Karlsruhe Institute of Technology

German Experiences with Public Involvement
Conflicts and Challenges during Siting Processes for Nuclear Waste Repositories

Dr. Peter Hocke

INSTITUTE FOR TECHNOLOGY ASSESSMENT AND SYSTEMS ANALYSIS (ITAS)

Overview

1. A Closer Look at the Topic of the Conference
2. Analytical Perspective, Data, and Methods
3. The German Case
4. Basic Observations
5. Conclusion

Presentation at the OEC/NEA-Conference „Public Involvement on Siting in Nuclear Facilities“, Paris
February 15+16th, 2011

(PH; Version 1.8 / 14-2-11 mm sk ph)

1. A Closer Look at the Topic of the Conference

- Who is involved in what?
- Scientific response to which type of problem: Is it not a technical, but a social problem? If yes, what does this mean?…
- State of the Art

- Who is involved where?

  German case

  Public involvement in siting processes for nuclear repositories

(Chap. 1 - 2) Scientific State of the Art

- Starting point: analysis of modern societies and their handling of large-scale technological projects in planning and implementation (conceptual). (If the technical problems are more or less solved, what about the massive social conflict arising from the problem? Traditional answer: strategies for increasing public acceptance, but also phenomena like NIMBY and NIMTOO.) (Greenberg et al. 2009)
- Optimistic interpretation of new governance approaches (Krütli et al. 2006).
- Research dynamics are very slow, some speeding up now in international journals (see issue 7+8 of Journal of Risk Research 2009).
- Discussions among experts on the European level (e.g. FSC of OECD-NEA) on similar issues (NEA 2004; NEA 2007).
- Specific tension between classical disciplinary discourse and discourse of the experts, but “deliberative turn” central part of discussion.

2. Data and Methods

- Own TA research (Hocke-Bergler/Gloede 2006; Hocke-Bergler 2003a)
- Reflecting results and attempts to start a multidisciplinary national dialogue of experts (Hocke/Grunwald 2009, 2nd edition as e-book; Hocke/Renn 2009).
- Political consultancy and involvement in the International Symposium of Nuclear Waste Management, Berlin, Oct. 2008 (Hocke/Arens 2010; Hocke/Barth et al. 2010), scientific moderation of a national dialogue forum with stakeholders (“Forum Endlager-Dialog”, frozen in Dec. 2010).
- Starting independent data-based research in comparative perspective (since Jan. 2010, comparison of two countries: Germany and Switzerland, special focus on effects of public involvement and deliberative approaches) (Kuppler et al. 2010).

3. The German Case (1)

- Focus in this presentation:

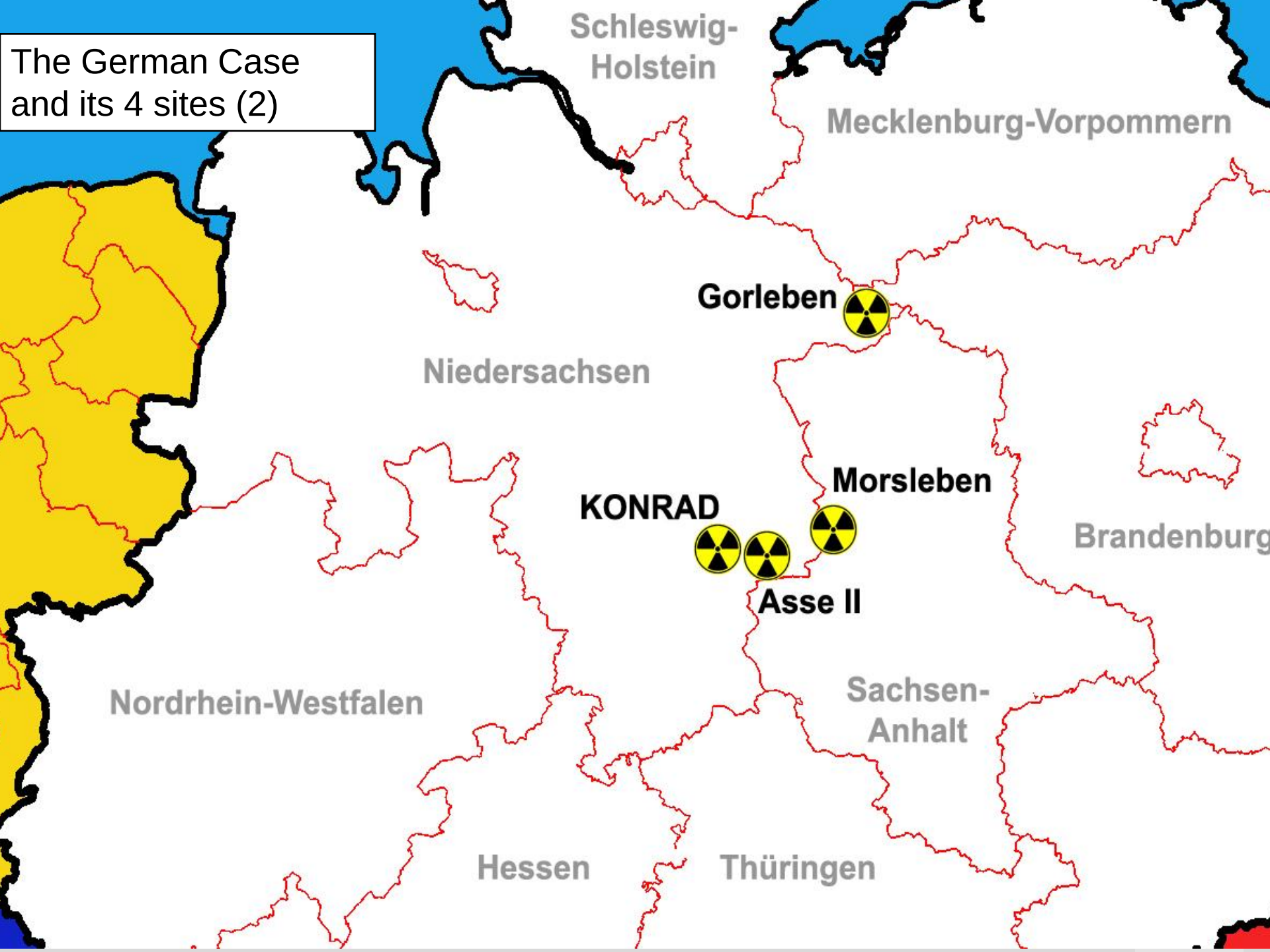
  Who is involved: ← the formally responsible actor Federal Ministry for the Environment, power industry, authorities, courts

