

Future Energy in environmental development cooperation. The Italian contribution

An integrated approach to supply drinking water in Maldives

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Global water crisis

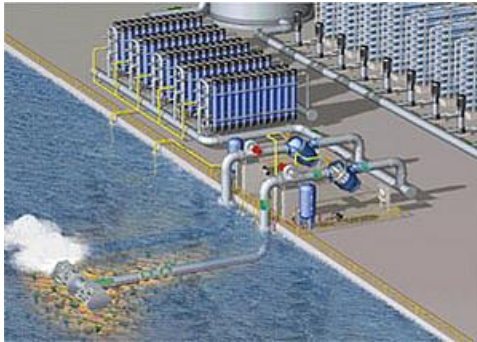
- 880 million people worldwide do not have access to clean drinking water
- 200 million hours are spent collecting and transporting water each day
- 3.4 million people die each year from lack of water and related illnesses
- 85% of the world's population lives in the driest half of the planet
- Producing 1kg rice requires up to 3,500 litres of water, 1kg beef up to 15,000 litres and a cup of coffee up to 0.140 litres.

“Annual global water requirements will reach 6,900bn m³ in 2030 – 40% above current sustainable water supplies.”

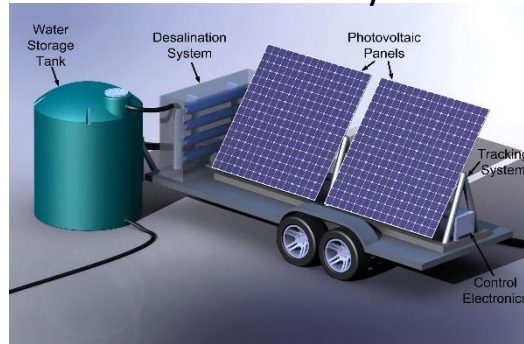
-Source: Global Trends 2030 – Alternative Worlds (2013) -

Water production

IN-TA-CT® in Membrane Plants

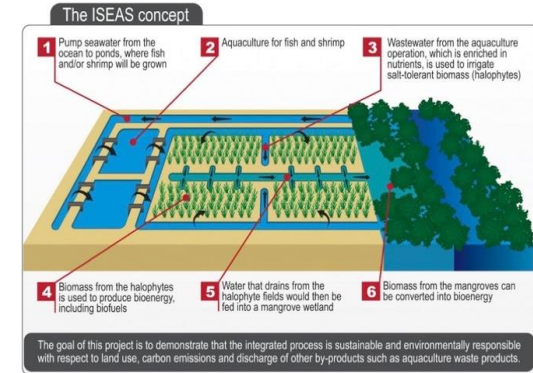


Electrodialysis desalination system MIT University



cleantechnica.com

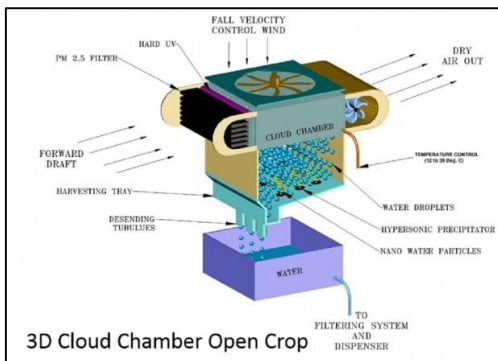
Integrated Seawater Energy and Agriculture System



