

UNESCO uniTwin Chair on Innovative, Sustainable and Clean Energy Research and Education

Prof. Ing. Aristide Fausto Massardo

*Launch of the UNESCO uniTwin Chair
Innovative, Sustainable
and Clean Energy
Research and Education*



United Nations
Educational, Scientific and
Cultural Organization

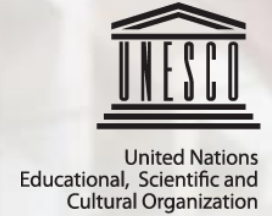


- UNESCO Chair on Innovative Sustainable Clean Energy
- Research and Education at the University of Genoa, Italy
-

Presentation outline

- 1. UniTwin program***
- 2. The Network*
- 3. The coordinator*
- 4. The chair and network activities*

To start - uniTwin program



- **WHAT IS UNESCO? Not only Heritage**

UNESCO is the United Nations **Educational, Scientific and Cultural** Organization. It seeks to build peace through international cooperation in Education, the Sciences and Culture. UNESCO's programmes contribute to the achievement of the **Sustainable Development Goals defined in Agenda 2030**, adopted by the UN General Assembly in 2015.

- **WHAT IS uniTwin ?**

is the abbreviation for UNESCO's university **twinning and networking system**.

More than 700 UNESCO Chairs and 45 **uniTwin** Networks are established within the program, involving over 700 institutions in about 120 countries.

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The Network



N	Name	Country
1	Università degli Studi di Genova	ITA
2	Arizona State University	USA
3	Savanna Agriculture Research Institute	GHA
4	German Aerospace Center	GER
5	National Research Institute of rural engineering, water and forests	TUN
6	Instituto Tecnológico de Aeronáutica	BRA
7	National Agriculture Research Centre	GIO
8	Strathmore University	KEN
9	Technische Universität Berlin	GER
10	Universitat de Vic – Universitat Central de Catalunya	SPA
11	Universidad Privada del Este	PAR
12	Universidad Politecnica de Madrid	SPA
13	Waterloo Institute for Sustainable Energy	CAN

Note: partners presentation of at the end of this one

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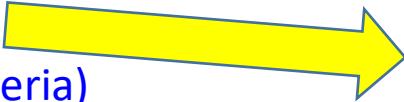
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University of Genova est. in 1481

- 32,000 students; 6,000 graduations per year
- 3,700 personnel units; 5 Schools; 23 Departments
- 4 different locations (Genoa, Savona, La Spezia, Imperia)

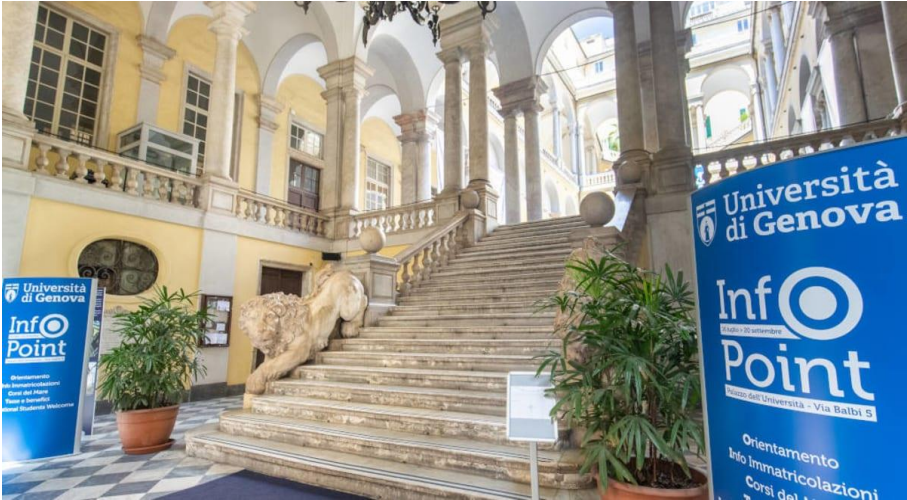


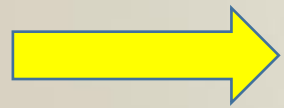
Polytechnic School est. in 1871

- *Five departments* → **DIME** → **TPGroup**
- 8000 students
- 300 professors and researchers
- 350 PhD students
- 3 locations (Genoa, Savona, La Spezia)



