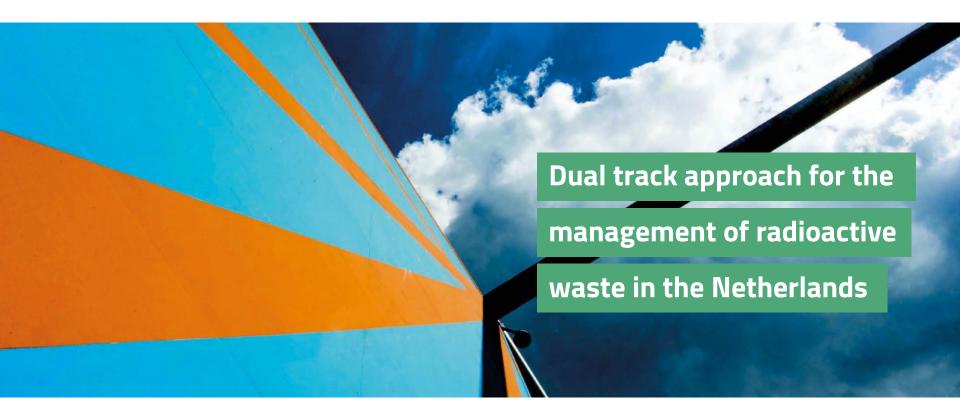


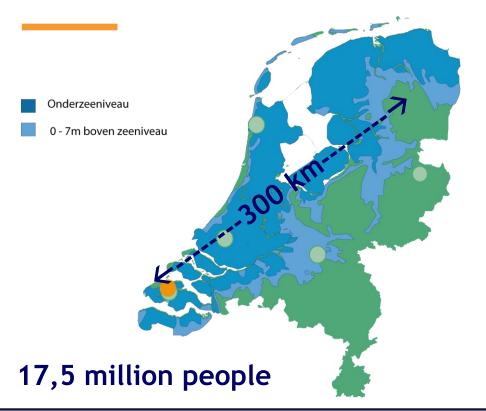
Ewoud Verhoef – Thursday 16 September 2021 ERDO webinar



RADIOACTIVE WASTE



SOLUTIONS FOR THE NETHERLANDS



- small volume waste
- high ground water table
- high population density
- high environmental awareness
- little space

No surface disposal, only deep geological disposal

- 1. Radioactive waste management
- 2. Dual track policy
- 3. What has COVRA done?
- 4. Conclusions

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RADIOACTIVE WASTE POLICY

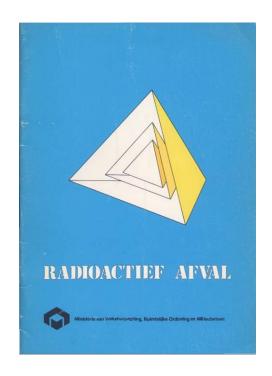
- all waste managed and owned by COVRA
- all waste at one industrial site
- at least 100 years storage, in buildings
- disposal after 100 years



RADIOACTIVE WASTE POLICY

In 1984 memorandum the government's position on radioaction waste policy is set out:

"During the storage period, options for final disposal can be further studied, international developments can be followed and it may even be possible to link up with a possible internationally established disposal facility."



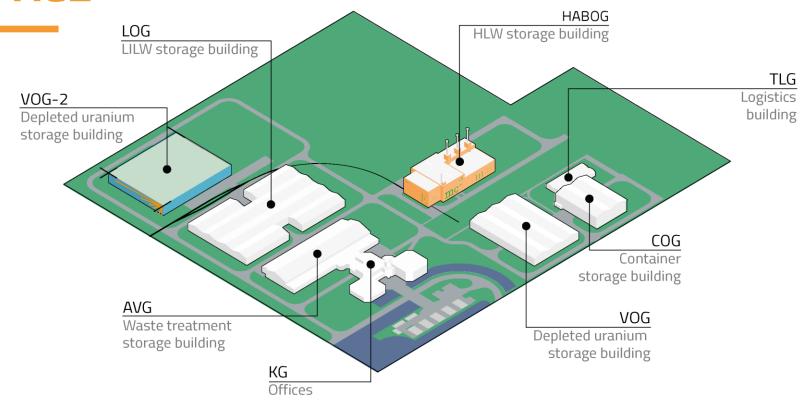
COVRA

- Established 1982
 - → Nieuwdorp 1992
- State-owned enterprise 2002
- 70 people
- 20 million turnover