  Who should be involved: the public

  Open question: ? civil society organizations,? NGOs.

Four disposal sites on German territory are being discussed:

- experimental disposal site ‘Asse 2’,
- the Morsleben repository,
- the Konrad mine and
- the site originally selected for a permanent high-level waste repository: Gorleben (as a hotspot of the social problem).


The German Case
and its 4 sites (2)
Schleswig-
Holstein
Mecklenburg-Vorpommern
Gorleben
Niedersachsen
Morsleben
KONRAD
Asse II
Brandenburg
Nordrhein-Westfalen
Sachsen-
Anhalt
Hessen
Thüringen

(Chap. 3 - 3) Final Repositories in Germany

Morsleben: former disposal of the GDR, currently being closed down after severe problems.

Schacht Konrad: disposal site for LAW&MAW, 2018/2019.

Asse 2:
research mine with uncontrolled ingress of water (12 m^3/day, increasing in some parts of the mine).

Gorleben: HAW, massive social conflict, preliminary safety analysis started.

(Chap. 3 - 4) Gorleben as a German Example (1)

- Planning procedures in general provide for public involvement.
- Late 1970s: context of planning in GER had two aspects: a.) concept of a “closed fuel cycle” in RWM, b.) salt as a preferred host rock.
- Focus was on the northern German lowlands and their border regions for siting the nuclear waste management center.
- Currently a highly controversial debate about the quality of decision-making process in site selection: Gorleben was the result, surface investigations with more importance than underground conditions, hope to centralize the waste and the protest (Hocke/Renn 2009: 923-5).
- Increasing social movement activities, accident in Harrisburg, etc.; need for conflict management and public dialogue (at the beginning of an ongoing cleavage between the state government and the federal government).
- A *first wave of interest in “public dialogue”* in the course of the ‘decide-announce-defend’ approach, followed by *smaller attempts* of reactivation; dissent of experts and political (party) conflicts, stable structures of campaigning over decades.

(Chap. 3 - 5) Gorleben Example (2)

Four Attempts

- Public dialogue on nuclear power (“Bürgerdialog Kernenergie”) in the 1970s/early 1980s; first steps in the region of the Gorleben site (“Gorleben-Kommision”): “implementation-oriented dialogue” of the social-liberal pro-nuclear federal government, ongoing “stop-and-go policy” up to 1998 (see Appel 2006; Roose 2010; Rütter+Partner 2005).
- AkEnd parallel to the moratorium for the underground exploration in Gorleben and the phase-out decision for nuclear power in Germany (Hocke-Bergler/ Gloede 2006): plural expert group with public consultation during its work on criteria for a site selection process and first ideas integrating regional & substantial public involvement (followed by an official non-decision by the red-green government).
- Final Storage Symposium Berlin 2008 (Hocke/Arens 2010) discussing the revision of the “safety requirements for heat-producing nuclear waste” under signals of interest in open dialogue from government side, installation of the national stakeholder-oriented group FED.
- FED and current “charming activities” of the Federal Ministry for the Environment for a regional participation at the Gorleben site.

