



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Bundesamt für Energie BFE  
Office fédéral de l'énergie OFEN  
Ufficio federale dell'energia UFE  
Swiss Federal Office of Energy SFOE



© shutterstock 101979313

# ATES IN SWITZERLAND IN 2023



# LT-ATES SWATCH BIEL

Large industrial complex 12 wells. Target depth ca. 30 m.

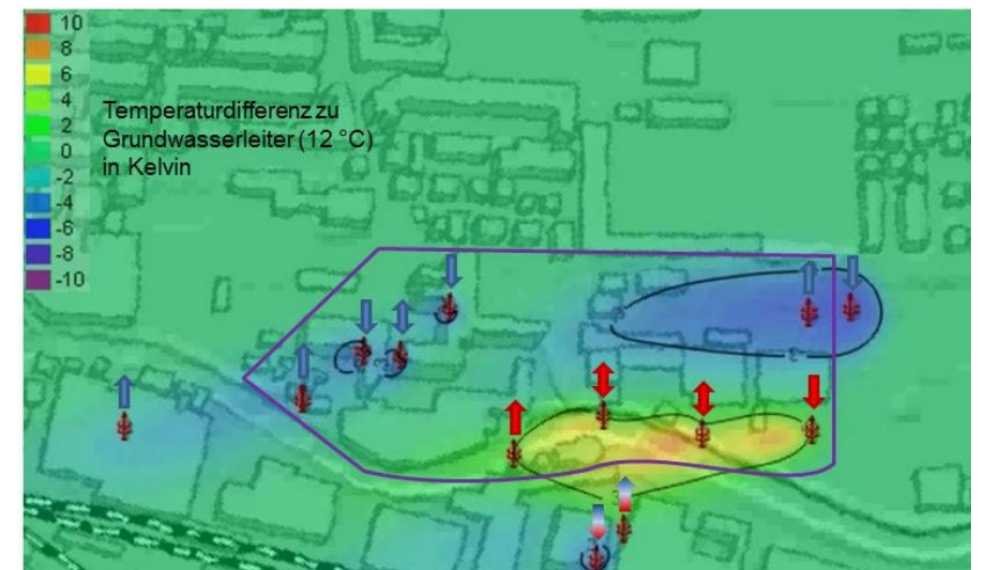
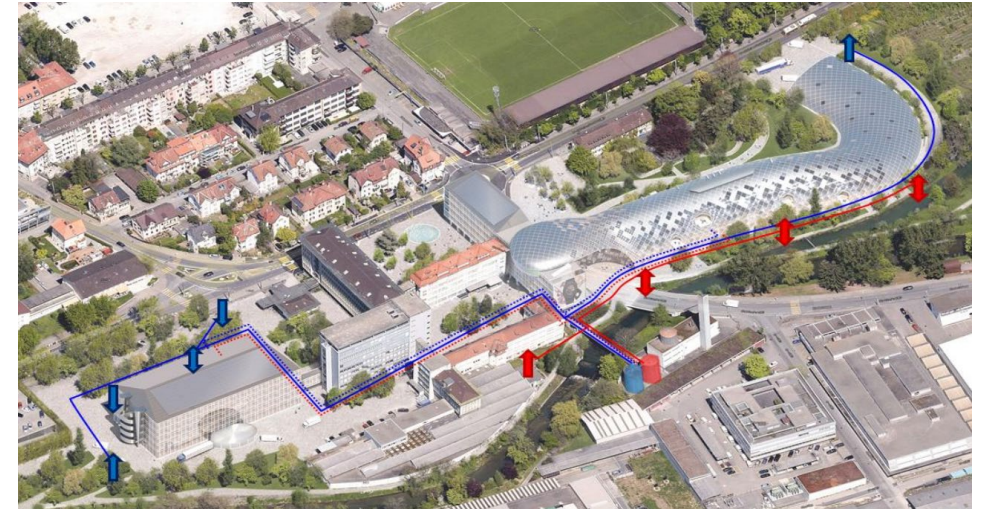
Cooling and heating needs covered by elaborate injection and production scheme of aquifer.

Natural groundwater flow incorporated into concept.

In operation since 2019.

