

CITru in a nutshell: Exploring CO₂ injection in the Swiss subsurface

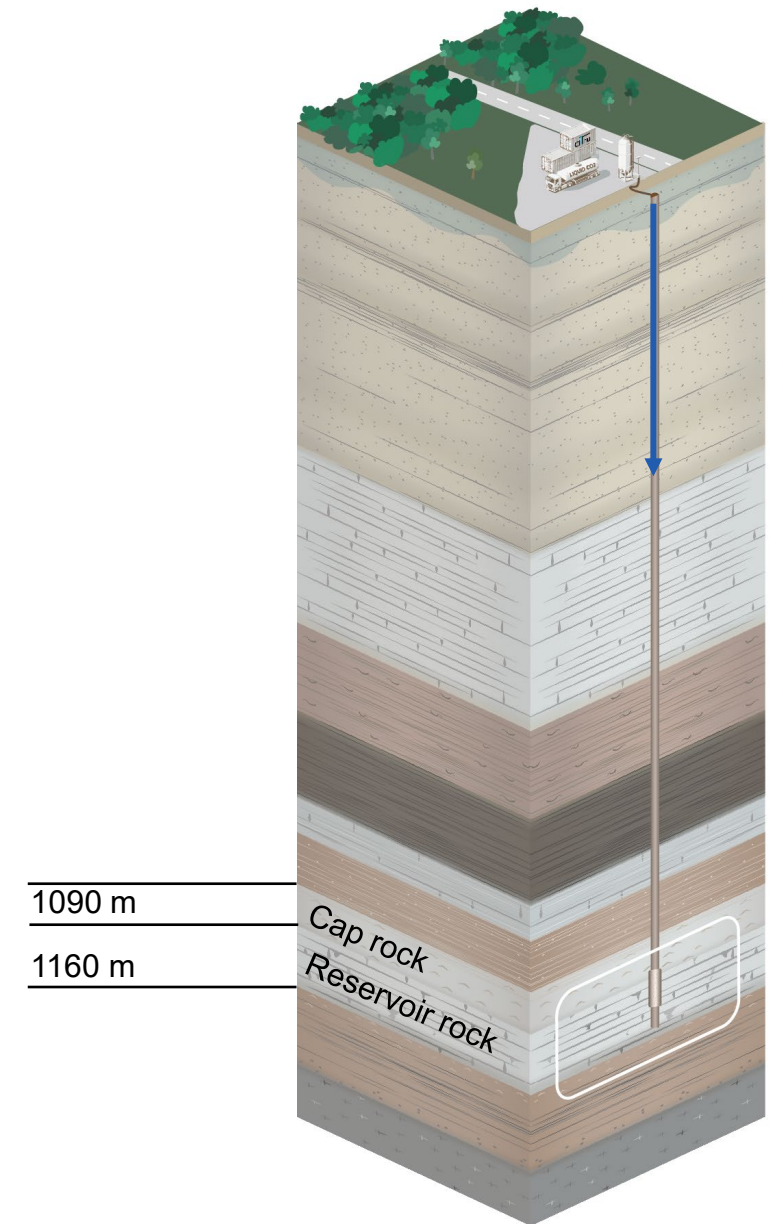
ETH Energy Week
November 10th, 2025

Viola Becattini for the CITru team
Swiss Seismological Service, ETH Zurich



CITru: The What

- A pilot initiative to:
plan and implement a
CO₂ injection test in a Swiss saline aquifer



CITru: The What

- A pilot initiative to:
plan and implement a CO₂ injection test in a Swiss saline aquifer using an existing deep well in the commune of **Trüllikon** (Zurich)