4. From a “Closed Shop” Activity to Preparing Local Dialogue: Four Fundamental Observations

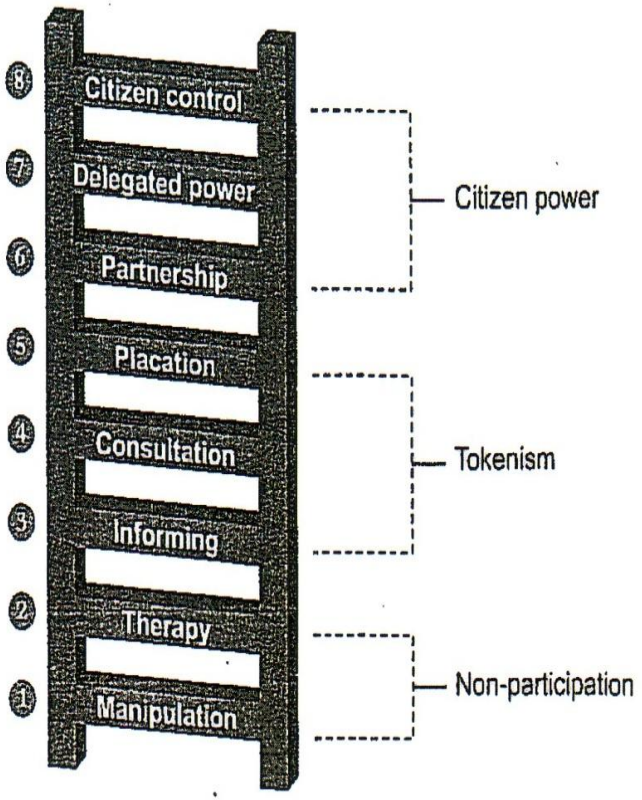
- **Observation 1**: stable anti-nuclear opposition (extra-parliamentary plus The Greens) misfits with the schedule of limited offers of public involvement (intra-institutional conflicts about the level of involvement, limited interest in transparency by experts and industry).

  (More openness for public discourse signaled in 2001/02 by pluralistic expert committee AkEnd, failure: no substantial political decision offering the proposed public involvement, 5 years of silence.)
- **Observation 2**: Robust key decisions in this limited sector of waste management *were blocked* by unwillingness to search for a political compromise in energy policy (“passive aggressive” power industry).
- **Observation 3**: A role for public involvement was promised, but it was also instrumentalized in party politics (mistrust against deliberation and against concepts for reorganizing the structures of power industry for more sustainability in line with societal expectations).
- **Observation 4**: Attempt to prepare a constructive interface for dialogue from 2008 to 2010 failed after decision to restart the underground investigation at Gorleben by the federal administration without substantial offers of discourse.

(Chap. 4 - 2) Observations (2)

- Official politics currently focuses on local participation and safety requirements in a limited sense (sectoral rational), esp. stakeholders (also sectoral rational) want more: results are not predictable. *(barriers for conflict management)*
- The basic decision (in this sense the “rational choice”) on Arnsteins ladder was not made by officials. This stabilizes the cleavage of expectations between industry, officials, interest groups, and civil society.

Figure 1: Arnstein's eight-rung ladder of citizen participation



Pescatore/Vari 2009, p. 1

Differing expectations on the level of public involvement and participation by stakeholders

→ concepts of representative democracy vs. concepts of deliberative democracy
(Lehtonen 2010; Kinsella 2004)
→ all political parties with unclear preference a. are thus unclear in their messages about the level of accepted citizen power
→ (pressure from public expectations, more referenda in Germany's multi-level governance)
→ (constantly mobilizing NGOs and advocatory interest groups)

(Chap. 4 - 4) The Challenge for Public Involvement

- Stimulated by the international discussion about “New Governance” concepts and the common opinion that civil solutions of conflicts are preferred by the interested public, three central elements are:

  1) strategic decision between *top-down approach* based on juridical decision and “policing” the protest on one hand or a *deliberative approach* on the other hand;
  2) optimizing procedures along a conceptual planning for siting final disposals within *dialogical structures*;
  3) installation of an *open procedure* with the aim to generate consensus on key decisions and responsibilities or a substantial agreement by deliberating the procedure *along a binding roadmap* for decision-making
  (see Switzerland with its restart using the „Sachplan“ concept in 2006).

5. Conclusion

- *Highly polarized national conflict* in the context of multi-level governance (effect: stabilized political dissent and concerns by experts).
- *Mixture of substantial attempts for increasing public involvement* in the cases of nuclear repositories *and symbolic politics* along the ongoing intensive struggle and mobilization along the cleavage on the civil use of nuclear energy (political dimension).
- Scientific perspective on the unsolved social problem behind: *scepticism* whether (local) public involvement is a solution adequate to late-modern societies (social dimension).
- *Debate about reforms* in nuclear waste management, but no deliberative system with strong public involvement installed in GER.

Thank you for your attention!

hocke@kit.edu

Barriers for Conflict Management

- List of barriers for conflict management in this sector in GER:

1. Instable acceptance of sectoral rationality, connected within the arguments of the stakeholders;
2. inflexibility in the political system to offer deliberative elements;
3. public cleavage about the necessity of more democracy in waste management.

6. Literature

Appel, D. (2006). Historical background of decision making for repository projects in Germany: The Gorleben case – Example for missing participation of stakeholders. In NEA 2006, 55–62.

