

Sustainable solutions to the energy and climate crisis

WHY

- Double challenge of energy demand and climate protection: Switzerland and the world must transform the energy system. Therefore, solutions for climate neutrality and security of supply are necessary.
- Seasonal energy gap requires large-scale seasonal energy storage systems.

The future of energy in Switzerland

- Coalition for the future of energy: Switzerland as a showcase, with the export industry in mind
- Supply: compensate for seasonal fluctuations
- Diversify energy sources, strengthen grid flexibility
- Achieving net zero: green energy carriers and CO₂ capture
- Best options for seasonal energy storage: hydropower and chemical storage (P2X)

Strategy and goals

- ETH Zurich, EPFL, PSI and Empa launched the Coalition for Green Energy & Storage (CGES) in 2023
- Building demonstrator projects for new scalable technologies
- Partners: research, industry, authorities and donors

WHAT

The goal is to rapidly develop large-scale demonstrator projects, referred to as "catapult" projects, using existing technologies with industrial support backed by scientific assessment. These "catapult candidates" (CC) act as lighthouse projects, serving as role models for global scaling.

	CC1	CC2	CC3	CC4a	CC4b
	Swiss Carbon Dioxide Removal (CDR) Technology Hub	Solid Waste Energy Storage Solutions	Sustainable Synthetic Fuels Accelerator	Net Zero Valley	Net Zero Campus
Rationale	Unleash Swiss innovation to make CDR technologies viable at commercial scale	Improving existing technologies to address Switzerland's winter energy gap	Accelerating technologies on the brink of maturity and demand take-off	Integrating mature technologies for rapid urban transformations	Leading by example: scaling up breakthrough technologies on campus
Technology	CO ₂ capture (direct air capture), CO ₂ storage (geological), methanol production, biogas with carbon capture and storage	Solid waste gasification and storage, H ₂ purification and storage, methane production from syngas, wood pyrolysis for H ₂ production	Water electrolysis, CO ₂ capture, methanol synthesis, methanol storage, SAF synthesis from methanol	Energy conversion and storage	Innovative H ₂ storage and CO ₂ storage

HOW

Joint forces and excellence of the two Swiss Federal Institutes of Technology, EPFL and ETH Zurich, as well as Empa and PSI with the expertise of industrial partners.

CGES Ecosystem

CGES association with members:

- business
- associations
- government/politics
- science/research

Benefits for the different stakeholders

Business

- Insights and know-how from cutting-edge research on their path to a net-zero economy
- Exchange of experience and know-how from peers in industry
- Opportunities to develop projects and host, assess and demonstrate novel technologies together with research institutions
- Coordination of investment efforts in P2X/green energy projects

Importance to society

- Close cooperation between CGES-associated players enables quick initiation of technological change
- CGES promotes the convergence of stakeholders, sub-projects, and technologies to create scalable, innovative solutions not currently available

Government/politics

- Access to early-stage information on potential projects
- Benefit from lessons learned from real-life project implementation
- Strong support to secure a sustainable energy supply for society

Science

- Gains insight into operational system needs and challenges
- Opportunities to share expertise in high-priority social areas

Join the CGES association now!

Membership for business: industrial partners, corporates, financing bodies

CGES brings together stakeholders from business, associations, academia, public entities, to create a platform for exchange and to push the realization of catapult projects.

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