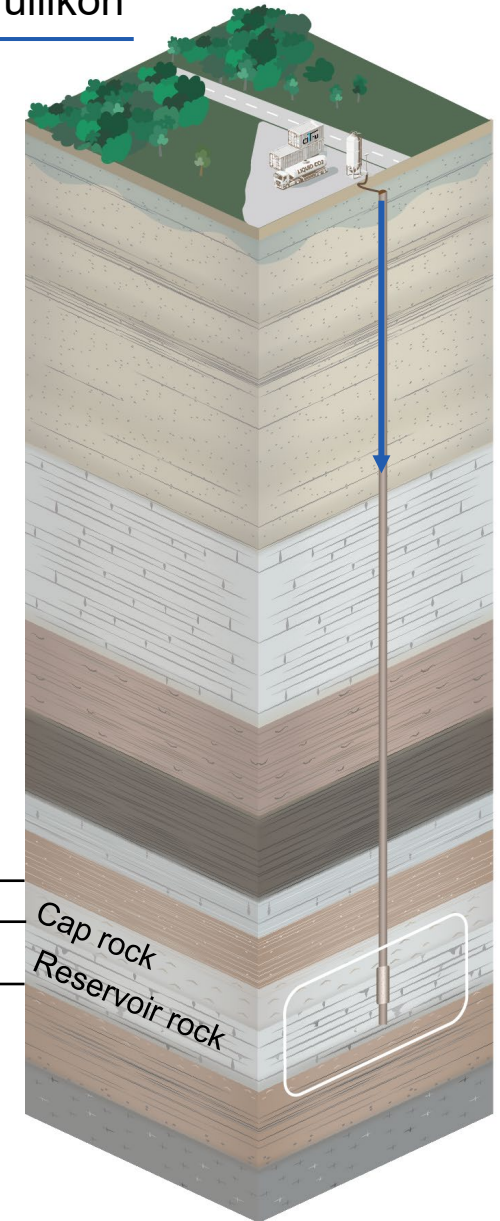


Trüllikon

1090 m

1160 m

Cap rock
Reservoir rock

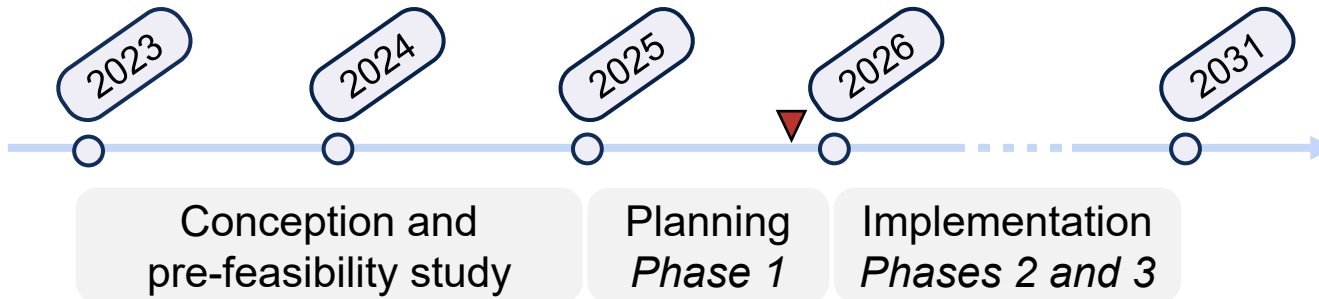
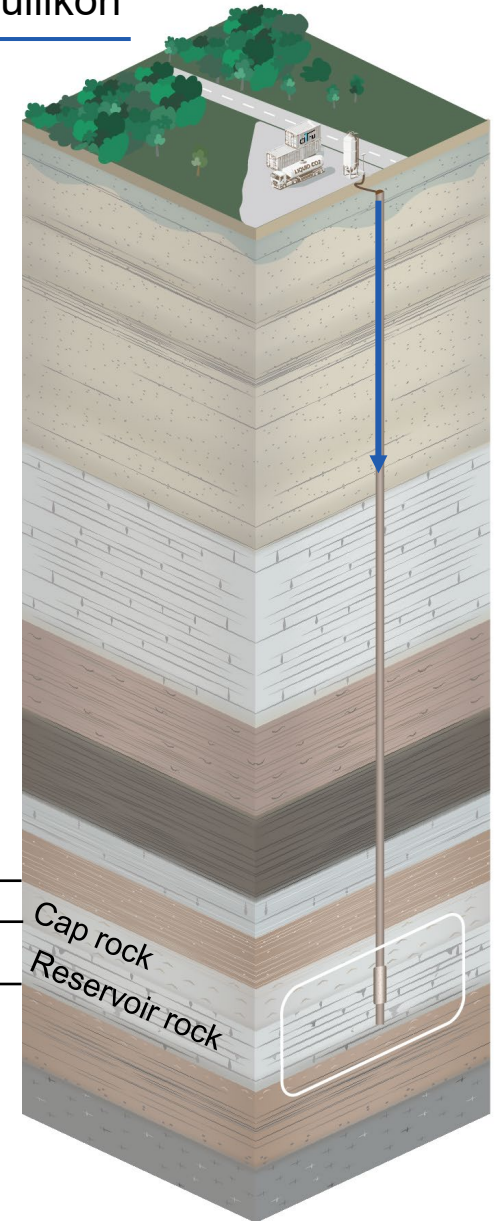


