## DAP 2021 Upscaling the Heat Transition A bank's perspective

**HARDER** 

Rabobank Lotti Klasen, 15 Octob<u>er 2021</u>



Rabobank

## Rabobank Project Finance is a global financier in renewables and infrastructure, taking leading roles in structuring large and complex transactions



# Global PF Footprint PF Utrecht

## **PF** America New York PF Asia Mumhai Office PF transactions

#### Key elements of Project Finance?





- Technology heavy component in Project Financing requires good understanding of the business

Strong relationships with clients makes it possible to provide long-term and solid funding for projects with long tenors



We have a total global commitment of approx. EUR 5.0bln distributed over 20 countries

#### **Technologies**



## Geothermal energy is currently mainly used in greenhouse horticulture, though numerous project for the built environment are under development/construction<sup>2</sup>

### Built environment

Aardwarmte Castricum (UD) Aardwarmte in de Vallei, Renkum (UD) Aardwarmte Regio Eemland (UD) Aardwarmte voor Almere (UD) *Geothermie Delft (UD)* Geothermie Zwolle (UD) Haagse Aardwarmte Leyweg Haarlem Schalkwijk (UD) Mijnwaterproject Heerlen Rotterdamse Haven (UD) Warmtebron Utrecht (UD) Warmte van Leeuwarden (UD)

Ammerlaan Trias Westland Trias Westland 2

2 Projects are in different stages of development, and its potential / chance of success varies greatly between projects





### Greenhouses

Under development (UD)

Combination

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## What do you think?

## Simplified overview of a Project Finance structure (Geothermal)





## Overview of risks in (Dutch) geothermal energy (1/3)





## Overview of risks in (Dutch) geothermal energy (2/3)





- Appoint professional parties
- Large contingency budgets

 Continuous monitoring during the operational phase

## Overview of risks in (Dutch) geothermal energy (3/3)





#### **Risk mitigants**

- Adequate cooperation between Ministry of Economic Affairs, RVO and SSM
- Geothermal energy higher on the agenda

## Zonder subsidie komt aardwarmte niet van de grond

#### Carel Grol 26 jan

Volgens het Klimaatakkoord van dit kabinet moeten alle woningen in Nederland aardgasvrij zijn in 2050. Geothermie kan zich ontwikkelen tot serieus alternatief, maar de techniek is complex. Daardoor blijft de huidige subsidiepot buiten bereik.





### In het kort

- Geothermie, de techniek om aardwarmte uit de grond op te wekken, staat nog in de kinderschoenen.
- In de laatste subsidieronde dreigt er geen geld te gaan naar geothermie.
- Gevolg is dat de verduurzaming van de warmte helemaal dreigt stil te vallen.

Het aardwarmteproject in Limburg lag zo'n twee jaar stil na lichte aardbevingen in het gebied.

#### SodM positiever over ontwikkelingen bij Geothermie

#### Einde aan verscherpt toezicht geothermiesector

Geothermie moet en kan veilig Dat is een van de conclusies van Staatstoezicht op de Mijnen (SodM) naar aanleiding van de evaluatie van de Staat van de Sector. Het naleefgedrag en de veiligheid bij geothermiebedrijven zijn verbeterd. In 2017 vond SodM het nodig om scherper toe te zien op de veiligheid van geothermieputten. SodM ziet genoeg redenen om dit verscherpt toezicht op de gehele geothermiesector los te laten: 'De ingezette trend qua professionalisering laat dit toe.'

Hans Bolscher, Geothermie Nederland: 'We zijn er trots op dat alle inspanningen van de sector zijn opgemerkt. Zo draagt de industriestandaard 'Duurzaam Putontwerp' die de aardwarmtesector zelf heeft ontwikkeld verder bij aan een veilige en verantwoorde winning van aardwarmte. Ook de door de sector ontwikkelde gedragscode omgevingsbetrokkenheid en het veiligheids-, gezondheids- en milieu-zorgsysteem zijn voorbeelden van positieve ontwikkelingen. We zetten ons ervoor in om aardwarmte nog veiliger, rendabeler en beter toepasbaar te laten zijn. De evaluatie geeft ons hiervoor bruikbare handvatten.'

SodM evalueerde de 'Staat van de Sector Geothermie' (2017) om te onderzoeken wat er met de aanbevelingen uit het rapport is gedaan en of geothermie intussen veiliger is geworden voor mens en milieu.

#### Verscherpt toezicht na de evaluatie

Naar aanleiding van deze evaluatie zal SodM het verscherpt toezicht op de gehele geothermiesector loslaten. De ingezette trend qua professionalisering laat dit toe. Verscherpt toezicht blijft van kracht daar waar SodM dat nodig acht en bij bedrijven die qua veiligheid achterblijven.

## What a typical project looks like

Geothermal energy projects in the Rabobank' portfolio often show similarities in their project and financing structure based on which we can easily make a comparison

#### General project description

Project size Construction period 1-2 years Insurances Subsidy

CAPEX division

Contingency

Total CAPEX costs EUR 10 – 30 mln

30-50% drilling costs

10-20% heat network

10% of total project costs

10 – 30 MW Sponsors Greenhouse horticulture companies *Revenue model* Long-term Heat Supply Agreements (HSA's) RNES, machinery breakdown, CAR (for older projects) SDE + 15 years

#### **Project costs**

Lower production than P90 scenario Geological risk

Delays + additional costs because a sidetrack has to be drilled due to a loose drill bit, clogged well, incorrect design or damaged material (corrosion / erosion) Construction/Technical risk

Delays due to failure to issue irrevocable permits and damage claims (RNES) on time Regulatory risk

### **Financial structure**

*Gearing (Debt/Equity)* Tenor Margin Arrangement fee DSCR Lock-up/Default

70/30 (equity first) Construction completion + 10 years 250-450bps 100-150bps 1.50x 1.20x / 1.10x

10-20% above-ground installations





## What do we need to upscale the heat transition?



Bigger	Better	Together!
Portfolio financing	Innovation and R&D	Government and social support
One party developing, constructing and operating a number of projects	Practice, practice, practice	Public and social support is key
<ul> <li>More extensive knowledge of the underground reduces geological risks</li> <li>Possibility to learn and apply structural innovation and R&amp;D</li> <li>Risk sharing and lower costs improve the bankability</li> </ul>	<ul> <li>The more projects will be developed, the more we learn, the more both costs and risks will decline</li> <li>Active sharing of knowledge and experience with all market players</li> </ul>	<ul> <li>Allocation of subsidies to geothermal energy initiatives</li> <li>Support and stimulation of initiatives for the build environment by (local) governments and municipalities</li> <li>Active involvement of citizens with geothermal energy initiatives to increase support rather than resistance</li> </ul>

# **Questions?**



# Thank you!

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