Greenberg, M.R. (2009): NIMBY, CLAMP. And the Location of New Nuclear-Related Facilities: U.S. National and 11 Site-Specific Surveys. In: Risk Analysis 29/9 (2009), S. 1242-54

Hocke-Bergler, P. (2003a): Medienresonanz und das Handeln von Experten im Konflikt um die Endlagerung radioaktiver Abfälle "Technikfolgenabschätzung", Nr. 1, 12. Jahrgang - März 2003, S. 92-99

Hocke-Bergler / Gloede 2006: *Collective action of experts in a stalemate situation. Central results of evaluative research on the work of 'AkEnd' in Germany*. In: NEA (ed.): Disposal of radioactive waste: Forming a new approach in Germany. Paris: OECD (NEA No. 6117), pp. 91-96

Hocke, P. / Arens, G. (2010): Die Endlagerung hochradioaktiver Abfälle. Gesellschaftliche Erwartungen und Anforderungen an die Langzeitsicherheit, Tagungsdokumentation zum „Internationalen Endlagersymposium Berlin, 30/10 bis 1/11/2008". Karlsruhe / Berlin / Bonn (www.itas.fzk.de/v/endlagersymposium/Tagungsdokumentation_Symposium_final.pdf)

Hocke, P. / Barth., R. et al., 2010: Schlüsselentscheidungen und -maßnahmen für einen gehaltvollen Dialogprozess. Auftragsarbeit für das BMU zum Thema nukleare Entsorgung, Karlsruhe / Policy-Paper (published in TATuP 19/3 (2010), S. 91-97

Hocke, P. / Armin Grunwald (2009): Wohin mit dem radioaktiven Abfall? 2nd edition as an e-Book (edition sigma, published:26.02.2009)

Hocke, Peter and Renn, Ortwin (2009) 'Concerned public and the paralysis of decision-making: nuclear waste management policy in Germany', Journal of Risk Research, 12/7 (2009), pp.921 – 940

Krütli, P. / Stauffacher, M. / Flüeler, Th. / Scholz, (2006): Public Involvement in Repository Site Selection for Nuclear Waste: Towards a more Dynamic View in Decision-Making Processes. In: In: K. Andersson (ed.), VALDOR 2006 – VALues in Decisions On Risk. Stockholm. Congrex Sweden AB, Stockhol., pp. 96-105.

Kuppler, S.; Hocke, P.: Managing Nuclear Waste in Modern Societies - A Comparative Perspective. Presentation at EASST 010, Track 31 "Practicing public engagement in controversial science and technology." Trento, Italy, 02-04 Sep 2010

Lehtunen, M. (2010): Deliberative decision-making on radioactive waste management in Finland, France and the UK: Influence of mixed forms of deliberation in the macro discursive context in Journal of Integrative Environmental Sciences 7 (2010), pp. 175-196

NEA – Nuclear Energy Agency (2004): Stepwise Approach to Decision Making for Long-term Radioactive Waste Management. Experience, Issues and Guiding Principles, Paris (OECD NEA / Radioactive Waste Management: NEA 4429)

NEA – Nuclear Energy Agency (2007): Stakeholder Involvement in Decommissioning Nuclear Facilities. International Lessons Learnt, Paris (NEA No. 6320)

Pescatore, C. / Vari, A.: (2009) Partnering with Stakeholders in Radioactive Waste Management. In: NEA News 27.2 (2009), pp. 15-17

Roose, J. (2007/2010): Der endlose Streit um die Atomenergie. In: Umwelt- und Technikkonflikte, Feindt, P.H. / Saretzki, Th. (eds.), Wiesbaden: VS, pp. 70-103

Rütter+Partner, 2005: Nukleare Entsorgung in der Schweiz. Untersuchung der sozioökonomischen Auswirkungen von Entsorgungsanlagen., Vol. 2: Fallstudien, Rüschlikon, CH

Solomon, Barry D.; Andrén, Mats; Strandberg, Urban (*2010):* Three Decades of Social Science Research on High- Level Nuclear Waste: Achievements and Future Challenges, In: *Risk, Hazards & Crisis in Public Policy 1/4, pp 13-47*

ITAS as a scientific actor

- Institute for Technology Assessment and Systems Analysis (at Karlsruhe Institute of Technology), state-financed,
- Biggest German TA institution, around 105 members in the staff
- Science-based political consulation
- TAB, STOA as full members of the ETAG consortium
- Scientific journal TATuP
- Independent research (e.g. NanoHealth 2006-2009)
- approach: side-effects of Advanced Technologies
  multi-dsiciplianry research teams
  „problem-oriented“ research

7. Fact sheet nuclear waste in GER

•Germany as an early starter of producing nuclear energy

• traditional classification of nuclear waste: 3 classes, LAW, MAW and HAW, in GER „heat-developing“ and „no-heat-dev. waste“

•96 percent of radioactivity from heat developing nuclear waste in GER is generated by spent fuel (Stand 2007) (4% aus WA und Stilllegung)

• the German classic approach: development of a solid technological solution, social problems often framed as questions of „acceptance“; debate on the European level in this context is very prohressive (see NEA 2004, Conference Reims Dec. 2010 R+R).