CITru: The What

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Trüllikon

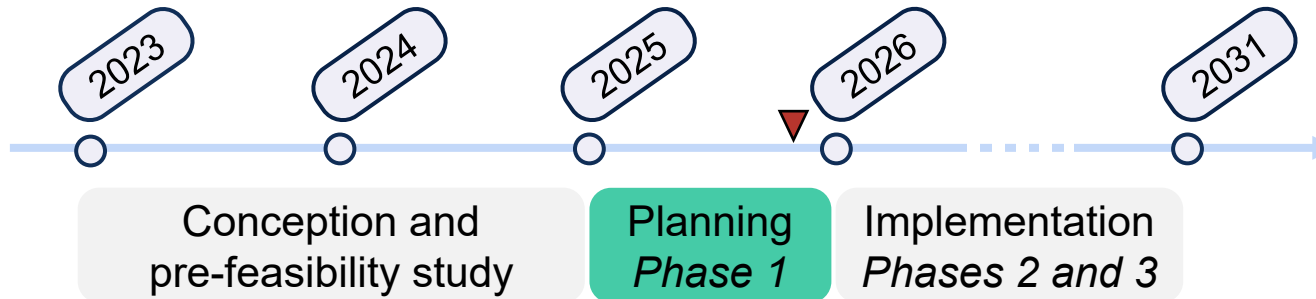
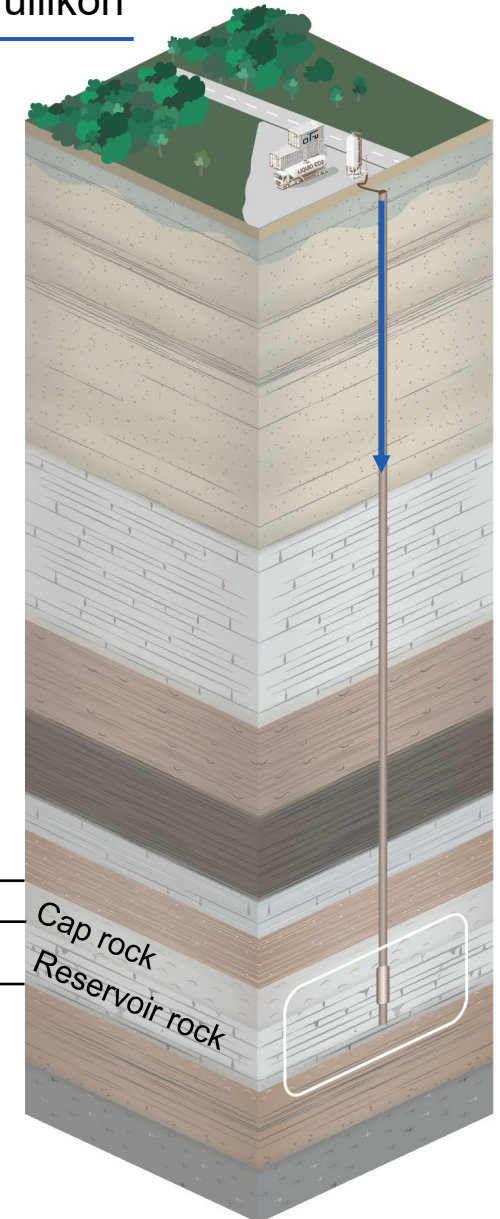


Diamond et al., 2025

CITru: The What

- A pilot initiative to:
 - plan and implement a **CO₂ injection test** in a Swiss saline aquifer using an existing deep well in the commune of **Trüllikon** (Zurich)

Trüllikon



Budget 2.1 MCHF

1090 m
1160 m

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Office of Topography swisstopo

CITru: The Why

- To develop **competencies** and create a **blueprint** for future CO₂ injection and storage pilots, directly supporting the Swiss CO₂ storage development strategy