Energetic efficiency & economic viability exceed expectations

No request for support funding





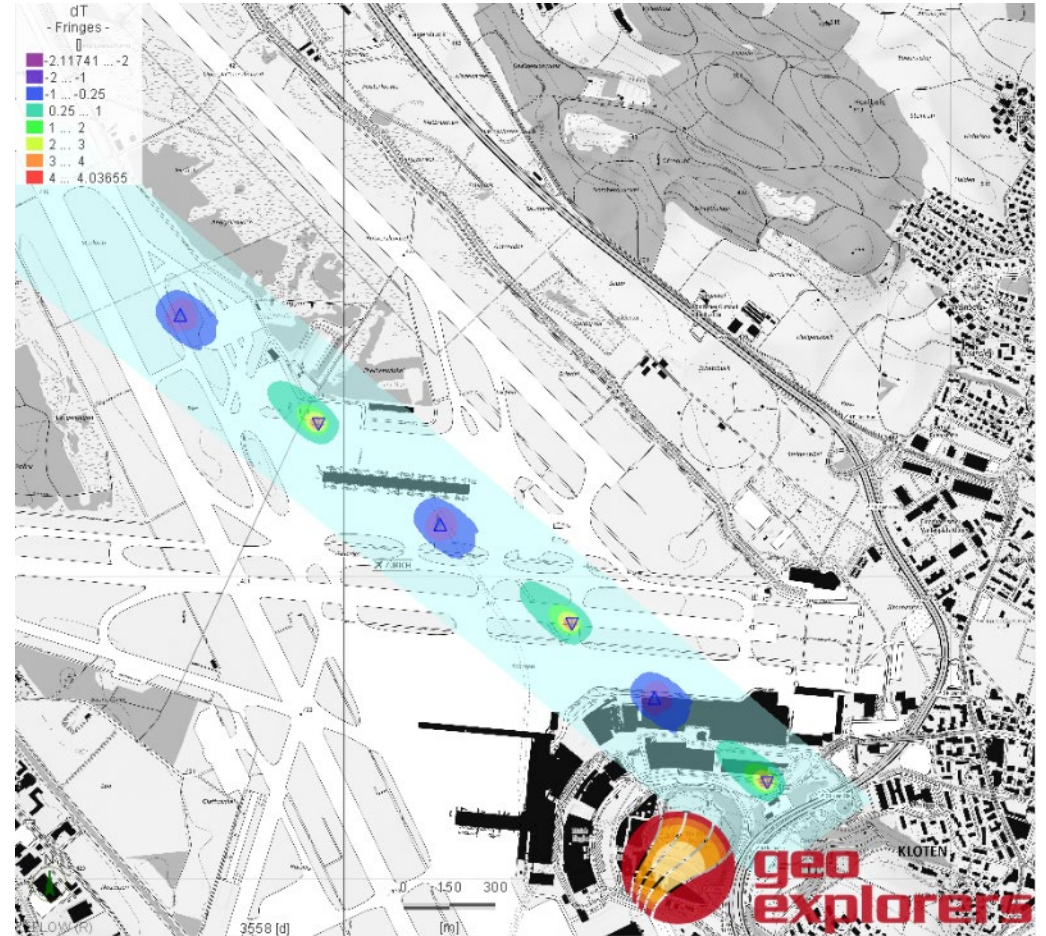
# LT-ATES AIRPORT OF ZÜRICH

Important ATES project. Excess heat of the airport is stored underground and reused in winter. Target depth ca. 300 m.

Prospection in progress, first boreholes being drilled.

Insights Important in the ongoing political discussion on the narrow regulatory boundary conditions for ATES.

