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*Supplement of*

## **Thinking in alternatives and reflecting possible futures in German nuclear waste management: insights from technology assessment**

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# Thinking in Alternatives and Reflecting Possible Futures in German RWM

## Insights from Technology Assessment

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# 1 Thinking in Alternatives – Only Theory?

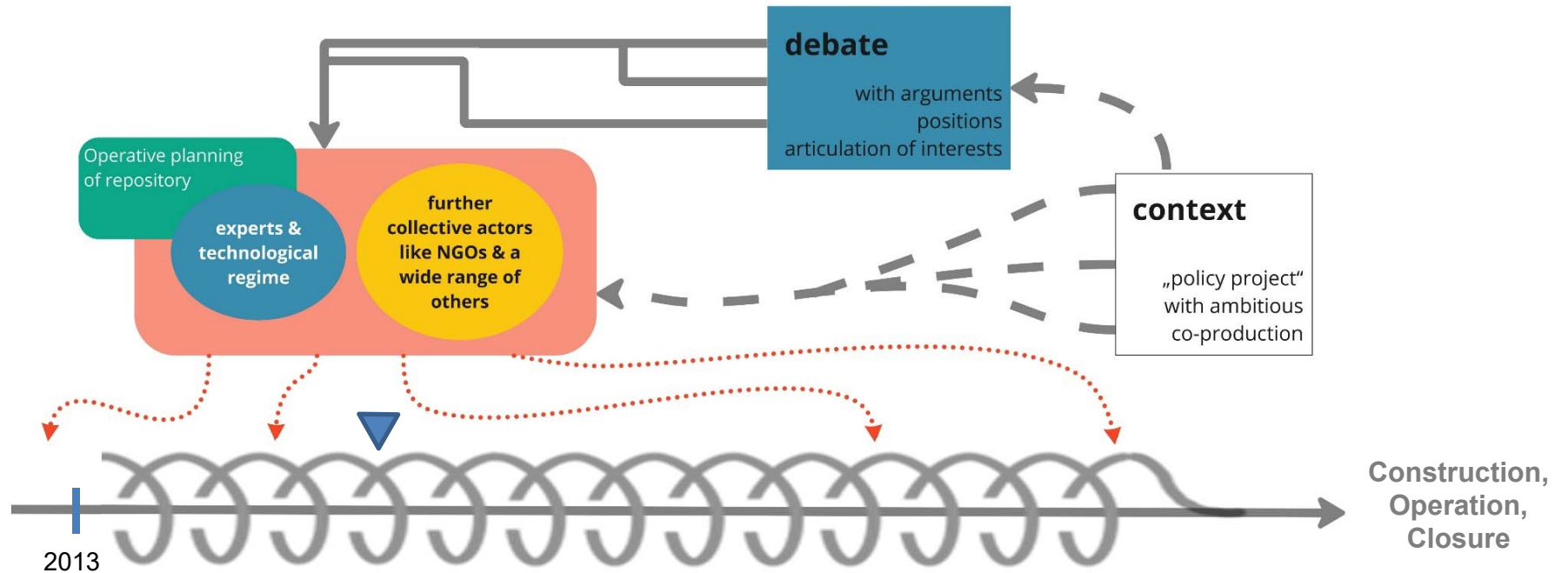
- Repository for high level waste is a major socio-technical challenge in Germany - start of search in the 1970s, closure expected not before 2100.
- ‚Thinking in Alternatives‘ framed by ITAS as a topic of „governance“ accepting the current stepwise approach characterized by law & EndKo.
- Linear conceptual thinking is a form of self-limitation, thinking in alternatives as a form of preparedness. (Grunwald 2022:42)
- How do we as experts reflect?
- Relevance of the social process.
- How do actors talk about it?



Foto aus den 1990er Jahren  
(Quelle: M. Meyborg, kontext:wochenzeitung Nr. 496 v. 30.9.2020)

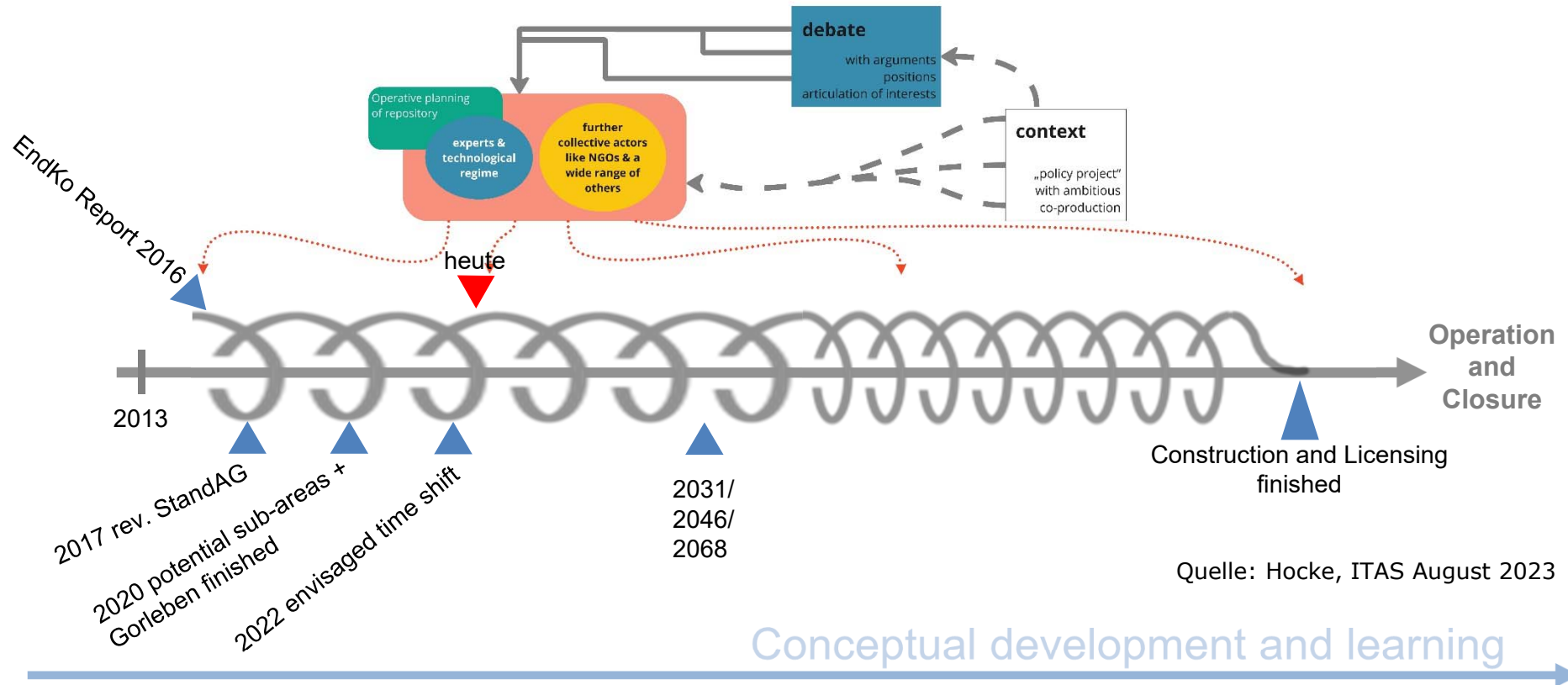
## 2 Widened Understanding of the Process

