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Disposal of Spent Fuel – The Swiss Case

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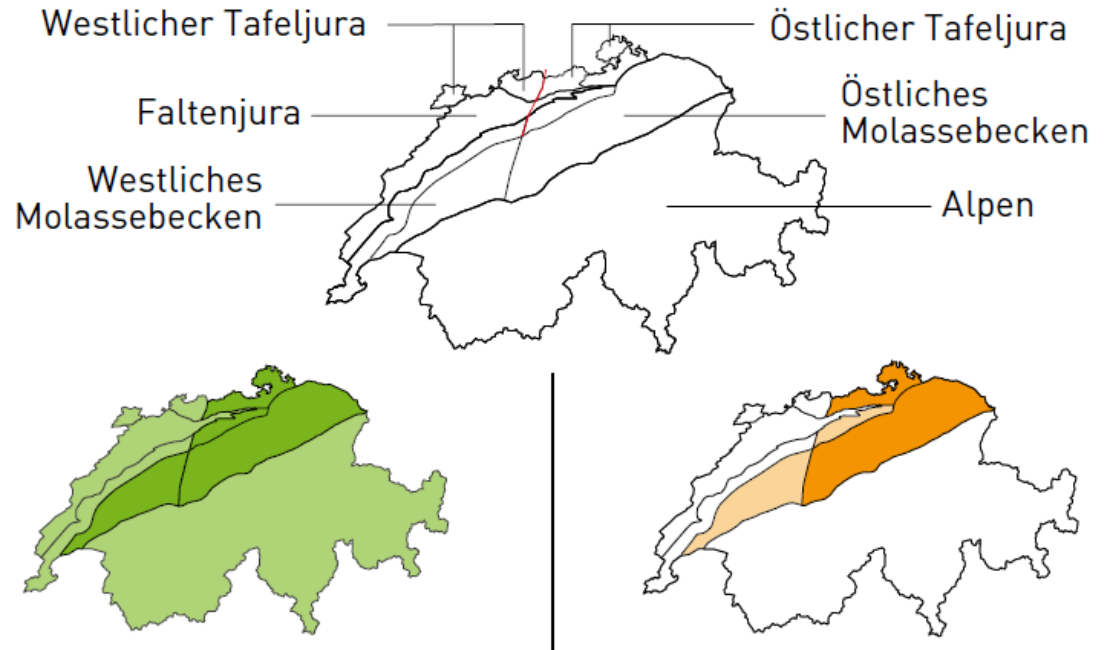




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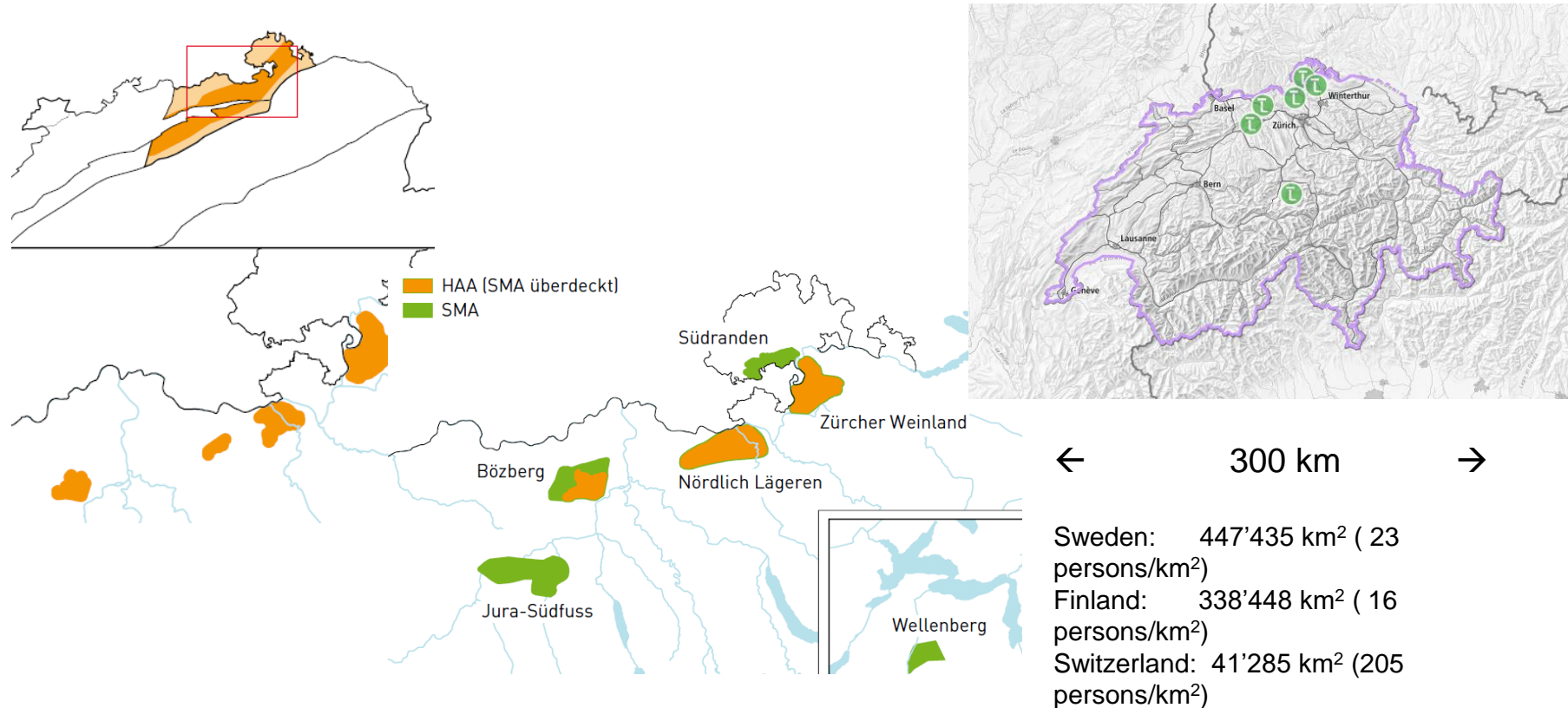
General approach

- Safety-first approach in siting process considering all of Switzerland
- Pre-defined safety criteria for siting process
- 3 stages to find site





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Technical issues

- Host Rock formation: Clay-rich formation («Opalinus-Clay»)
- Excellent retention capability for radionuclides
- Self-sealing (Fractures, etc.)

But:

- Very low permeability for gas-transport (Corrosion of steel container, metals in waste)
- Construction feasibility (ramp/shaft?)
- Impact of Erosion (future glaciation)





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Technical issues

- Investigations at the selected sites during SGT Stage 3
- Geosphere characterisation
- Long-term evolution of the selected sites
- Geo-mechanical conditions
- Gas transport
- Integrity of spent fuel and cladding during interim storage, transport and handling
- Optimisation of spent fuel loading in final disposal canisters
- Development of generic design concepts and operating schemes (including the pilot facility and potential retrieval of wastes)
- Tunnel construction concepts and materials technology for the support of SF/HLW emplacement drifts

Technical Report 16-02

The Nagra Research, Development
and Demonstration (RD&D) Plan
for the Disposal of Radioactive
Waste in Switzerland

December 2016

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for the Disposal of
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Other issues (Political, General Public)

- Siting regions close to Swiss/German border
- Transport of radioactive waste to siting regions
- Facility for packing/welding of disposal containers
- Nation wide referendum on decision in principle (2030)



Thank you for your attention!



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