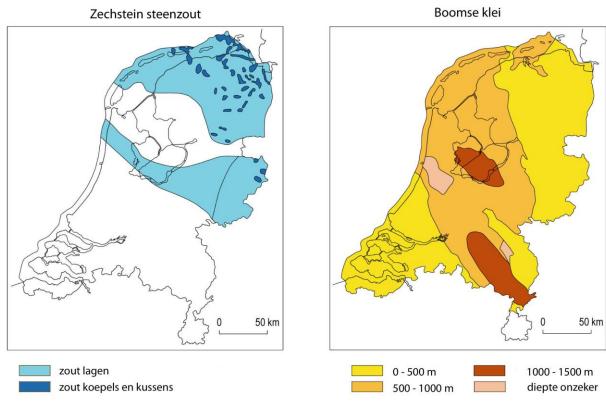
Only statutory task: care for Dutch RW to protect people & the environment



SPACE



RESEARCH



MONEY: WAIT OR COLLABORATE

- polluter pays
- costs covered by fees
- cost effective
- no retrospective adjustment of fees paid
- COVRA takes over full title

- contribution per m³
- In 2130 € 2 billion
- real interest of 2,3 %
- safe investment
- the State as a safety net

LOGIC OF A DUAL TRACK POLICY

CLEAR ADVANTAGES.

- Lower costs,
- More choice of possible suitable locations,
- Pooling technical capacity and supranational supervision.
- Diversification of disposal per waste type.

DISADVANTAGES

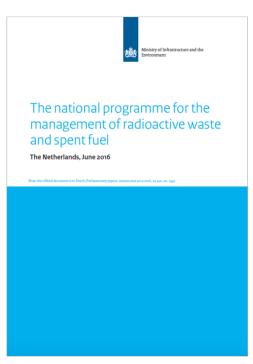
- Longer distances,
- Deviating (national) legislation and definitions,
- Different timetables and locations from where the waste will be delivered.



LOGIC OF A DUAL TRACK POLICY

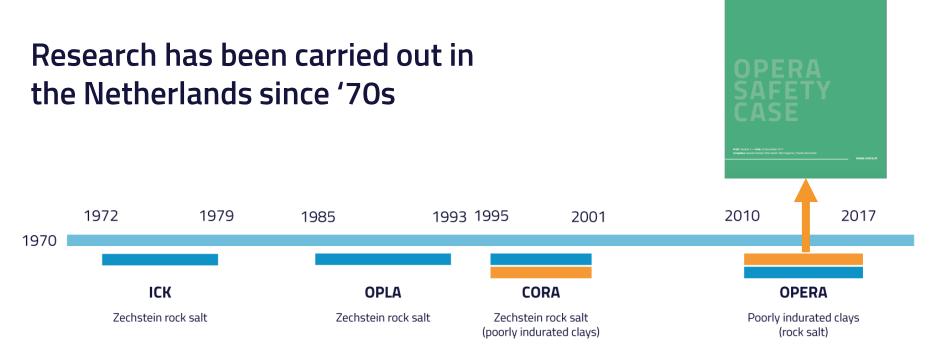
NEW ADDITIONAL POLICY: FLEXIBILISATION OF THE TIMETABLE

"Developments may take place in the future, such as innovations or international cooperation in creating a multinational disposal facility, as a result of which society will want to deviate from the selected timetable of aboveground storage at COVRA till 2130. Because radioactive waste is stored aboveground, it is possible in the Netherlands to deal flexibly with the timetable."



- 1. Radioactive waste management
- 2. Dual track policy
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RESEARCH



CURRENT PROGRAMME

Develop knowledge to implement safely and efficiently geological disposal in clay and rock salt in the Dutch subsurface, taking the entire waste chain into account.

The long-term research programme should provide valuable scientific and technical information for the decision-making on and preparation of a <u>national or multinational</u> GDF for the Dutch radioactive waste.



LONG-TERM RESEARCH PROGRAMME

Overall research programme and work programme for 2020-203

Date: Winter. 2019 - 2020

INTERNATIONAL CO-OPERATION















International Atomic Energy Agency



Association for Multinational Radioactive Waste Solutions

WHAT HAS COVRA DONE?

- ARIUS
- SAPIERR I
- SAPIERR II
- ERDO working group
- ERDO association
- International organisations
- Many papers and presentations at international conferences



Waste management Phoenix 2014

- 1. Radioactive waste management
- Dual track policy
- 3. What has COVRA done?
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CONCLUSIONS

- The Netherlands considers both a national and multinational disposal facility since 1984
- A dual track approach means both working on national repository and a multinational repository by policy-maker and RWMO alike
- The second track costs little extra, but provides a potential long-term reward as well as short-term benefits
- Collaboration starts pre-disposal