Geological and reservoir properties

- Subsurface structure and properties
- Permeability and injectivity at the selected site
- Reservoir response to CO₂ injection
- Predictive modelling of CO₂ behavior

Technical, operational, and safety aspects

- Subsurface and surface equipment & process and injection design
- Risks and mitigation strategies
- Measurement, monitoring and verifications technologies
- Expected costs

Permitting requirements

- Steps in the permitting procedures
- Requirements and expectations from authorities
- Obtain permit for implementation

Communication and public perception

- Open-ended dialogue with society
- Local community involvement
- Build transparency and trust
- Perception by the public

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Joahannes's
and
Larryn's
talks

Geological and reservoir properties

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Edoardo's
talk

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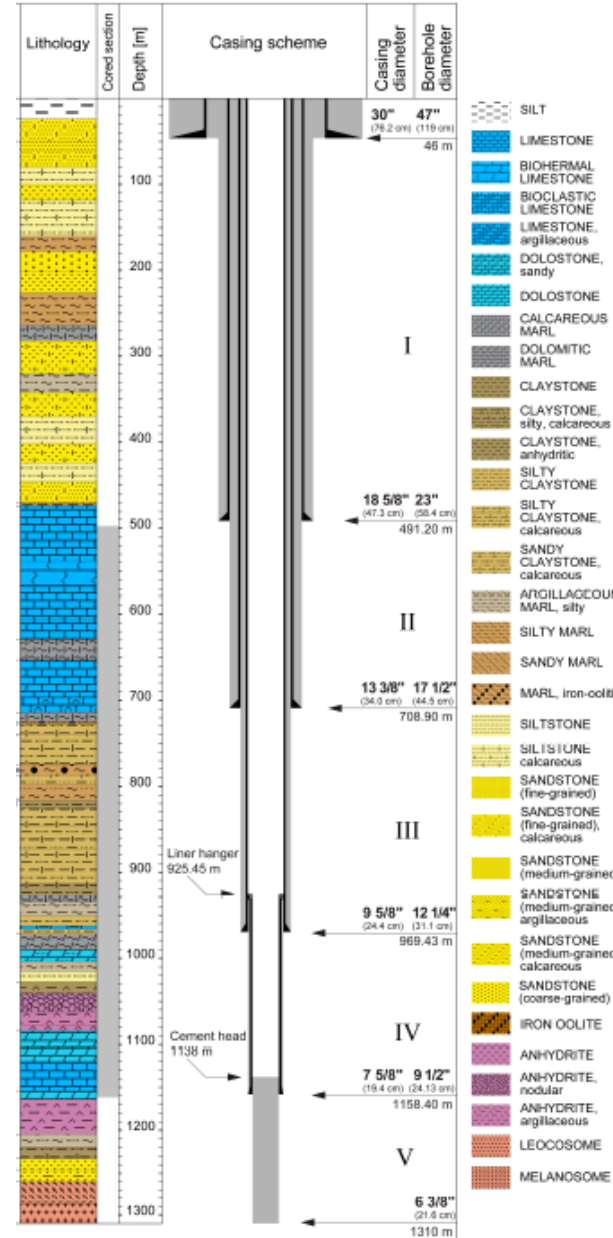
Michele's
talk