• „stalemate situation“: massive social and political conflict (Hocke / Renn 2009)

- Sozialwissenschaften sind das Forschungsfeld zu diesen sozialen Zusammenhängen (Beiträge aus unterschiedlichen Disziplinen)

Abfall in den Sozialwissenschaften (R. Keller)

- Gegenwartsdiagnose: dynamischer Modernisierungsprozess; Bruch des klass. Fortschrittsparadigmas; „reflexive Modernisierung“ (Beck / Giddens et al.), die kein Strukturbruch ist, sondern als „Transformationsprozess“ zu verstehen ist. Wirtschaft und Politik verändern sich, aber auch Beziehungen des Individuums zu seinen „Institutionen“ (in Staat, Wirtschaft etc.).
- Moderne Gesellschaften produzieren in systematischer Weise Müll und Abfall (Keller 2008: 201), die Moderne als gewaltige „Mobilisierungs- und Innovationsmaschinerie“, die Trennung zwischen Abfällen und Wertstoffen ständig verschiebt. (wenig analytische Metapher, aber phänomenologisch plausibel)

Abfall in der TA

Gerade in systemanalytischer Perspektive eine „Hauptfolge“ von technikbasierter Entwicklung und Transformation, keine Nebenfolge;
Produktion großer ‚Berge‘ von materiellem, aber auch symbolischem und sozialem Müll (incl. am Menschen festmachbares Nicht-mehr-Gebrauchtes)

(2.1 - 3) (concepts a differentioations 2)

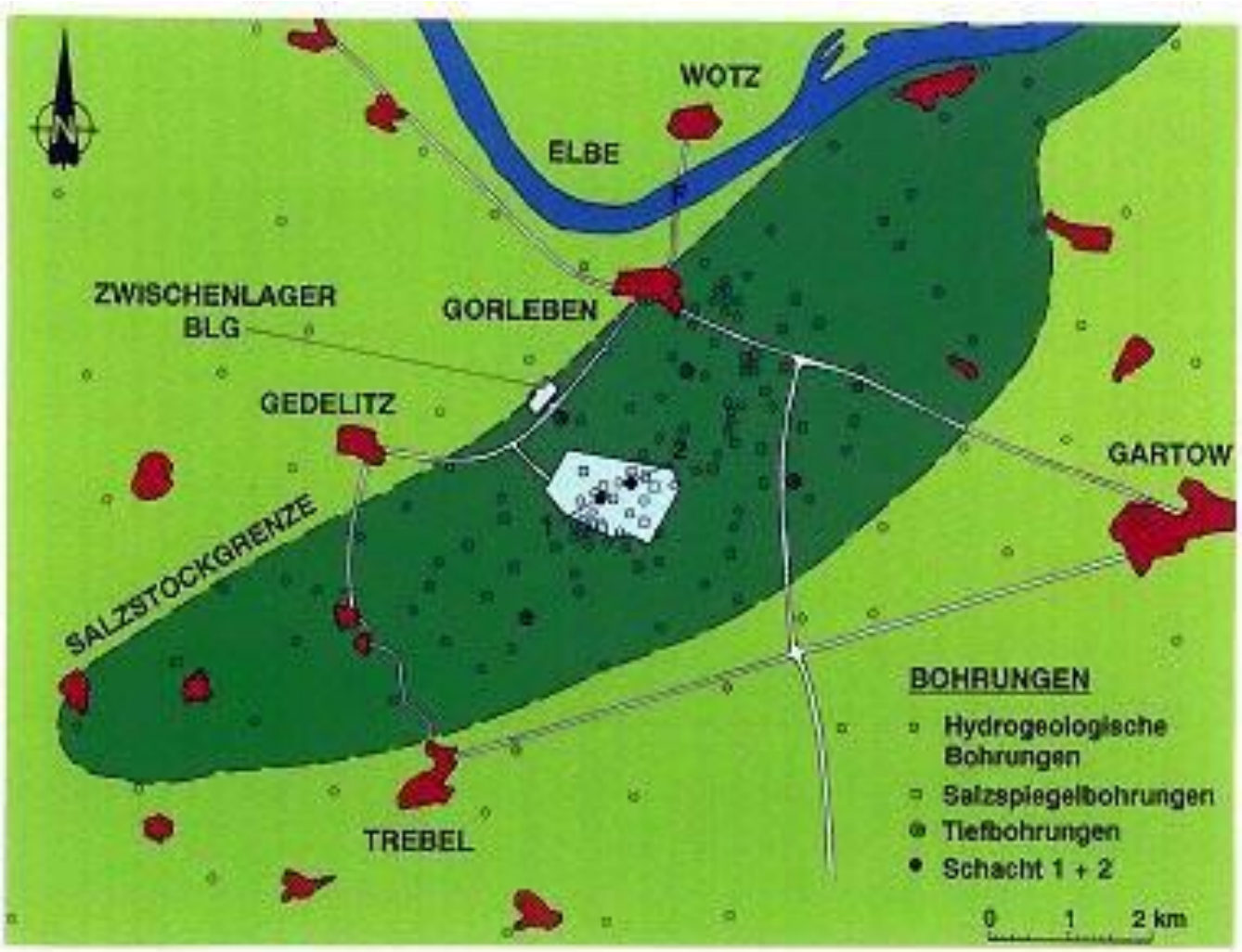
- Für den Umgang mit Nicht-mehr-Gebrauchtem werden in der Moderne „spezifische institutionelle Arrangements“ geschaffen und bestehende Arrangements angepasst
- Output dieser Arrangements: Normierung und Standardisierung von Abfallbehältern, „Entsorgungsrhythmen“, Erfindung von Deponie- und Verbrennungstechnologien etc. („Modernisierung des Mülls“).
- Abfall-Infrastrukturen als Ergebnis eines einschneidenden und weit reichenden Transformationsprozesses (spezifiziert, globalisiert etc.); Kontroversen und politische Auseinandersetzungen gehören zu diesem Transformationsprozess (praktische Probleme der effizienten Beseitigung, Zurechnung von Verantwortlichkeiten, Regulierungs-möglichkeiten) (vgl. Keller 2000, ders. 2008).
- Stromwirtschaft als Abfallproduzent ist ein wichtiger Akteur, da Elektrifizierung eine nicht hintergehbare Voraussetzung moderner Industriegesellschaften.