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Thermochemical Power Group – est. 1998

People: 30

6 professors; 4 researchers; 7 associate researchers; 12 Ph.D students; 1 technician

Scientific activities

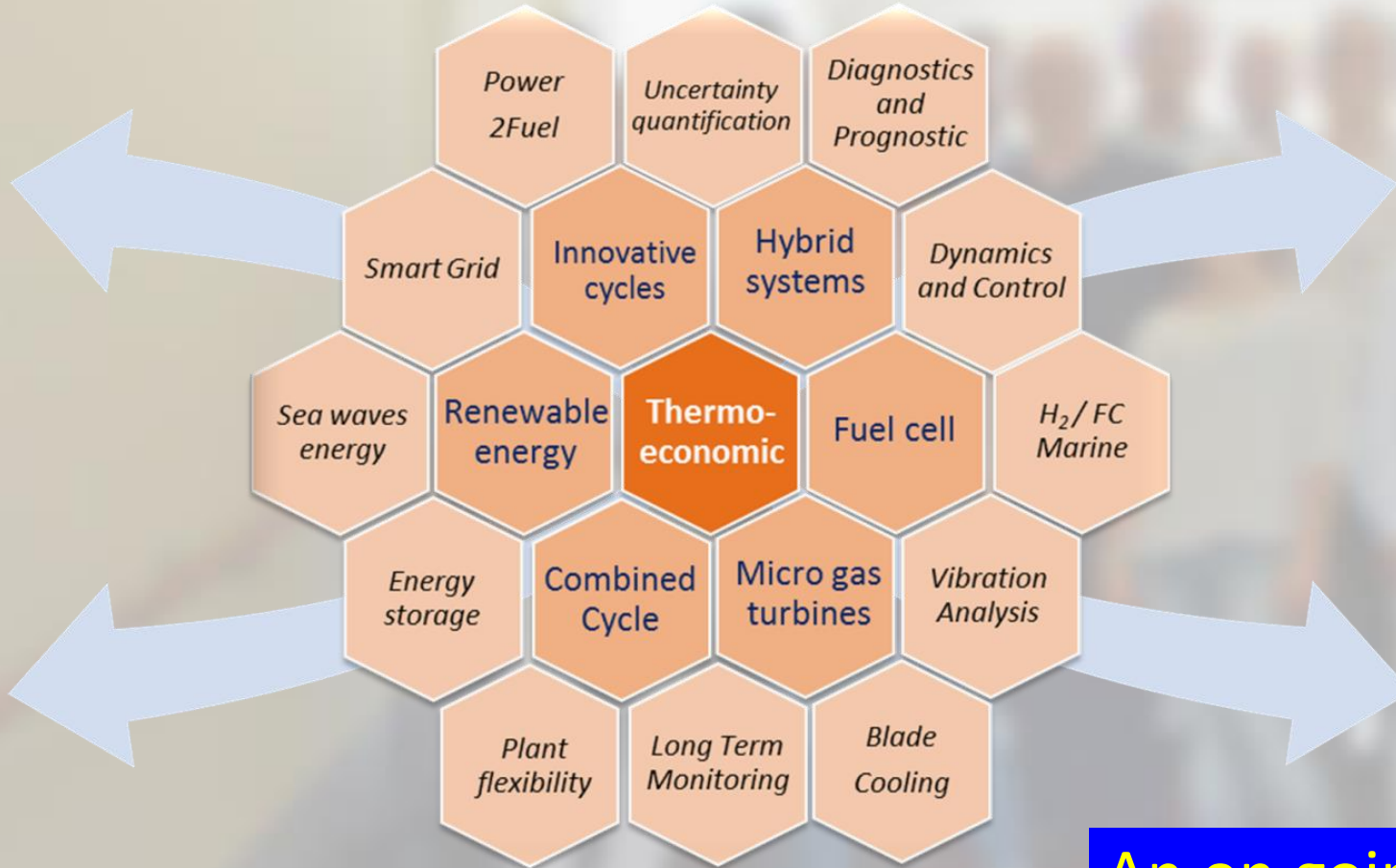
Publications, Awards, Patents, Spin-off

- ***350 International Papers - 230 Journals (1998-2020).***
- ***18 International Awards (1998-2020)***
- ***16 patents (1998-2020);***
- ***2 spin offs (BER – Sit Technologies).***

Funding

- ***International 65% (35% EU); National 35%***
- ***2.5 M€/year on a 20 years period (2000-2020)***

Our mission: research, education and technology transfer



- ✓ Energy systems
- ✓ Clean energy production/storage
- ✓ Innovative technologies
- ✓ Education

An on going pathwhat's next ??