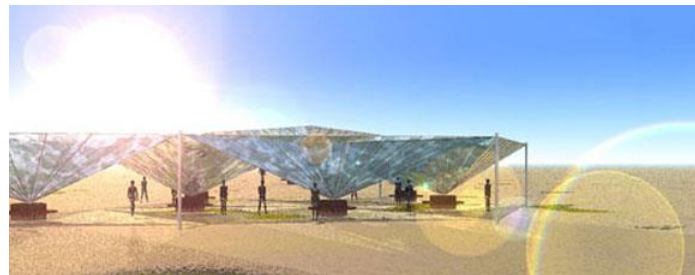
www.iflscience.com

From seawater

From air



Rain Tunnel Technology



<http://www.bcasa.it>

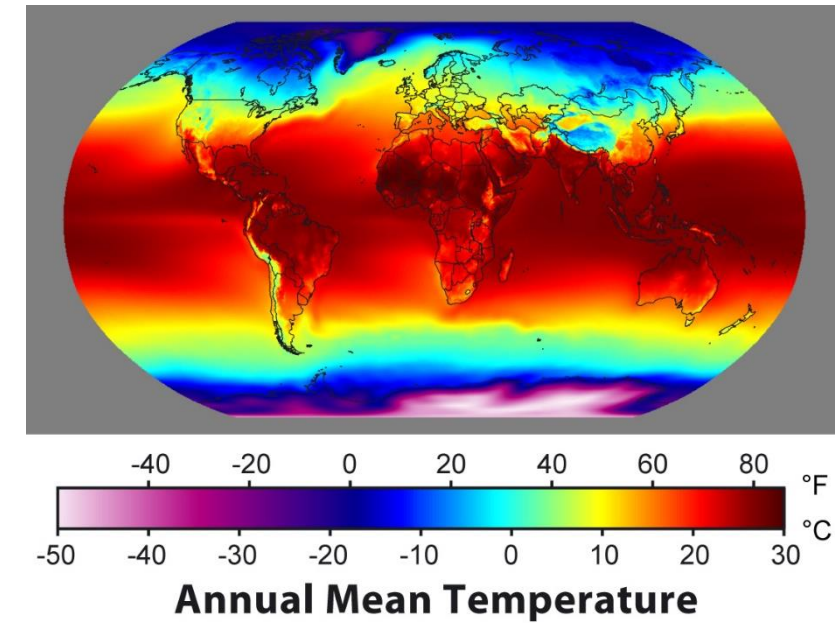
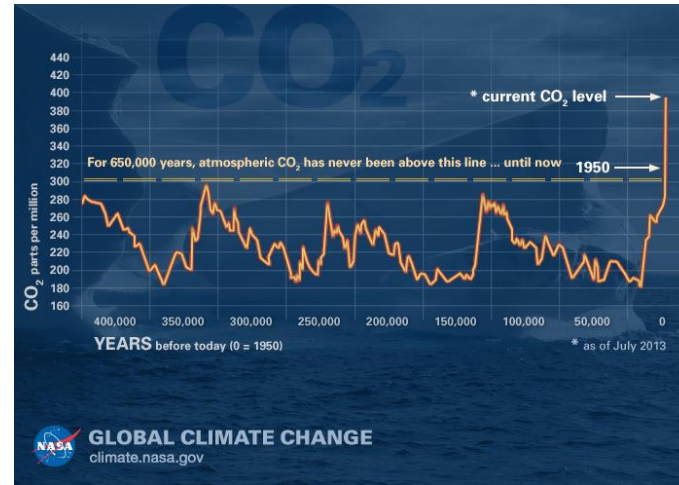
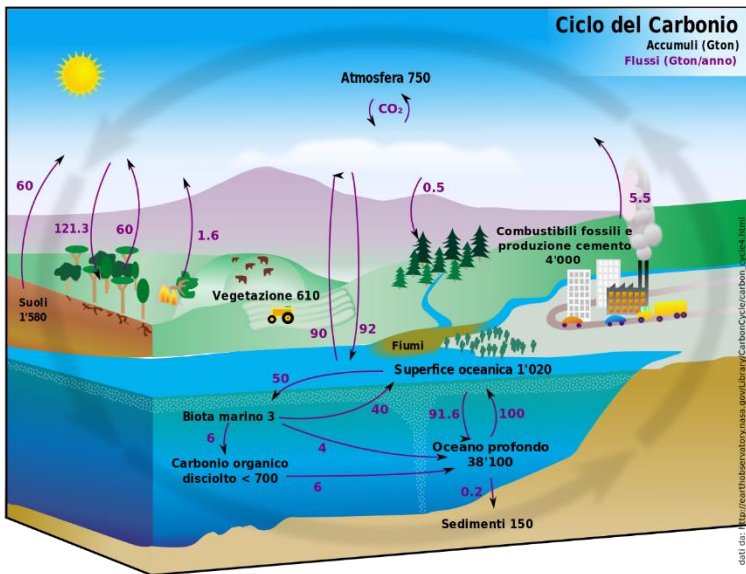


AVA MODULA-SEAS



All methods need energy

CO₂ Reduction and Renewable Energies



Biogas production from tuna industry waste

Just an **approximate example** based on the data of the local tuna production in Maldives

Fish waste from the fish market can be best utilised in the biogas production and production of organic fertilizers and composts, which have immense benefits over imported unsterilized organic fertilizers and chemical-based products.