CITru: The Where

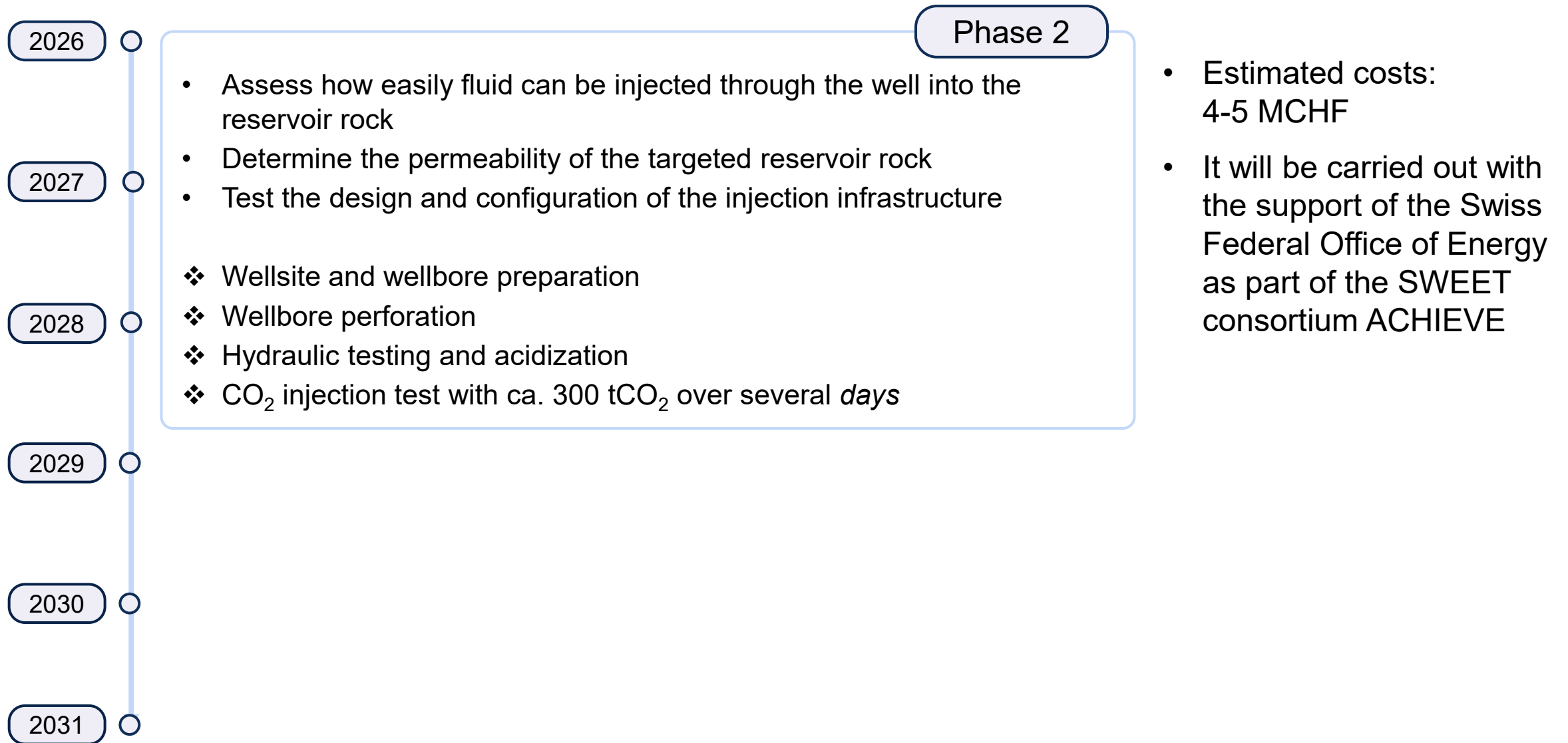
Trüllikon-1-1 (TRU1-1) exploratory borehole:

- an unused Nagra (National Cooperative for the Disposal of Radioactive Waste) borehole in good condition and deemed suitable for CO₂ injection
 - access to a suitable reservoir + cap rock
 - technically and geo-scientifically very well documented
 - verified to injection pressure
- Good understanding of local geology
 - Positive reception from the municipality and the canton
 - Financial advantage of ca. 15–20 MCHF
 - Timeline acceleration of 3–5 years compared to selecting a new location