European Research Projects: a very important network

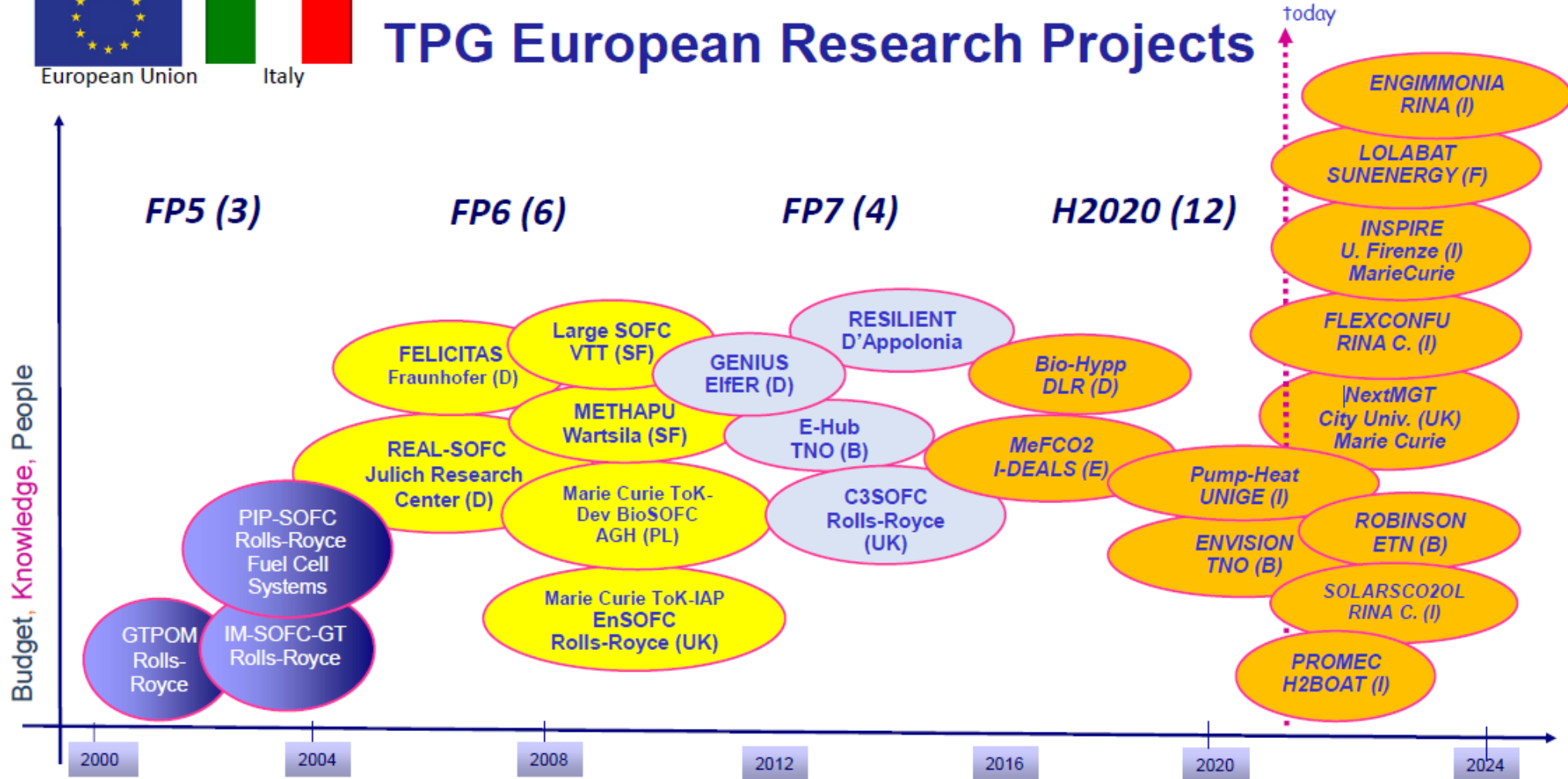
For details see: <http://www.tpg.unige.it/TPG/projects/>



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TPG European Research Projects



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Sustainable Development Goal 7

http://www.tpg.unige.it/TPG/tpg_care/

Goal 7:

Ensure access to affordable, reliable, sustainable and modern energy for all.