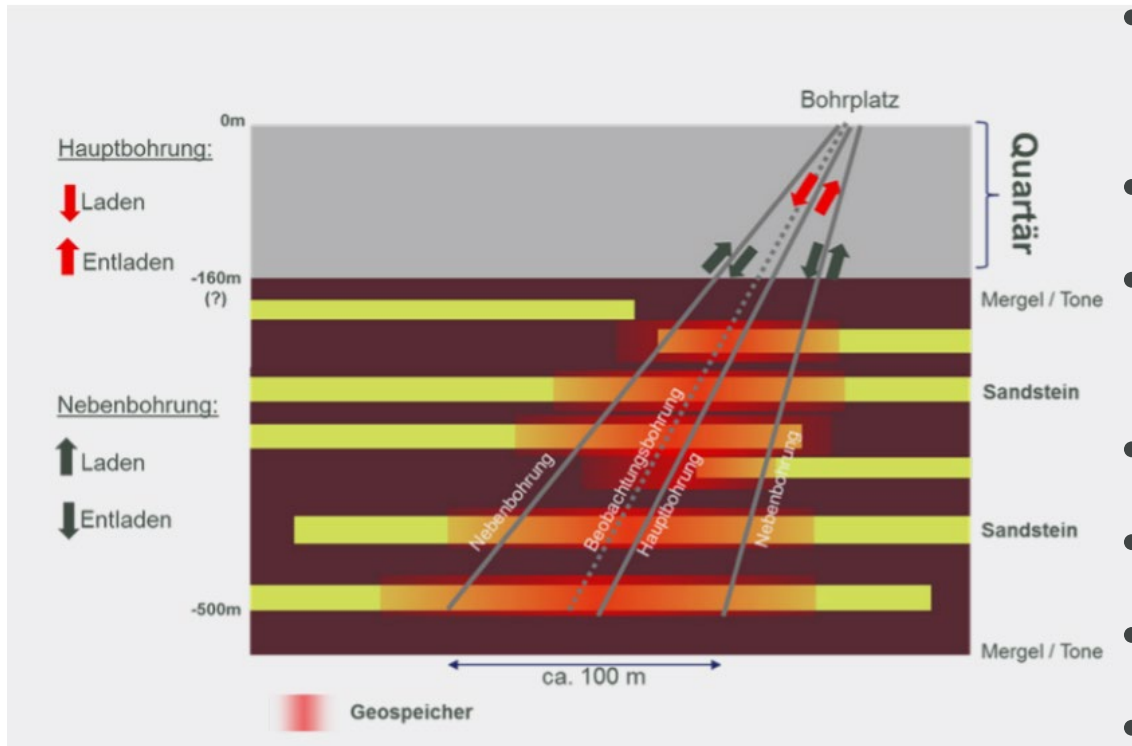
Supported by SFOE through P&D Research Programme







# HT-ATES IN BERN



- Seasonal storage of summer surplus heat of waste incinerator
- District heating system
- Loading temperature ca. 60°C (after power production)
- Injection in 200 – 500 m depth
- Capacity 3-12 MW
- Drilling ongoing
- Supported by SFOE through prospection subsidy and P&D Research Programme



