hydrogen Implementing Agreement - HIA (now called Technology Collaborative Programme) of the International Energy Agency and contributed to several tasks of the HIA. She returned to Switzerland in 2012, as Head of electrolyser development at Belenos Clean Power Holding, then moved to SOLIDpower, for the development of solid oxide systems, to Planair, heading the Wind and Hydrogen department and recently joined Yara, as Global Expert Hydrogen. For the last 20 years, she is regularly working as expert for the European Commission and other National Research Institutions in the field of hydrogen technologies.

