

# Summary of German Workshop "Regulatory requirements for abandonment of underground facilities"

DR. GREGOR-SÖNKE SCHNEIDER  
HEIKE BERNHARDT

Workshop "Regulatory and technical requirements for  
responsible abandonment and re-use of salt caverns"

Utrecht / The Netherlands

11.-12.11.2019



**DEEP.KBB**

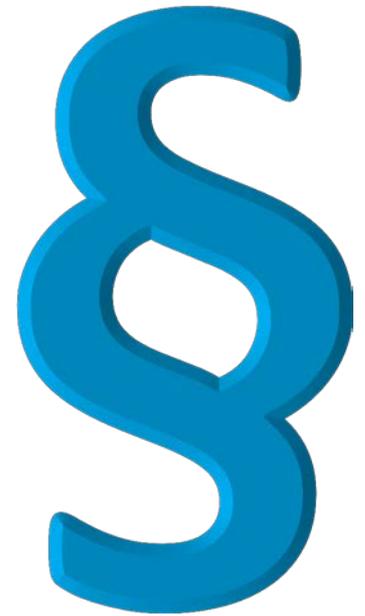
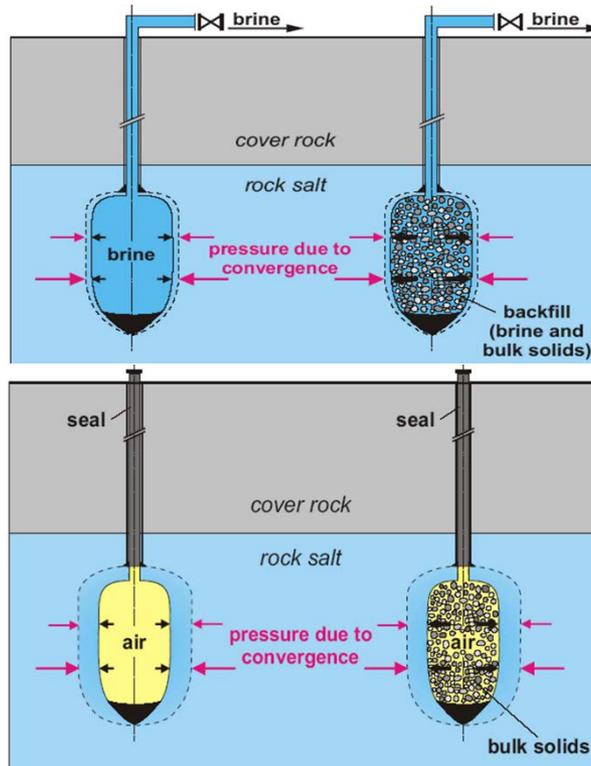
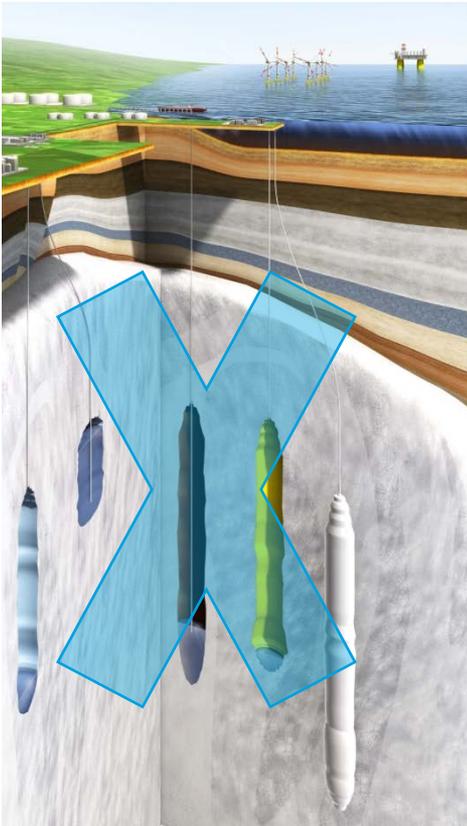
- Two-day workshop „Regulatory requirements for abandonment of underground facilities” at DEEP.KBB office in Bad Zwischenahn
- Organizers: DEEP.KBB & GreenbergTraurig, LLP Berlin
- Focus: Discussion of open questions on the implementation of the regulatory and legal requirements for abandonment of underground gas storage facilities in Germany
- Presentations by:

