

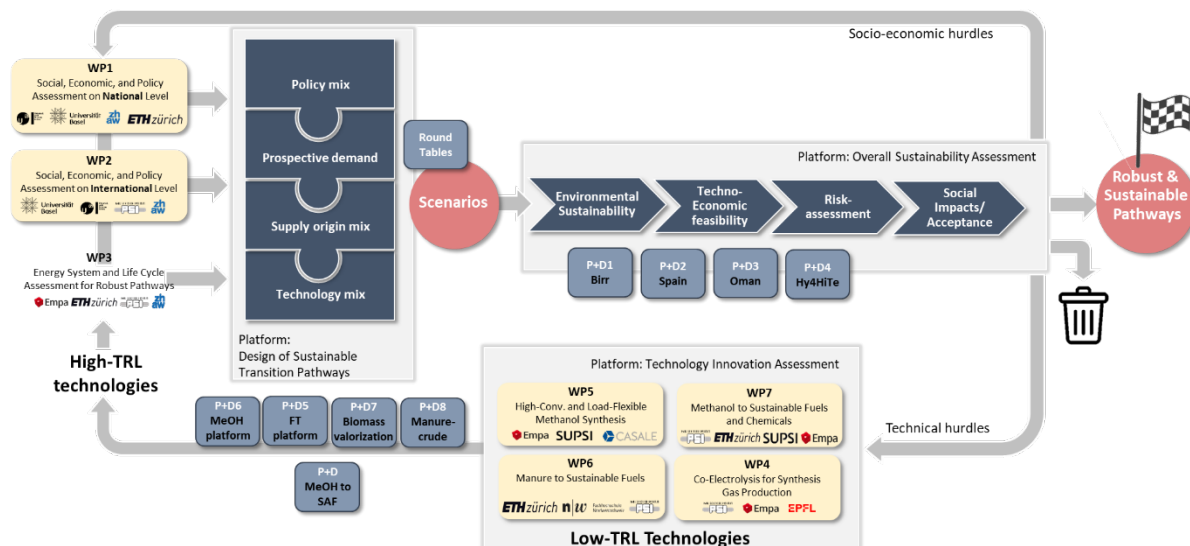
## SWEET-reFuel.ch - renewable Fuels and chemicals for Switzerland

The SFOE published a call for proposals<sup>1</sup> on sustainable fuel and chemicals for Switzerland under the SWEET funding framework. The focus is on fulfilling Switzerland's greenhouse gas (GHG) reduction goals given in the Energy Perspectives 2050+<sup>2</sup> in the transport and industry sector. The aim is to develop solutions along the whole value chain of sustainable fuels and platform chemicals through research and development of technologies, policies, and economic measures and to advance them towards implementation to guarantee a resilient supply.

The above-listed institutions formed the "reFuel.ch" consortium and were selected in July 2023 after a two-step application process. The activities of the reFuel.ch consortium comprise a multidisciplinary approach:

- The **social, legal, and economic implications of the transition to sustainable fuels and platform chemicals** are investigated based on **imports and domestic production** from captured or biogenic **CO<sub>2</sub>** and **renewable hydrogen**.
- **Life cycle assessment (LCA) and energy system design** allow for a resilient implementation of sustainable fuels and platform chemicals in **transportation and industry**.

This research approach aims at assessing the robustness and sustainability of possible pathways to design their integration into the Swiss energy market (see Figure).



The project includes one part considering High Technology Readiness Level (**High-TRL part**), where Policy and Market Readiness questions will be investigated with the target to improve the investment security for the production of sustainable fuels and platform chemicals as well as a **Low-TRL part**, where technologies such as the co-electrolysis and fuel synthesis technologies over the methanol route with a significant efficiency and market strategic potential will be further developed up to laboratory demonstrator level.

<sup>1</sup> <https://www.bfe.admin.ch/bfe/en/home/research-and-cleantech/funding-program-sweet/calls-for-proposals-overview/sweet-call-2-2022.html>

<sup>2</sup> <https://www.bfe.admin.ch/bfe/en/home/policy/energy-perspectives-2050-plus.html/>

A special focus of reFuels.ch is on solving the self-sufficiency challenge of Switzerland by exploiting the domestic manure potential of 25 PJ for fuel production and recovery of mineral nutrients. The activities cover:

- Investigation of **manure as a resource** with the above introduced multidisciplinary approach, especially considering **supply chain, social, and ecologic challenges**.
- Development of processes for transforming **manure into feed for hydrocarbon production** and **manure into bio-crude for fuel production**.

reFuels.ch builds on a solid palette of tools to determine the optimal integration into the Swiss energy system and the use of synthetic fuels and sustainable chemicals. Versatile expertise helps to develop and advance necessary technologies. Cooperation with industry in research and development as well as a strong advisory board will help to focus on relevant technologies, allowing for fast implementation. The call encourages the combination of the SWEET program with SFOE Pilot and Demonstration projects (P+D), as well as projects funded by the Federal Office of Civil Aviation (FOCA), both separately funded and there are currently 7 P&D planned as well as 2 FOCA financed projects.

*SWEET-reFuel.ch is a consortium sponsored by the Swiss Federal Office of Energy's SWEET programme and coordinated by Empa*