

3D Seismic acquisition Friesland

Permissions to operate - onshore

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A quick introduction

- Start working at RHDHV in 1999
- Work fields
 - Permitting & Compliance
 - Environmental & Social impact
 - Stakeholder engagement
- Specialism
 - Permitting
- Clients
 - Vermilion Energy Netherlands BV
 - NAM
 - Google



VERMILION
ENERGY



Google



NAM

Characteristics Industry & Buildings



Seismic acquisition Friesland

- Survey area
- Reason and necessity
- To take into account (based on subarea Akkrum)
 - Permits and exemptions
 - Stakeholders
 - Social consensus
- Current situation
 - Encountered challenges
 - Status Akkrum-survey
- Lessons learned



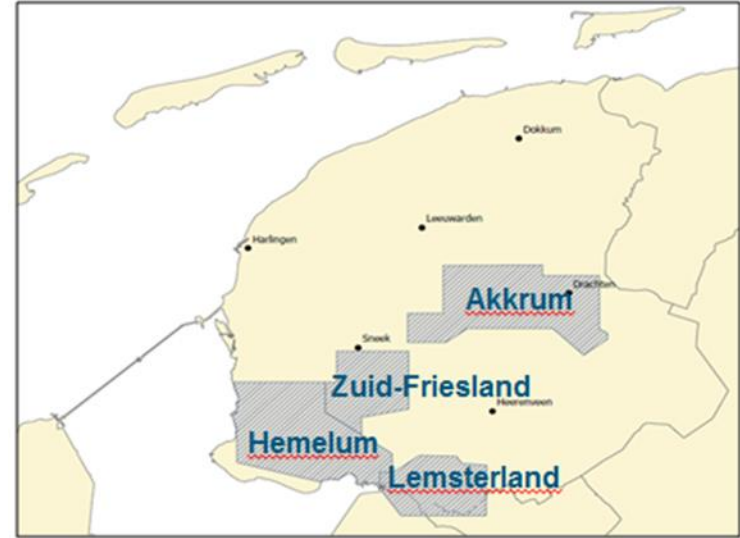
Survey area Friesland

Facts survey area (all subareas)

- 750 km²
- 3 provinces
- 10 municipalities
- 2 water boards
- 9 protected nature areas
- 3 ground water protection areas
- 1 quiet zone