Bezirksregierung  
Arnsberg



Landesamt für  
Bergbau, Energie  
und Geologie





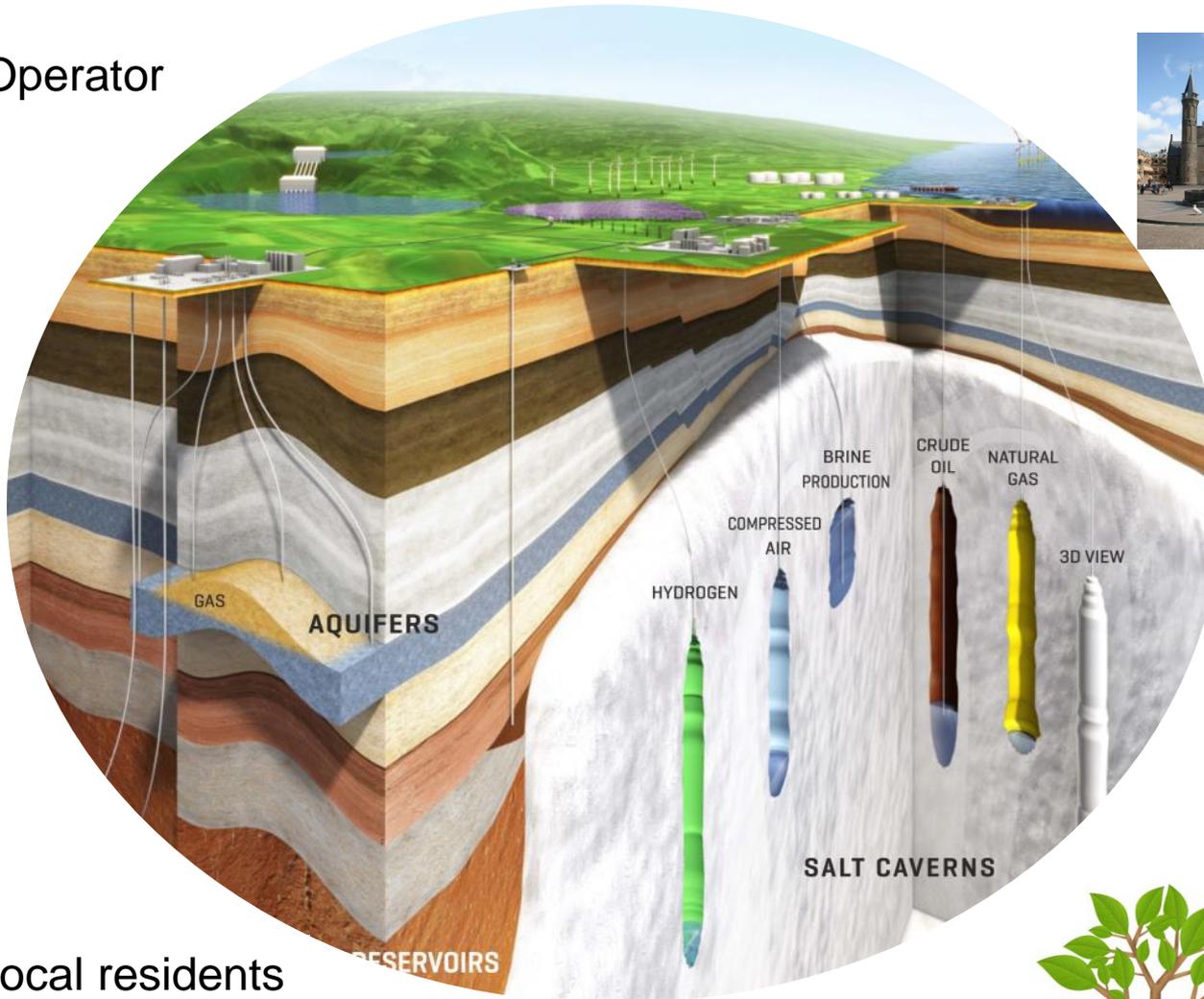
# Abandonment: Stakeholder



Operator



State & Policy



? Other



Follow-up projects

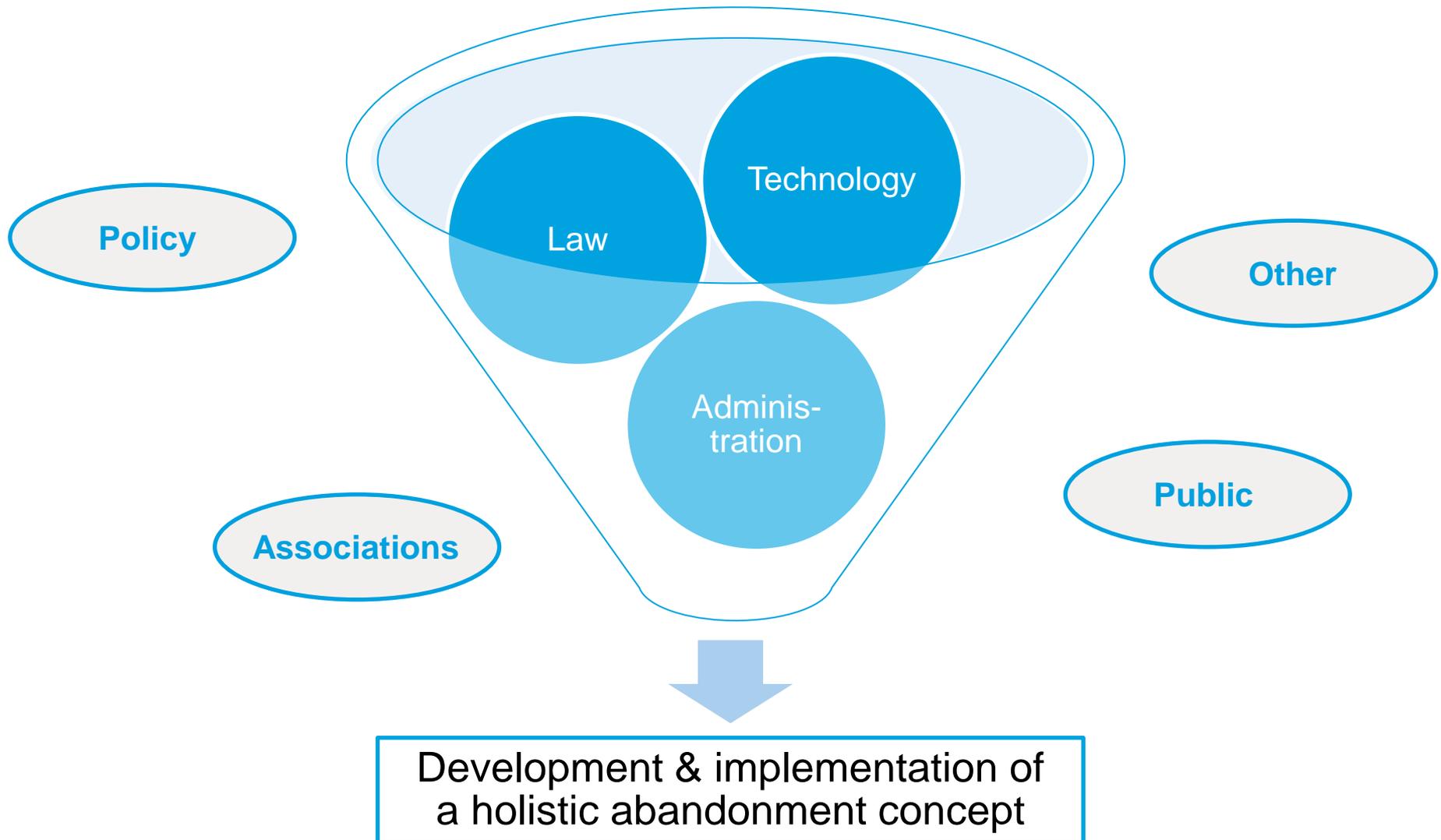


Local residents



Environmental associations

# Interdisciplinary approach: Consideration of all aspects



## Main Conclusions

- Current state of the art puts its focus on the whole life cycle of salt caverns including abandonment phase
- Aspects of the abandonment phase have to be taken into account already during the design, construction and operation phase of a cavern
- Different stakeholders with different perspectives and conflicts of interest
- Non-technical aspects get more important (social and legal aspects)



