

Project SUNFUELS: Towards commercial solar thermochemical production of sustainable drop-in fuels

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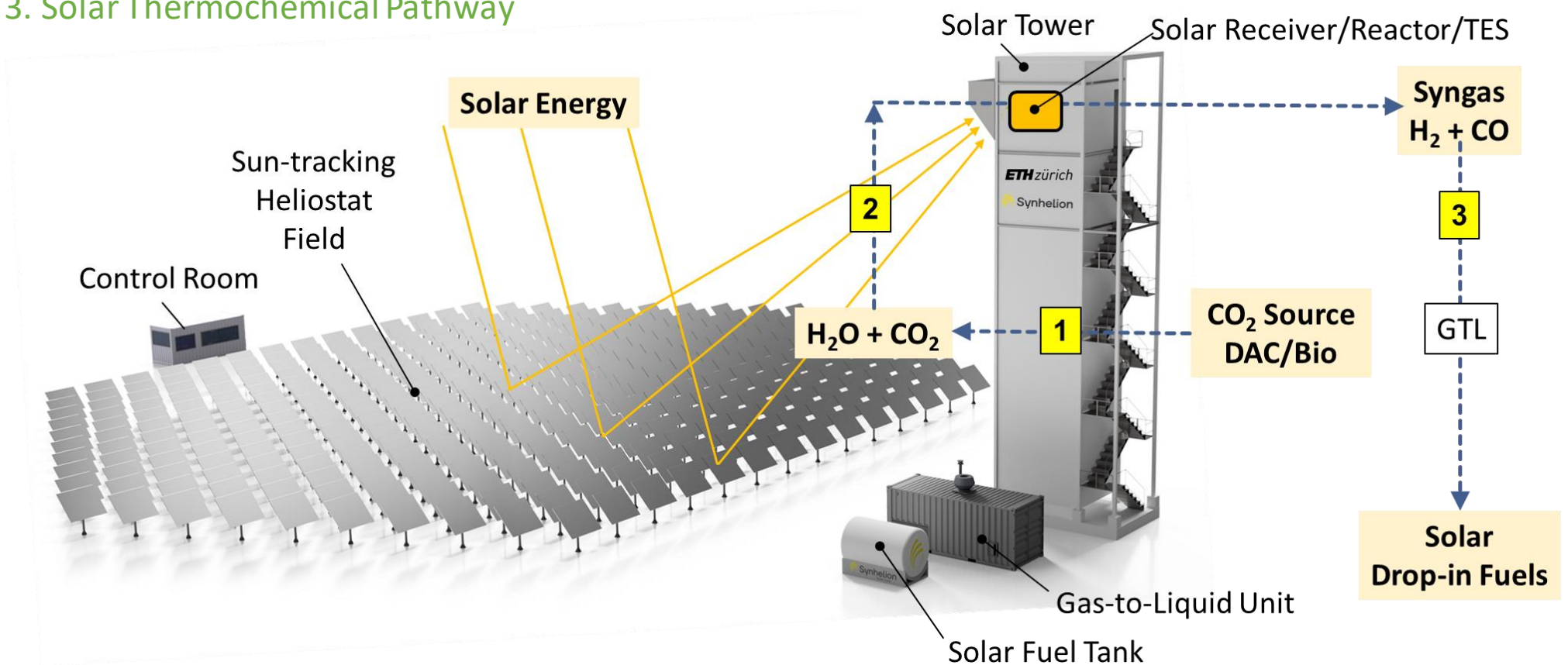
1. Motivation

- Long-haul aviation, shipping, and trucking are heavily dependent on liquid hydrocarbon fuels → high energy density and existing global infrastructure for their storage & distribution.
- Production of **drop-in fuels from CO₂ and H₂O using solar energy** → carbon-neutral substitutes for fossil-derived hydrocarbons
- Thermochemical pathway using concentrated solar radiation → high thermodynamic efficiencies and industrial scalability

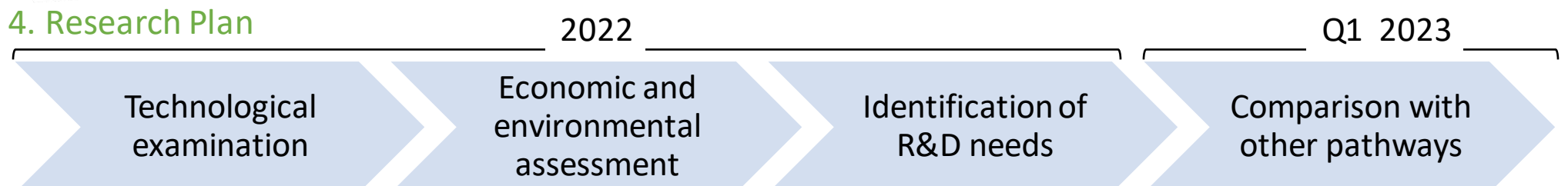
2. Project Main Goal

Determine the techno-economic feasibility of industrial-scale production of drop-in transportation fuels using concentrated solar energy

3. Solar Thermochemical Pathway



4. Research Plan



5. Key Stakeholders

- Federal and regional governments for ensuring carbon neutrality and energy security
- R&D institutes and industrial developers in the area of fuels for transportation and industrial processes
- Businesses involved in transportation, storage, distribution, and sale of liquid hydrocarbon fuels
- Users: airlines, public transport, commercial fleets, railways (diesel traction, shunting)