Karlsruher Institut für Technologie

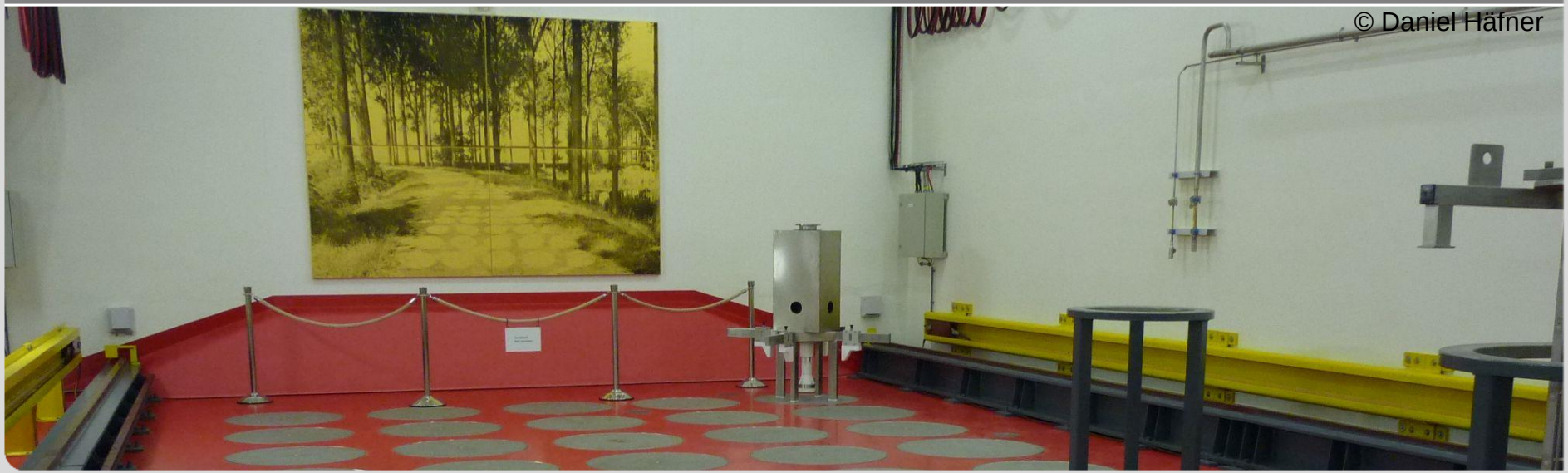
ITAS Institut für Technikfolgenabschätzung und Systemanalyse

Using transdisciplinary research for the German site selection process for HRW

Challenges and opportunities

Dr. Peter Hocke, Lisa Nabitz, Dr. Dirk Scheer, 26. August 2020

Institut für Technikfolgenabschätzung und Systemanalyse (ITAS)



Overview

1. Introduction
2. Safety in RWM and social innovation
3. The TRANSENS approach and HAFF as an example
4. Path dependency, standards of self-reflexivity and scientific embeddedness
5. Conclusion: Exit or Voice?

PH / 28.8., Using-TD-RESEARCHv4 Public.docx

1. Introduction – Hope & not dystopia

- There is no linear process – neither for progress nor for catastrophe.
- What we watch in nuclear history is comparable with a zigzag course of a convoy, which plans to bring its awareness campaign to the future.
- Which future? success in the sector of energy transition and wide support for sustainable development goals.
- Case of Radwaste Management (RWM) is no case of missed technological innovation. → social innovation
- Again and again elites are forced to act.

2. Safety in RWM and social innovation: GER

- Context: restart of the site selection procedure within Germany with an ambitious sociotechnical project.
- Technological ambitious as reversibility and the option of retrievability are integrated.
  Social ambitious as the target is a relative best site should be selected for HRW.
- Selection procedure characterized by challenging: self-reflective system, public participation with formal and informal elements, integrating interdisciplinary and transdisciplinary research.
- Area of tension: open stepwise approach with the paradigm “safety first”.

Hocke et al. 2020: Using transdisciplinary research, Raitenhaslach Aug. 2020

2-2 Canisters in central and decentral interim storage facilities

Source: Mathias Brandt , heise online v. 17.06.20, Technology Review

3. The TRANSENS approach and HAFF* as an example (1/2)

- TRANSENS (Transdisciplinary research on the disposal of high-level radioactive waste in Germany)
- Transdisciplinary (TD) research is based on interdisciplinary research
- The substantial statement is the systematic use of co-design and co-production
- 4 thematic tunnels: safety case, trust, dialogue & justice, reversible process

* HAFF = DE: “Handlungsfähigkeit und Flexibilität in einem reversiblen Verfahren” bei Standortauswahl und Betrieb; EN: „capacity for action and flexibilty in a reversible process“ in the phases of site selection and operation

3. The TRANSENS approach and HAFF* as an example (2/2)

- **General aim for TD research within TRANSENS:** to contribute to social learning, legitimity, social evaluation and perhaps social robustness within a trade-off field.
- **Sub-module HAFF* in TRANSENS**
  - Ability to act in a constructive way and flexibility in a reversible process

  → **Main analytical questions:**

  → Under which conditions an open and stepwise process has a chance to structure robust governance?

  → How could central “stopping points” in the process be defined and established that require reflection on the navigation and possibly even a change of direction?

* HAFF = DE: “Handlungsfähigkeit im Standortauswahlverfahren und Betriebsphase“; EN: capacity for action in the nuclear waste repository location selection process and operating phase

4. Path dependency, standards of self-reflexivity and scientific embeddedness

- Sorting of actors within TD: specialist of RWM vs. others (actors in practice, lay people, civil society).
- Integration in defining the research question (co-design) and the aim to develop scientific results in cooperative way (co-production).
- New Governance and New Public Management: Challenging authorities, experts and civil society to break old patterns of path dependency, introducing self-reflexivity and thinking in alternatives.
- Navigation under conditions of incertitude
  ← enormous challenge for scientists and experts to develop knowledge and orientation.

Quelle: Chris Iseli , Aargauer Zeitung v. 28.4.17

- Conflicts, debate and protest can be expected, if the siting process becomes concrete
- There are only weak hints that civil society is interested to become part of the solution of the wicked problem (Hocke / Brunnengräber 2019)

5. Conclusion: Exit or Voice?

- GER as a divided society in central political and societal questions.
- Challenges for independent basic research on one hand and sociotechnical R&D.
- After some years with consensual attempt: Board for the Disposal of HAW (2014-16) + new law (since 2017).
- On-going of a partial revitalized conflict. Under debate: the whole widespread infrastructure with interim storage and repacking or “only” the facility for deep underground storage (in operation 2050 or later).
- End of Sept 2020 publication of the potential wider territories within GER expected as suitable.

Thank you for your attention!

hocke@kit.edu

Gefördert im Niedersächsischen Vorab der Volkswagenstiftung

VolkswagenStiftung

Niedersächsisches Ministerium für Wissenschaft und Kultur

Gefördert durch:

Bundesministerium für Wirtschaft und Energie

aufgrund eines Beschlusses des Deutschen Bundestages

Förderkennzeichen 02E11849E

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