2.3 the conflict at Gorleben

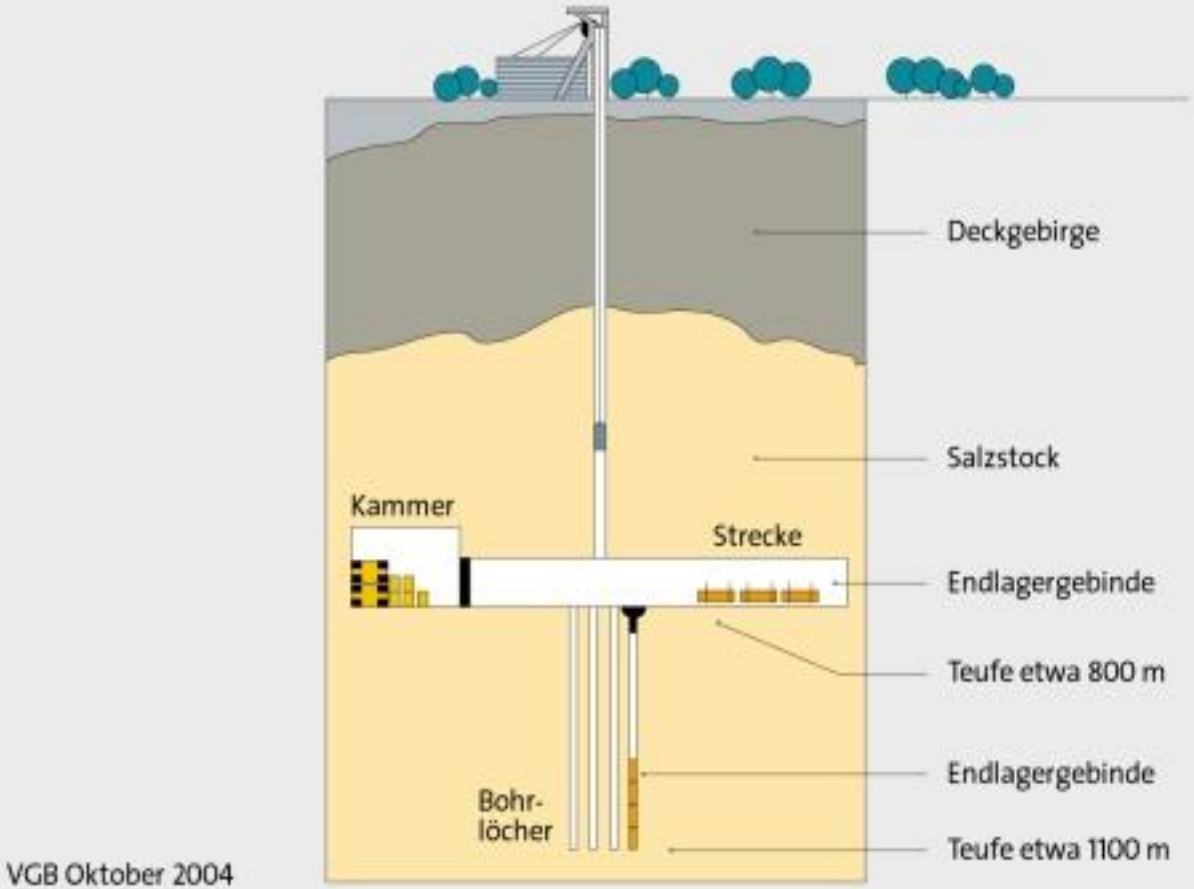
- heute Erkundungsbergwerk, möglicher Standort für ein Endlager für wärmeentwickelnde Abfälle, Moratorium soll aufgehoben werden
- drei zusätzliche Einrichtungen: Pilotkonditionierungsanlage, Transportbehälterlager, Lager für radioaktive Abfallstoffe