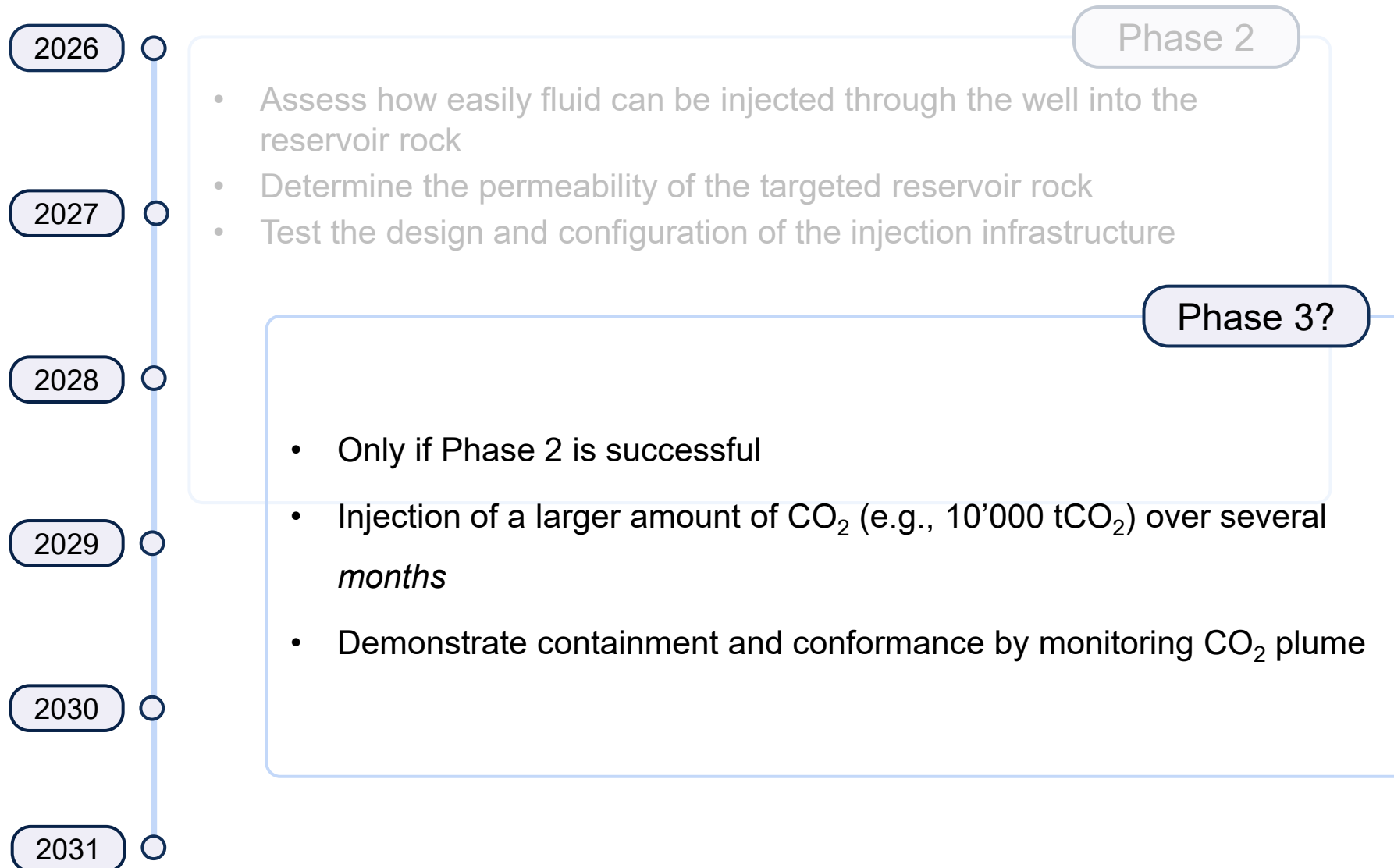
<https://nagra.ch/wissensforum/tiefbohrung-truellikon-1/>