This, could help in replacing fossil fuels in the Maldives attempts to become carbon neutral by 2020

Waste from the tuna industry*	700Ton/year
Biogas potential	250000m ³ /year
Biomethane potential	150000m ³ /year
Oil equivalent	123Toe/year
CO ₂ reduced	299Toe/year
Electricity production	2637500kWh/year
Water production**	1518073L/day
Person receiving water	15181Person/day

**Source: Maldives Water and Sewerage Company



Source: wikipedia

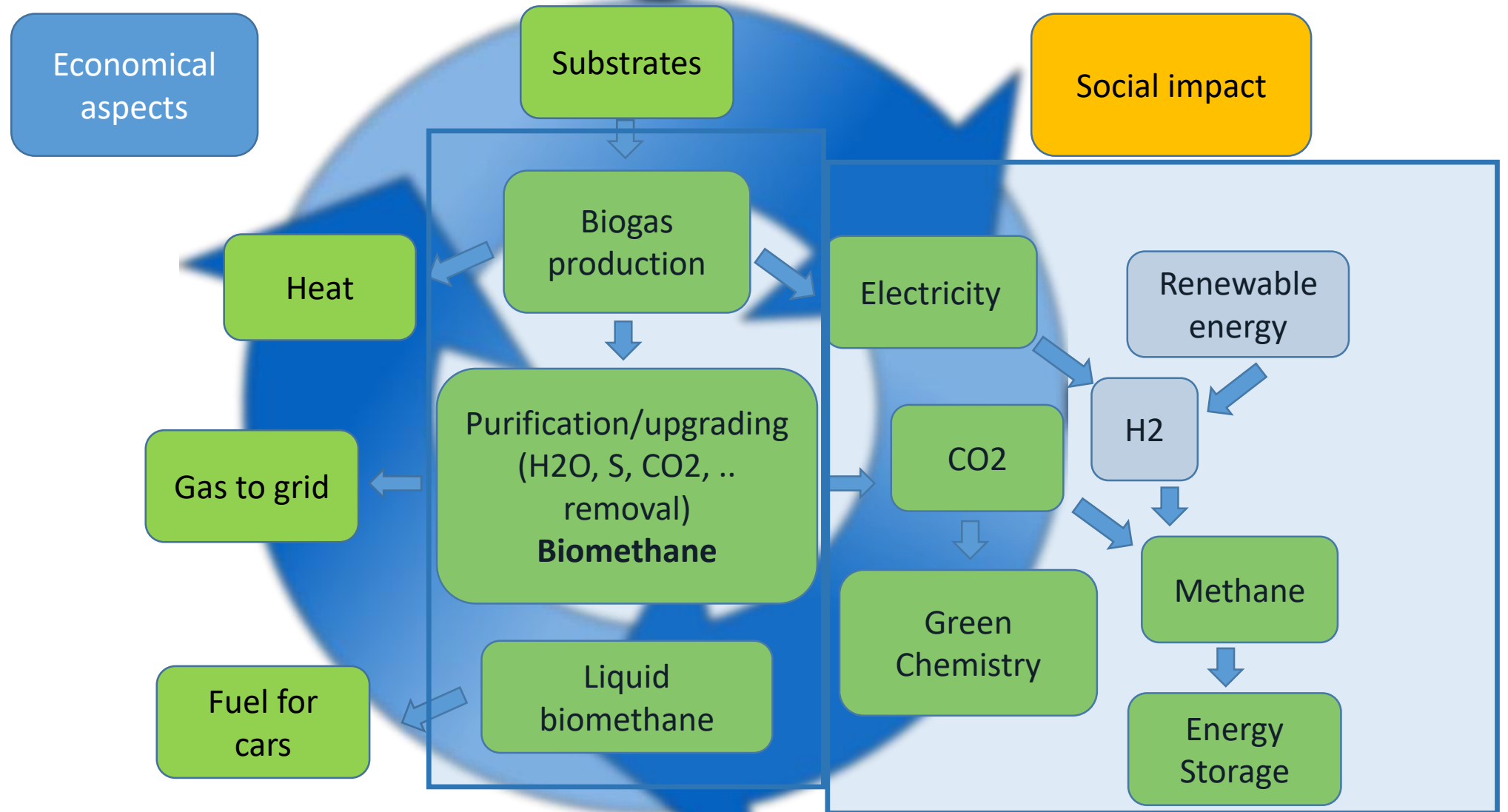


Source: wikipedia

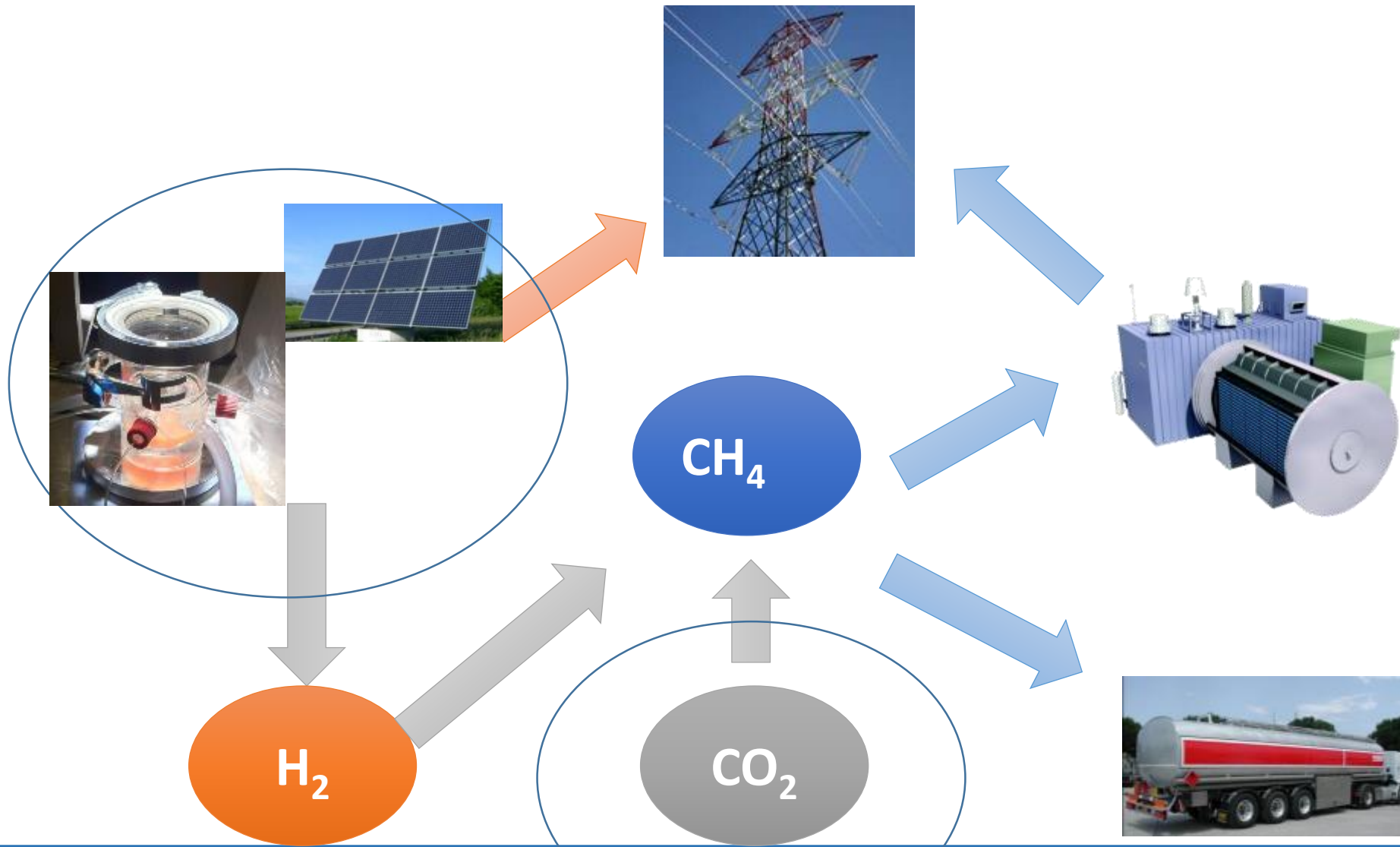


Source: www.bluepeacemaldives.org

Biogas an example of Circular Economy for energy supply

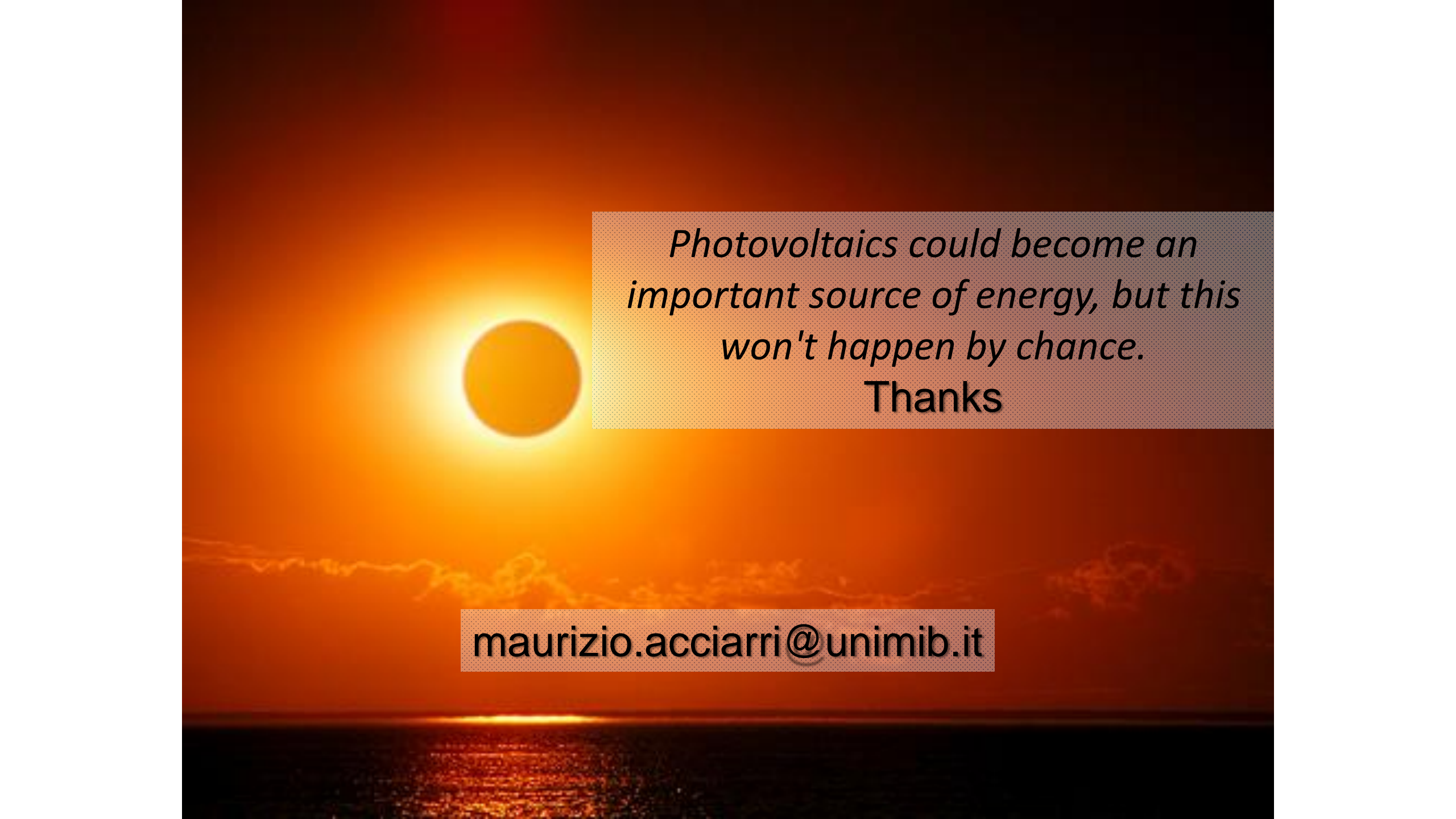


Energy store



Bicocca and waste treatment: a multidisciplinary approach

UNIMIB Departments:	Addressing ...
<ul style="list-style-type: none"> • Biotechnology and Biosciences • Computer Sciences, Systems and Communications • Materials Science • Earth and Environmental Sciences • Medicine and Surgery • Economics, Management and Statistics • Statistics and Quantitative Methods • Business Administration, Finance, Management and Law • Sociology and Social Research 	<ul style="list-style-type: none"> • Bio-based from wastes • Optimization of the substrates • Optimization of the digestion process • Biogas upgrading • CO₂ utilization • Renewable energy supply • Transportation technology • Environmental impact (Pollutant removal from waste waters) • Health care and hazardous waste • Climate change and waste management • Landfill • Human and social impact • Communication, Economical aspects and Legislative aspects

A sunset over the ocean with a large sun and a semi-transparent text box. The sun is a bright yellow circle on the left side of the frame, casting a long, shimmering reflection on the dark water below. The sky is a gradient of orange and red, with some wispy clouds. A semi-transparent grey box with a fine dot pattern is positioned on the right side of the image, containing text.

Photovoltaics could become an important source of energy, but this won't happen by chance.

Thanks

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