Speech An honest conversation from the start

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

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Context

On behalf of the Ministry of Economic Affairs and Climate Policy, Theodor Kockelkoren (Inspector General State Supervision of Mines) was invited as keynote speaker at the workshop on "Regulatory and technical requirements for responsible abandonment of salt caverns" in the Netherlands. The workshop took place on November 11th and 12th 2019 at TNO in Utrecht and reviewed current practices and potential hurdles for salt cavern abandonment and cavern re-use from a technical, safety and regulatory perspective. The workshop was initiated by the Ministry of Economic Affairs and Climate Policy and organized by ECN.TNO and DEEP.KBB. Invited were experts, operators and authorities from the Netherlands, France and Germany.

Today our focus is on a technical topic that will increasingly be also the focus of society. Why? Climate change is increasingly confronting us with intense questions. How can we rebuild our energy systems to ensure we realize our national and international commitments? The challenge is without precedent and the urgency increasing. The overarching topic is our safety.

The technical topic of today is how to approach the re-use and abandonment of salt caverns. Indeed, it is possible that these manmade subsoil structures can contribute to our desired energy transition. This transition goes beyond the boundaries of organisations or companies.

And while this transition should in a timely fashion deliver a massive cut in greenhouse emissions, it should also do this in a sustainable way. That is, the transition itself should not while it is progressing, negatively impact the environment and people's health. Or in risk terms: the energy transition itself should not increase the risks to our society and environment.

State Supervision of Mines is committed to a safe energy transition that benefits people and reduces negative impacts to the environment.

……And I see you nodding in agreement. Who could disagree with that? And yet ... it is by no means obvious.

The Groningen case teaches us many lessons. Unfortunately, one of the most important lessons is that safety of people and care for the environment is not at all so naturally at the forefront of our thinking and doing. Economic interests took precedence. Our national decision-makers were blind and deaf to what was going on in Groningen.

State Supervision of Mines advocates safety by design. We need to consider the full life cycle and take a broader perspective on the short and long term safety of people and the environment. We have to be willing to think about this in advance and to do this transparently, involving stakeholders. With emphasis on "willing" and "in advance".

In advance:

- we need to take stock of all possible risks, carry out scenario analyses, including the unlikely ones, and determine which level off risk is acceptable.
- we must determine the control measures for those risks.
- we must consider how design criteria for the caverns and spatial planning can lower the long term impact of a mining activity.

... and we have to be

Willing to monitor these risks and take the necessary precautions. We do this together stakeholders. We need to involve society. ... and not because we have to. But because we want to. Because we understand that we can only get societal support if:

- we are honest. Honest about the risks. Honest about the facts. Honest about what we do and do not - yet - know.

- we act as a guest. Not as a host. And so, for example, any claims would be reimbursed quickly and transparently.
- we really stand with the residents. And we connect to their actual concerns. Their concerns are: do you really care about me? Are you really trying to make things better for me? Can I really trust you? Are you really trying to make our world a better place? And is my voice being heard and considered?

This is by no means an easy task. Mining changes our surroundings irreversibly, which introduces risks to people and the environment. We do not fully understand these risks. Scientific research, which includes learning from incidents, shed new light on the way we appreciate risks. Cavern stability, subsidence and well integrity are pretty well understood but cavern tightness and in particular the interaction between cavern and well, and the way different caverns within a cavern system such as a salt dome interact are not yet sufficiently considered and understood. Post mining impact on the environment has not been top of mind either. It turns out that the abandonment of the current caverns is by no means straight forward. This demands a mind shift. Not only from the salt mining industry and its consultants, also from policymakers and State Supervision of Mines.

Transitions are structural changes that have a major impact on society. Ideally, transitions are allowed the time necessary for that change to take place. However, climate change and our understanding of it have created the urgency of the energy transition. In the Netherlands we are progressing as well and this year has given us the Climate Deal – an arrangement in which all relevant stakeholders have participated and is rightfully so quite ambitious.

In this light, enabling public participation and gaining societal support may seem like too much effort when under time pressure, and, even during a workshop like this, it may be tempting to focus primarily on economic interests, technical solutions and clear rules. But I predict that – if you do that - the transition will be long, rather than short. With many obstacles to overcome along the way.

The challenge is to have an honest conversation about the risks of the energy transition, the control measures and the added value for society – from the start**.** We can only realise this structural change with broad public support.

'Wanting to think ahead' about safety of people and the environment is therefore directly applicable to the discussion about underground storage.

From TNO-ECN research, I learned that we need gaseous energy carriers and buffer capacity to cope with volatile in energy demand and supply. The task of State Supervision of Mines is to ensure that the storage of those gaseous energy carriers in existing and new salt caverns is safe and has a minimal negative effect on the environment. Salt caverns can be utilized in addition to depleted gas fields.

I consider it important that the existing salt caverns can be left behind safely. In the Netherlands, with limited space, it is crowded in the subsoil. We need to plan new activities carefully. We should no longer just think about how to safely and economically extract salt, but also think about how we can optimally use the salt layers for the energy transition. This may require another business model and it means that we have to consider a broader scope:

- Make sure the caverns not or no longer being used for storage are abandoned safely and timely. Gaining societal support would otherwise become unnecessarily difficult. Consider the desirability of financial guarantees for abandonment and after care.
- Broaden the definition of efficient use of mineral resources to efficient utilization of the underground. We then look at the use of the underground for combined salt extraction and storage of gaseous energy carriers to aid the energy transition. This includes issues such as correct well design, optimal size of caverns and blanketing material and consideration of interactions in the cavern system. In addition to storage on land, we can also look at opportunities at sea.
- Direction is essential for efficient and responsible use of the subsoil. Regional energy strategies in the Netherlands are to be established by 2020. To be able to deal with the risks arising from the energy transition in advance, we need to reach agreement on what issues are at stake and what level of risk is acceptable. How do we ensure that local and regional authorities use the available expert knowledge about subsurface risks and combine it with their knowledge of the local situation? Only then will they be able to make the required decisions regarding our future

energy landscape. State Supervision of Mines favours a multi-disciplinary platform that will provide control of the scarce space in the subsurface and make knowledge available to decision makers.

The answers to all these questions are a complex puzzle that we must put together into a cohesive whole in advance. No pieces can be missing from this puzzle. The final image, the point on the horizon, must be clear to everyone. If only just to ensure that we can create workarounds if we encounter obstacles, without losing momentum.

We cannot create this image in isolation, just for the Netherlands, let alone solve the entire puzzle with more than 1,000 pieces. We will need to think and collaborate internationally in advance, including on those pieces on the large energy transition puzzle that depict salt caverns.

That is why it is so good that this workshop has been organised. Especially with the Ministry of Economic Affairs and Climate Policy as director and as inventor of the policy framework as the edge of the puzzle. And you are here for the insight: experts, operators and authorities from the Netherlands, France and Germany. Each of you with your own lessons learned from the past. Each of you with your own opinion. Each of you with perhaps your own vision of the future. That is a must in this phase of designing and mapping out the big energy transition puzzle. I hope that this workshop will prove to be an important step in improving our knowledge: what are all the pieces of the puzzle? How do they look like? Do we really understand every facet of each piece? Only when our collective knowledge is sufficiently advanced will we be able to lay the puzzle and as a result can a clear framework be created. Naturally, with safety of people and the environment constantly in our minds. Thus the energy transition will not suffer unnecessary setbacks and hopefully can progress with due speed to ensure our safety and those of future generations.