



ENTRIA

DISPOSAL OPTIONS FOR RADIOACTIVE RESIDUES:
INTERDISCIPLINARY ANALYSES AND
DEVELOPMENT OF EVALUATION PRINCIPLES

Nuclear Waste Governance in Germany

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Content

- Background / Dimensions of the problem
- Institutions
- Processes
- Discourses / Main issues discussed



Heavy Protests and large Demonstrations in the past



But also decline of nuclear industry
since 1980s because of economic reasons



Dimension of the Problem in Germany

- 28.000 m³ of ,heat developing‘ nuclear waste (HLW)
- 300.000 m³ of non-heat developing waste disposal planed in ,Schacht Konrad‘ (LLW + MLW), Morsleben (GDR) to be closed, 200.000 m³ to be removed f. Asse II (LLW + MLW).
- further > 300.000 m³ depleted uranium and ‘other’ waste
- 17 NPP (2011), 8 left (2017), 3 last (2022)
- **Definition of waste conflictual**
- Nuclear issues are mainly seen as **environmental problem** (not economic, national security)
- **Nuclear phase out** till 2021/22 opened a **window of opportunity** to negotiate waste issues

Research-
repository Asse II
(water-intrusion)



Foto: GSF

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Map of radioactive waste (interim)
storage and contaminated sites
- which shows the perception of the
Problem by the Anti-Nuclear-Movement

www.atommuellreport.de

Main problems seen:

- **Accidents,**
- **Low dose regime** (permanent risk),
- **Waste as intergenerational problem**



Pressures to act – window of opportunity

- Impacts of Fukushima, but long discussion and decline of nuclear industry before
- Concerns with interim storage, nuclear industry needs solution(s)
- judicial demands, regulatory requirements (nationally, European Union)
- ethical concerns (intergenerational justice)
- Growing pressure from communities, which hosted nuclear power-plants and where is just the spent fuel (no jobs or taxes)
- Actual costs for decommissioning + Waste:
 - ~ 23 Billion Euro paid by energy companies
 - State will pay additional costs (least 23 B.€)
 - till 2099 overall **169,8 Billion Euro!**



Multi-Level Governance

- international: IAEA → Joint Convention
- European Union (EU) → Directive 2011/70/Euratom
- **National Level**
(parliament, regulator, implementer)
- (federal) State Level (parliament, administration)
- **Regional Level, Municipality Level**

High Complexity!

- are **concentrated on national level**
- **under state control**

- Newly created Institutions:

- **Regulator**

- Federal Office for the Safety of Nuclear Waste Management – Bundesamt für Kerntechnische Entsorgungssicherheit (BfE)

- **Operator + Implementer** for all repositories (April 25, 2017):

- Federal Company for Radioactive waste Disposal – Bundesgesellschaft für Endlagerung (BGE)

Not just classical actions of governments,

- more **partly informal, hybrid** procedures like:
 - participation,
 - **comissions**, local forums,
 - **permanent boards** with members from **Civil Society** (Begleitgremien),
 - consensus seeking approaches, etc.
- aim: creating legitimacy for stable and long lasting decisions
- Reversibility and retrievability (R&R) seen as main approaches

German Commission on siting procedures for a final repository (2014-16)

- 33 members, initiated by parliament (Bundestag):
 - 1 head (in fact 2),
 - 16 politicians (**no votes on final report**),
 - 8 scientists,
 - 2 religious representatives (protestant + catholic)
 - 2 environmental NGOs,
 - 2 economic representatives,
 - 2 workers unions
- Criticised by anti nuclear movement (members, setting, frame, time)
- Some **participatory approaches** in the process (meetings, regional conferences, online comments)

Hybrid Institutions: National support body (Nationales Begleitgremium)

- **Elected members by parliament:**

- 2 heads: Prof. Miranda Schreurs, Prof. Dr. Klaus Töpfer (formerly UNEP)
- 2 former member of commission,
- 2 new members: Dr. habil. Monika Müller (Protestant Academy Loccum), Prof. Kai Niebert, (DNR, Zürich)

- **Elected through process:**

- Student, Marketing-Expert, Prof. Industrial Ecology + Quantitative Methods

- **Process:** thousands phone calls, 3 meetings, 3 middleclass people



- HLW: Standortauswahlgesetz (law for a siting procedure)
 - Parliament decides in five different steps
 - ‚hybrid‘ institutions: commission, National support body, regional conferences

- LLW + MLW
 - 200.00m³ LLW+MLW in Asse II retrievability unclear, process started

 - for more than 300.000 m³ no plan foreseen
→ eventually with HLW

- No serious attempts for running NPPs longer
- Finances / Who has to pay?
 - interesting argument: The state wanted industry (+ bomb?) so also has to pay?
 - debate nearly ended / decided
- Decommissioning + interim storage + LLW storage
 - debate mostly on regional level
- **struggle to overcome the (negatives of the) past**
(Aufarbeitung der Vergangenheit), different attempts:
 - (scientific) wrong prognoses in the past?
 - state vs. anti-nuclear-movement

- **No overall strategy** for all kinds of nuclear waste, but for HLW
- **Significant changes in Governance** to be seen:
 - **Concentration** of institutions and responsibilities **on national level (all state owned and administration)**
 - more **hybrid** governance **institutions** / participation
- Conflict (usage NPP) is decided but not resolved
- Focus at the moment is creating trust
and will be „Aufarbeitung der Vergangenheit“

Energiepolitik und Klimaschutz
Energy Policy and Climate Protection

RESEARCH

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An International Comparison

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Thank you for your attention!

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