Access to energy

T7.1, ensure universal access to affordable, reliable and modern energy service

Renewable energy

T7.2, increase substantially the share of renewable energy in global energy mix

Energy efficiency

T7.3, double the global rate of improvement in energy efficiency

By promoting:

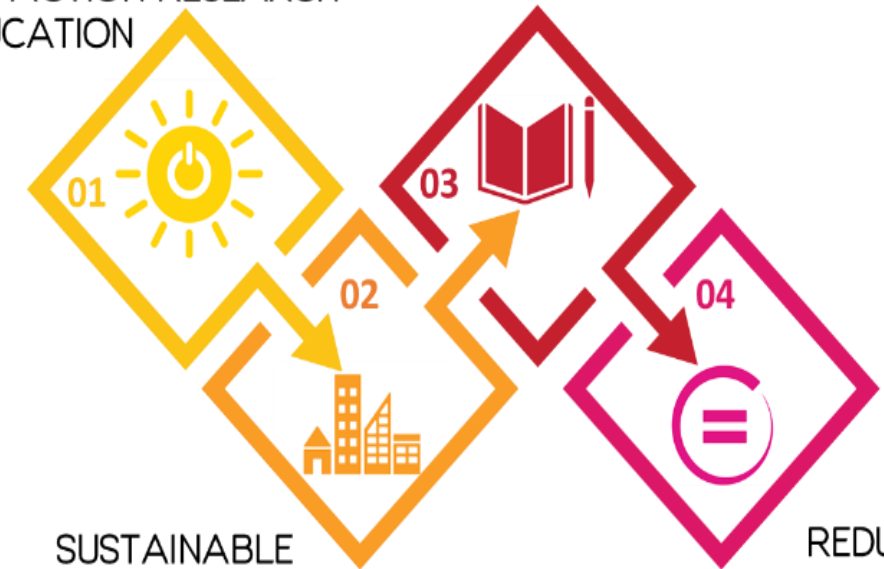
- Education
- Equity

Network Topics

- **Affordable, clean energy and climate action research and education**: exchanging the experience related to European context to other Countries and vice-versa, promoting already tested solutions to enhance a clean and responsible energy and environment scenario;
- **Sustainable city and communities**, throughout renewable energies, smart-technologies and responsible consumptions;
- **Quality education**: implementation and use of a virtual platform to promote educational activities (i.e. webinars, workshops, formation courses online) to share knowledge.
- **Reduced inequalities**, promoting mechanisms and regulations in order to assure an equal and sustainable development to other ones;