- “Knowledge about possible futures” is important for consultation and orientation of political decision-making processes - esp. “orientational knowledge” (see Lösch et al. 2021)
- Imaginaries and narratives are very influential as they steer the framing of problems in the public debate (see Brohmann et al. 2021, pp46-58, Smeddinck / Rossmann 2022).
- One assumption, one result:
  - TA focusses on assessment of sociotechnical processes: context matters.
  - TRANSENS-HAFF-results: future as an open space that can be shaped in a particular way (one important explaining variable: bridging the social process between interest articulation and aggregation).



Quelle: Hocke, ITAS August 2023

### 3-2 / Infrastructures as a case of collective learning



Quelle: Hocke, ITAS August 2023

## 4 Results from HAFF: Learning by Heuristics

- HAFF means „Capability to act and flexibility in a reversible site selection process“ beside path dependencies.
- Status-quo and legalistic pathway of decision-making (Scheer et al. 2023)
- Results from narrative research /only one example of several, which can block the positive future: The German phase-out is a result of the Fukushima disaster, and also the new StandAG  
← ambivalent interpretations possible.

## 4-2 Heuristics by narratives

### NARRATIVE

- StandAG was (1) a well-reflected decision or (2) a not-well reflected political one as only influenced by the event Fukushima and the not-knowledge based phase-out.
- Alternatives: “orientational knowledge” for a roll back as the first ...  
... or for supporting the German StandAG with its qualitative standards as the second as an alternative ‘story’ told by the narrative.
- → The context matters!



## 4-3 Heuristics of „Imaginaries“

### IMAGINARY

Safety-first is not the only strategic concept, political sociology underlines the necessity of deliberative competence within the processes (← political parties and RWM policy)

→ accepting the normality of social processes, which means social struggle about narratives and images under the current condition: Western “democracies under pressure”.

→ Critics of the discursive strategy of parliament and system of political parties with low proactive interest.

→ on the time scale only slow progress in site selection: A new stalemate process for policy, only expert-based and science-based!

**Thank you!!!**  
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## Selected references

- Böschen, St. et al. (2021a): Technikfolgenabschätzung - neue Zeiten, neue Aufgaben. 2021a. In: ders., A. Grunwald, B.-J.; Rösch, Chr. (eds.): Technikfolgenabschätzung. Handbuch für Wissenschaft und Praxis. Baden-Baden: Nomos, S. 15-42.
- Brohmann, B. et al. (2021): Öffentlichkeitsbeteiligung bei der Endlagersuche: Herausforderungen eines generationenübergreifenden, selbsthinterfragenden und lernenden Verfahrens. Endbericht. Berlin: BASE – Forschungsberichte zur Sicherheit der nuklearen Entsorgung, Vol. BASE-004/21.
- Grunwald, A. (2019). Shaping the Present by Creating and Reflecting Futures. In: Lösch, A. et al. (eds) Socio-Technical Futures Shaping the Present. Technikzukünfte, Wissenschaft und Gesellschaft. Springer VS, Wiesbaden.
- Hocke, P.; Kuppler, S.; Enderle, St. (2021): Robuste Langzeit-Governance und Notwendigkeiten neuer Navigation. Zur Qualität soziotechnischer Gestaltungsprozesse. In: B. Brohmann et al. (Hg.): Robuste Langzeit-Governance bei der Endlagersuche. Bielefeld: transcript, S. 363-385.
- Lösch, A; Roßmann, M.; Schneider, Chr. (2021): Vision Assessment als sozio-epistemische Praxis. In: Technikfolgenabschätzung. S. Böschen et al. (Hg.), Nomos, S. 337-351.
- Scheer, D. / Becker, F. / Hassel, Th. / Hocke, P. et al. (2023 / i.E.): Trittsicherheit trotz Ungewissheiten? Strategien der Ungewissheitsbewältigung bei nuklearen Entsorgungspfaden. In: A. Eckhardt et al., Entscheidungen in die weite Zukunft. Wiesbaden