(2.3-2)

Landkarte Gorleben



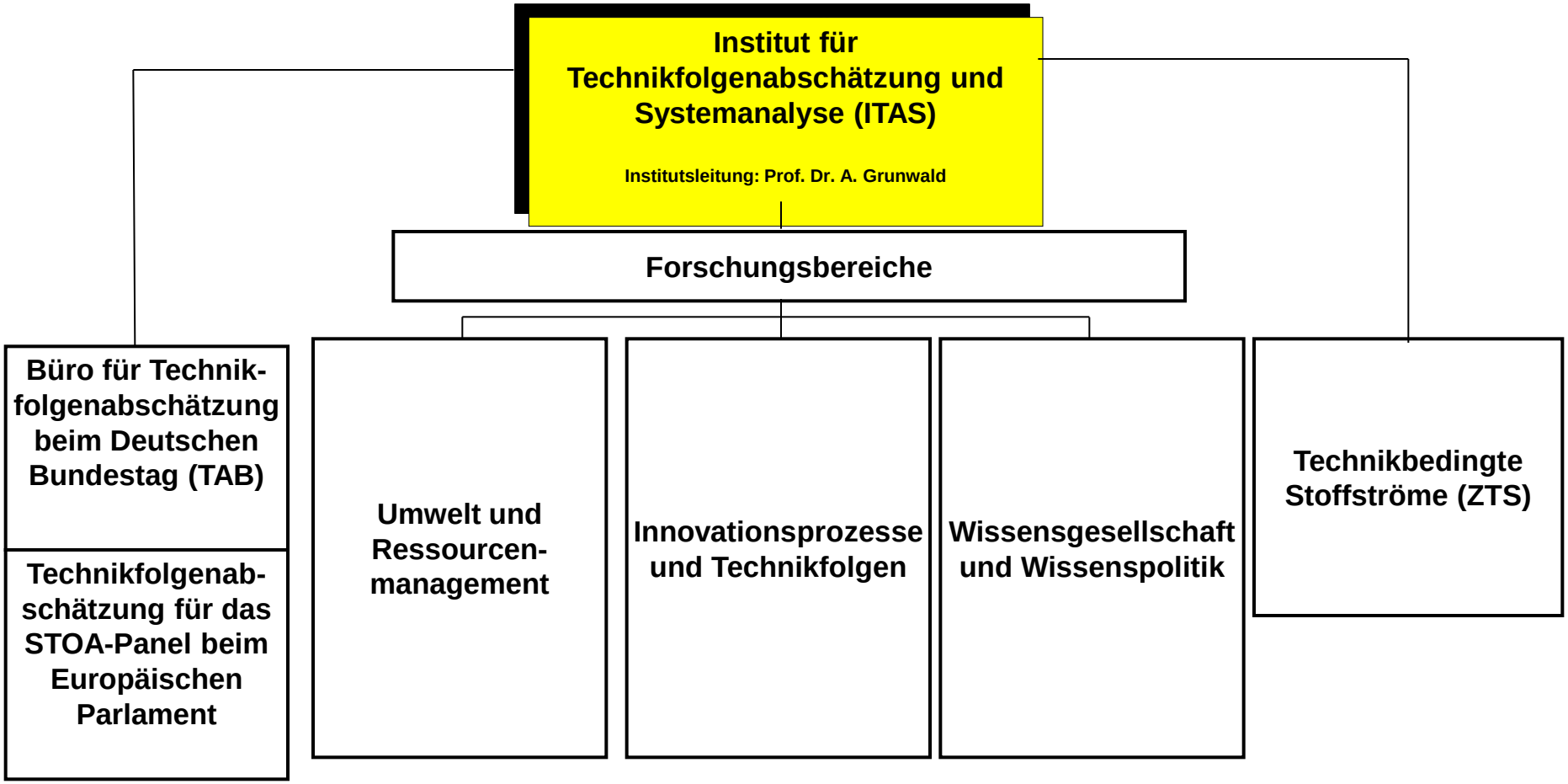
Conceptual Options of an Underground Disposal in Germany