AFFORDABLE, CLEAN ENERGY AND
CLIMATE ACTION RESEARCH
AND EDUCATION

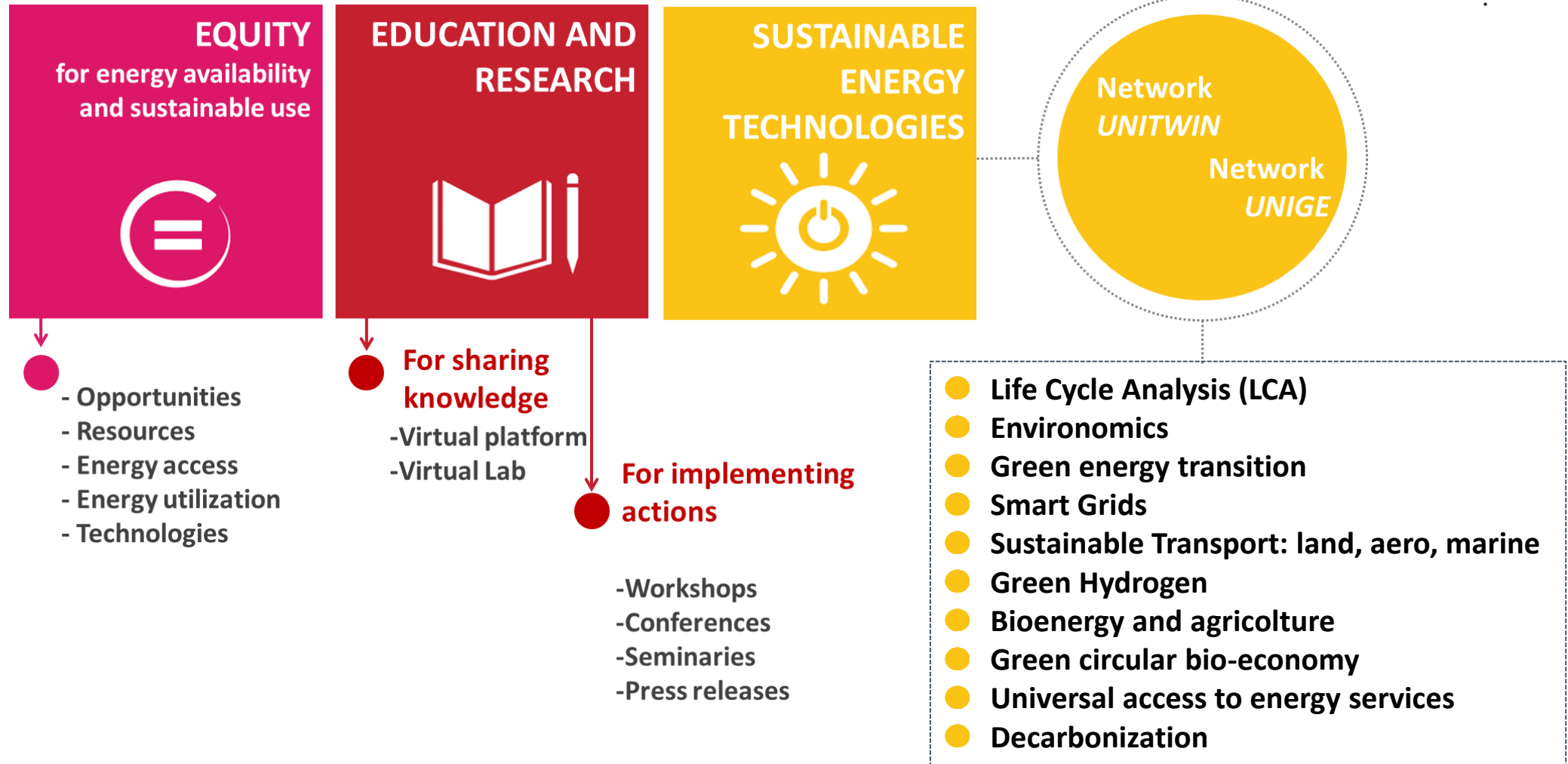
QUALITY
EDUCATION



SUSTAINABLE
CITY AND COMMUNITIES

REDUCED
INEQUALITIES

Program



UNIGE as coordinator will:

- *Promote and organize a web platform for the network partners*
- *Produce and develop virtual labs experiences*
- *Launch informative events*
- *Share a MOOC platform and produce online courses*
- *Cloud data sharing and networking systems*

Work package structure:

WP1 - virtual platform realization, including a set of teaching and learning tools designed to enhance a learning experience (electronic communication, threaded discussions, e-laboratories, Web publishing), and Internet links to external resources.

WP2 – education material production, academic education and research activities, comprehensive of lessons, courses, seminars and presentations to encourage knowledge transfer.

WP3 - dissemination activities (other research groups, other UNESCO networks, public bodies)

Conclusions

- *Thanks to **Unesco** and **UniTwin** for promoting sustainability and in particular our **Chair on Innovative, sustainable and clean energy**.*
- *Thanks to the **network**: the collaboration between four Continents with different energy systems and boundaries is a plus.*
- ***We have an ambitious program for innovative education based on research goals.***
- ***We are open to participation of other research centres, companies and public bodies: see roundtable !***

Thank you for your attention !