Many stakeholders & “sensitive” areas



Role RHDHV

- Permitting management

Reason and necessity seismic survey

- Quality of current data is poor
- Increase success of exploration drillings



Things to take into account

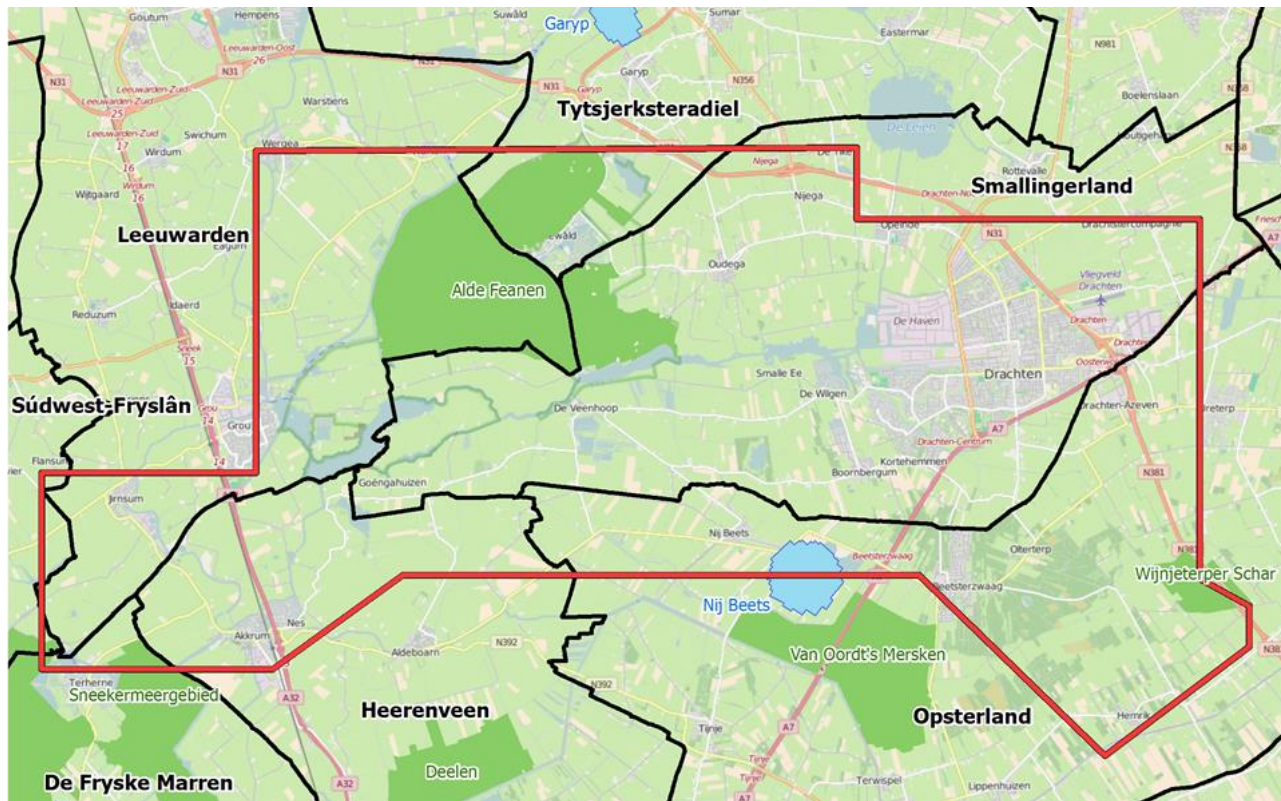
Subarea Akkrum

Timeline

- *Start preparation 2014*
- *Start survey August 2017*

Seismic techniques

- *Shot hole*
- *Airgun*
- *Vibroseis*



Permits and exemptions

Ministry of Economic Affairs

- Nature act permit*
- Exemption of the Flora and fauna act *
- Permit “*Wet explosieven civiel gebruik*”

Ministry of Infrastructure and Environment (Rijkswaterstaat)

- Permit “Wet beheer rijkswaterstaat werken”

Water board

- Water permit

Province

- Exemption of provincial environmental act
- Exemption of provincial road act
- Exemption of provincial water ways act

Municipalities

- Wabo permit
- Temporally exemption zoning plan
- Exemption of General Municipal Regulations

* integrated in new Nature protection act, in force since 1 Jan 2017



Stakeholders



Social consensus

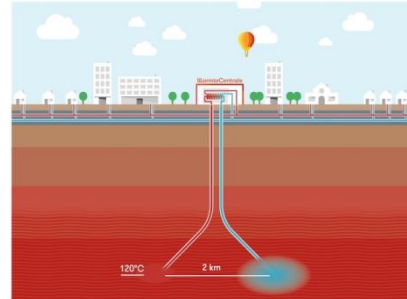
- Public wants to speed up the transition to renewable/sustainable energy
- Public and politics are afraid for **results of seismic survey**



Increase gas production



Negative effects like Groningen
(earth quakes, subsidence, devaluation)



Encountered challenges

Challenges

- Political situation
 - Province of Fryslân adopted a motion against increase gas production
 - Some municipalities follow the provincial “*policy*”
- Public opinion
- Public servants (personal opinion / experience / not allowed to cooperate)
- Communication (lack of communications between civil servants)

Encountered challenges (2)

Mitigation/approaches

- Create support
 - Three level approach
 1. Competent authorities
 2. Land owners (estates, custodians...)
 3. Private property owners

- Start communication with competent authorities in early stage (create support)
- Show benefits of seismic data in relation to sustainable goals muni's (geothermal energy)
- Excursion to seismic survey in Rühlermoor area (Germany)
- Demonstration vibro-seismic in urban area
- Assist/provide public servants with adequate information



Subarea Akkrum – status

- Contractor selected
- 98 % of the landowners are cooperating
- Most of the permits are in place or in procedure

Competent Authority	Permit/Exemption	Status
Ministry of Economic Affairs	Nature act permit	√
	Exemption Flora and fauna act	√
<u>Rijkswaterstaat</u>	Several exemptions (national roads and waterways)	√
Water board	Water permit	√
Province of <u>Fryslân</u>	Exemptions environmental act	In procedure
	Exemptions road act	In procedure
	Exemptions water ways act	In procedure
Municipality of Leeuwarden	<u>Wabo</u> -permit	√
Municipality of <u>Tytsjerksteradiel</u>	No permit required 😊	√
Municipality of <u>Opsterland</u>	No permit required 😊	√
Municipality of <u>Heerenveen</u>	<u>Wabo</u> -permit / <u>exemp.</u> zoning plan	√
Municipality of <u>Súdwest-Fryslân</u>	<u>Wabo</u> -permit / <u>exemp.</u> zoning plan	In procedure
Municipality of <u>Smallingerland</u>	<u>Wabo</u> -permit / <u>exemp.</u> zoning plan	In procedure
Municipality of <u>De Fryske Marren</u>	<u>Wabo</u> -permit / <u>exemp.</u> zoning plan	Procedure not started yet

Lessons learned

- Inform the competent authorities in an early stage and stay in touch
- Show the municipalities the benefits of the seismic data / help them to reach their sustainable goals
- Each municipality has his own policy ➡ no common approach
- Stakeholder engagement is time consuming ➡ start early !!