# Abandonment of salt caverns: current state of the art

## Main Conclusions

- The results of research work, in-situ tests and laboratory tests show that safe abandonment with brine is feasible
- Further technical options are possible (e.g. cavern backfilling)
- Common sense in Germany: abandonment with brine
- Individual abandonment concept is required for each cavern / cavern field
- Several caverns have already been abandoned in Germany



# Regulatory requirements for abandonment of underground storage facilities in Germany

## Main Conclusions

- Identification of low regulatory density at the level of laws and ordinances
- Importance of administrative practice → necessary flexibility due to technical progress and development
- Schedule for dismissal from the supervision of the mining authority
  - Liquidation of operating companies
  - Civil liability / mining damage law
- Eternal liability in public-law? → Question of proportionality



# The framework of mining law for abandonment of salt caverns in Lower Saxony

## Main Conclusions

- State of the art: Abandonment with brine or water
  - Abandonments of 13 caverns with brine in Lower Saxony without any incidents
- Technical requirements: borehole integrity, cavern stability and long-term safety, plugging of the cavern, monitoring / follow-up phase
- Further technical options are possible (e.g. cavern backfilling), but possibly no application of mining law
- No need for additional regulation



# Experiences in the context of closing operation plan procedures from the point of view of the mining authority in North Rhine-Westphalia

## Main Conclusions



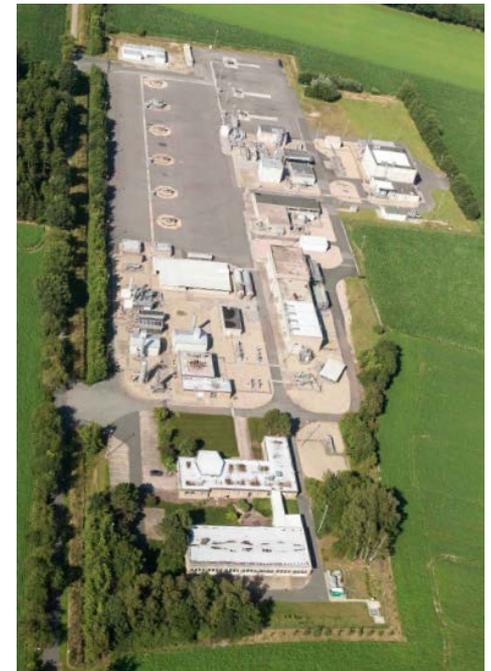
- The closing operation plan procedure allows flexible implementation of the regulatory requirements
- Technical option of backfilling for abandonment is an exception; Abandonment with brine is generally preferred
- Related fields of law in the procedures: environmental law, water law, waste law, monument protection law
- Coordination between the different authorities is desirable



# Practical experience: the abandonment of Kalle aquifer storage facility

## Main Conclusions

- Several operating plans during different steps in the abandonment process
- Increasing importance of public acceptance:
  - Social media reporting concerning technical details
  - Reaction of local residents
- Fields of law: mining law, environmental law & civil law



# Special interests arising during Workshop discussion

- Time frame to be considered after abandonment
- Dismissal from the supervision of the mining authority
- Eternal liability towards authorities
- Difference between abandonment and decommissioning
- Emphasis on administrative regulations and administrative practice
- Backfilling with solid residues / thick matter only in exceptional cases (potentially no application of mining law in Germany)
- Related areas of law & co-ordination between authorities (e.g. environmental authority / mining authority)



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Thank you for your  
attention!

Questions?

DR. GREGOR-SÖNKE SCHNEIDER, DEEP.KBB

HEIKE BERNHARDT, DEEP.KBB