Drinking water supply and the challenges of underground activities

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Outline

1. Water supply in the Netherlands
2. Underground spatial planning
3. Drinking water infrastructure
Water supply in the Netherlands

From source ...... to tap

resources → treatment → distribution → installations → tap 126 l. pppd
Water supply in the Netherlands

Water abstraction in The Netherlands
1224 million m³

- Surface water: 466 million m³
- Groundwater: 675 million m³
- Rivergroundwater: 68 million m³
- Natural dune water: 14 million m³
## Water supply in the Netherlands

### Facts:

<table>
<thead>
<tr>
<th>Property:</th>
<th>public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water production:</td>
<td>1.224 mln. m³/yr</td>
</tr>
<tr>
<td>Sources:</td>
<td>60% groundwater</td>
</tr>
<tr>
<td></td>
<td>40% surface water</td>
</tr>
<tr>
<td>Nr of connections:</td>
<td>8 million</td>
</tr>
<tr>
<td>Water pipe system:</td>
<td>119.000 km</td>
</tr>
</tbody>
</table>
Water supply in the Netherlands

Water companies

Water resources
Water supply in the Netherlands

Main challenges – quality and availability of resources

- Farming
- Soil pollution
- Mining activities
- Industry
- Pharmaceuticals
2. Underground spatial planning

Spatial plan for underground activities of National interest

Targets:
- Maintain robust system for drinking water supply
- Designate and protect new resources for future drinking water
- Accomodate energy transition
Planning underground activities

Dutch approach

Challenge:
• Extra drinking water demand in 2040 is +30% in GE-scenario
• Designation of Additional Strategic reserves by provinces
• Designation of National Groundwater reserves in National spatial plan for the underground
• Protection of these resources in relation to mining activities
Planning underground activities

**Shale gas**

**Geothermal energy**
3. Drinking water infrastructure

Challenges for renovation, repair and renewal

Prevent damage

Safety

Space for alignment

Increase of replacement
3. Drinking water infrastructure

Challenges for renovation, repair and renewal
3. Drinking water infrastructure

Challenges for renovation, repair and renewal

- Better Coordination
- Better Cooperation
- Improve information exchange
- Take better account of infrastructure in spatial planning
Thank you for your attention

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