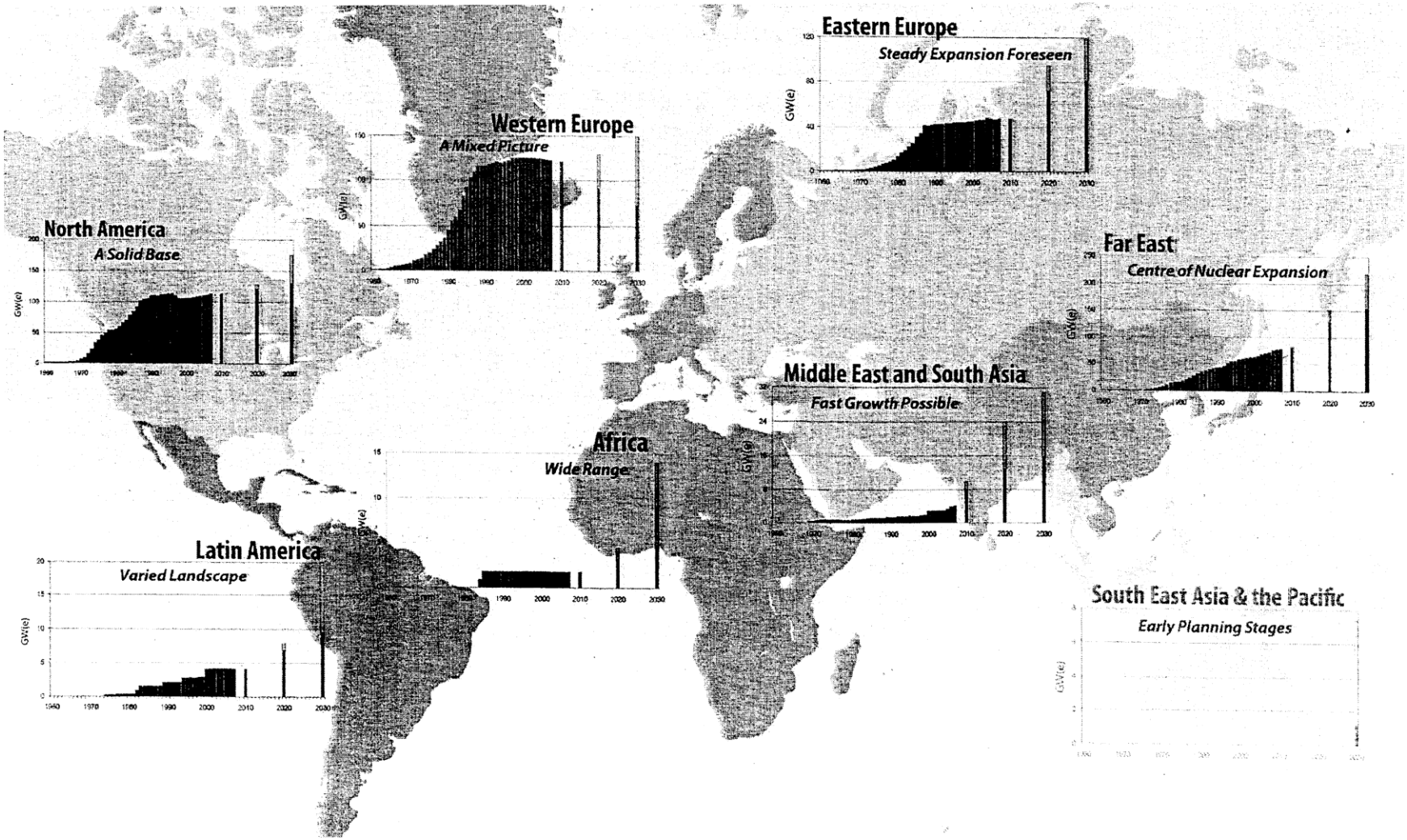


Kap. 2.4 Eckdaten zum Standort Gorleben

- 1973 Entscheidung der BReg für NEZ (incl. Endlager)
- 1977 Wechsel von einem Standortvergleich hin zum Start am Standort Gorleben (Feb. 1977 Niedersachsen pro Gorleben) (Tiggemann 2004, Möller 2009), Oberflächenanlage NEZ lange im Fokus, im Mai 1979 Ende des NEZ-Kozeptes)
- Differenzen zwischen Bundes- und Landesregierung mit starken Auswirkungen auf die Auseinandersetzung und angesichts der parallel entstehenden mobilisierungsfähigen anti-nuklearen außerparlamentarischen Opposition. Aufschaukeln zu einem seitdem andauernden Konflikt (Rucht 1980, 72f; Tiggemann 2006, 95; Kolb 1997).
- 1983 Beginn der untertätigen Erkundungen
- 1983 bis 1999 unterirdische Erkundungen, Erkundungen nach dem alten Bergrecht ohne formale Öffentlichkeitsbeteiligung i.w.S.
- seit 2000 Gorleben-Moratorium beschlossen, Ausstiegsbeschluss (2000), Versuch eines Neuanlaufs bei der Suche nach einem Endlager (AkEnd 1999-2002), verschiedene Angebote der Bundesumweltminister der rot-grünen und der rot-schwarzen Bundesregierung.
- since Oct 2011 Koalitionsvereinbarung der aktuellen schwarz-gelben Bundesregierung: Auslaufen des Moratoriums im Herbst 2010 und Fortsetzung der Erkundungsarbeiten.

ITAS am KIT


Institut für Technikfolgenabschätzung und Systemanalyse (ITAS)
Institutsleitung: Prof. Dr. A. Grunwald
Forschungsbereiche
Büro für Technik-folgenabschätzung beim Deutschen Bundestag (TAB)
Technikfolgenab-schätzung für das STOA-Panel beim Europäischen Parlament
Umwelt und Ressourcen-management
Innovationsprozesse und Technikfolgen
Wissensgesellschaft und Wissenspolitik
Technikbedingte Stoffströme (ZTS)



Quelle: McDonalds et al. 2009, p. 226