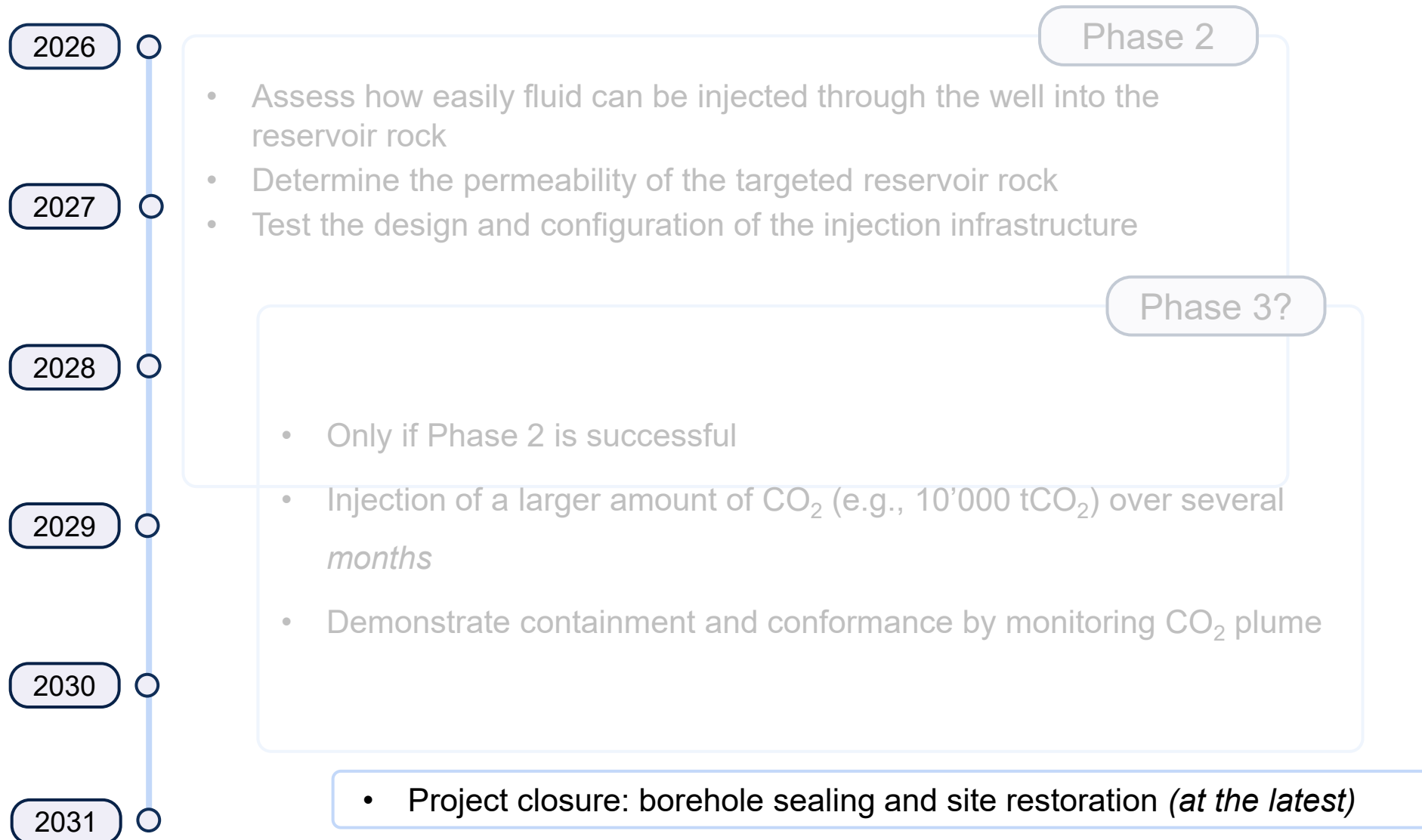
CITru: The How – Implementation phases



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CITru: The How – Implementation phases



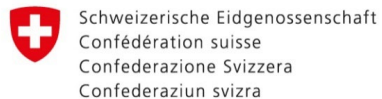
Acknowledgments and funding

Our project sponsors:

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- ◇ ETH Foundation
- ◇ Stadt Zürich
- ◇ Canton of Zürich
- ◇ Verband der Betreiber Schweizerischer Abfallverwertungsanlagen (VBSA)
- ◇ Energie 360°
- ◇ Neustark
- ◇ Swisscom

• Advisory Board members:

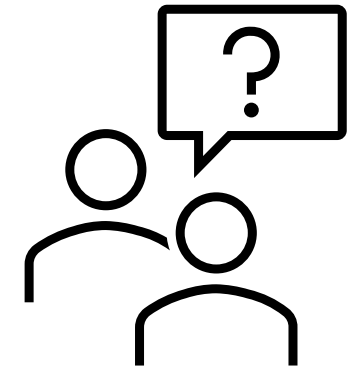
- Michelle Bentham
- Cyril Brunner
- Sallie Greenberg
- Alv-Arne Grimstad
- Marco Herwegh
- Michael Kühn
- Marco Mazzotti



Swiss Federal Office of Energy SFOE

Federal Office for the Environment FOEN

Federal Office of Topography swisstopo



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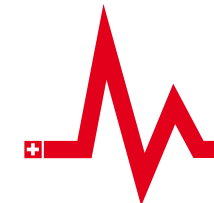
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Schweizerischer Erdbebendienst
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Servizio Sismico Svizzero
Swiss Seismological Service