# LOOKING BACK

---

Heat Storage was never really a topic

- HT: gas for peak shaving too cheap
- LT: electricity for HP too cheap

ATES only considered by big actors, capable of ignore the economic realities

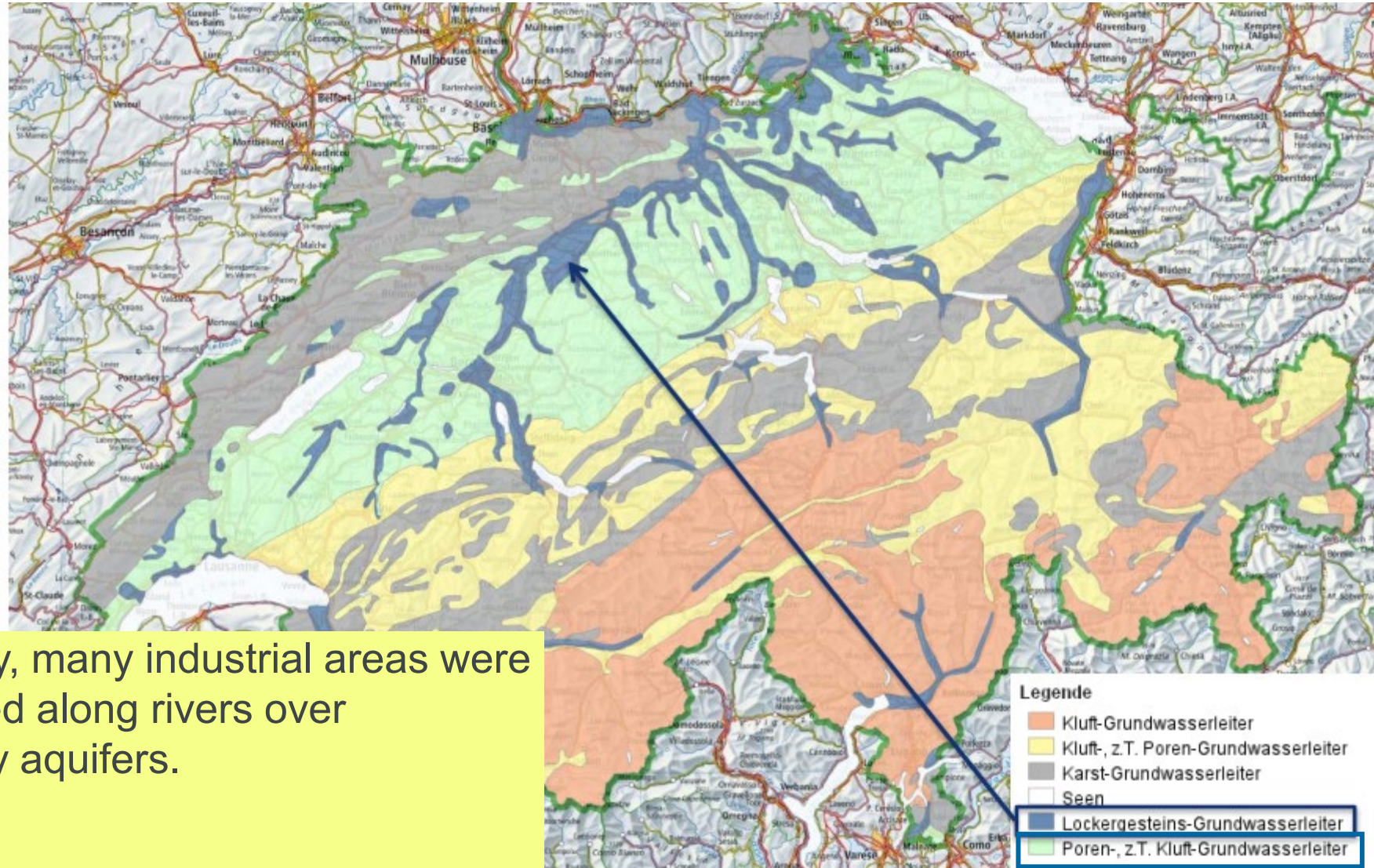
/ commercial until 2 doomriders appeared:

«WINTERSTROMLÜCKE» (winter electricity gap)

UKRAINE WAR



# GEOLOGICAL ATES POTENTIAL IN CH



Historically, many industrial areas were developed along rivers over quaternary aquifers.



# BARRIERS

---

- **Geological risk for HT-ATES:**
  - Hydrogeological properties
  - Geochemical properties
- **Regulation:** *Max 3°C delta T of groundwater, measured at 100 m distance from injection point*
  - Compliance difficult to prove
  - Narrow operational limits reduce economy
- **Uncertain future policy development / no strategy**
  - Financial support for fossil fueled co-generation power units?



# ONGOING RELEVANT MEASURES

---

Parliamentary motion demanding **national exploration campaign**

- Potentially reduces geological risks
- Financing mechanism not trivial

Parliamentary motion demanding **revision of groundwater protection act**

- Fed Gov to exclude aquifers not suitable for drinking water utilisation from 3°C rule
- Regulatory certainty for ATES and deep geothermal projects
- Also looking into adequacy of 3°C rule for shallow drinking water aquifers (>LT ATES)

**Call for projects** for decarbonisation of industrial heat supply ([link](#))

- Heat Storage explicitly mentioned
- Potentially interesting for LT-ATES





# WHAT ARE WE LOOKING FOR?

---

## General

- Structured international dialog instead of numerous bilateral ad-hoc discussions
- International exchange platform for operational and regulatory experience (good practice) and access to technical competences / services

## Specific

- How to adequately change 3°C rule to optimise energetic efficiency of ATES?
- Adequate support measures? (Guarantee vs subsidy vs none)



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Bundesamt für Energie BFE  
Office fédéral de l'énergie OFEN  
Ufficio federale dell'energia UFE  
Swiss Federal Office of Energy SFOE

# THANK YOU FOR YOUR ATTENTION



Questions now or later  
[christian.minnig@bfe.admin.ch](mailto:christian.minnig@bfe.admin.ch)