

## Geothermal energy in the SDE+ in 2012

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## Introduction

- By request of the Dutch Ministry of Economic Affairs, Agriculture and Innovation (EL&I), ECN and KEMA conducted an analysis of the costs of geothermal heat and electricity or cogeneration for the SDE+
- Based on analysis and a stakeholder meeting, base rates were proposed for geothermal heat, combined heat and power (CHP), and geothermal electricity generation

## Framework

- Three types of geothermal energy distinguished in the Netherlands: shallow, deep and very deep geothermal
- Shallow geothermal not considered in the framework of the advisory report for the Ministry of EL&I, except aquifer thermal energy storage for the horticulture sector
- This advisory report focuses on deep geothermal, which is considered to be heating, combined heat and power, and electricity projects between vertical depths of 1500 – 4500m, and does not focus on shallower or deeper projects
- Very deep geothermal: projects with vertical depth between 5000 and 7000m (EGS) not considered in detail

## Advise

- Geothermal heating based on an existing district heating project, with depth aquifer of 3000m and temperature 100°C; base rate €10.9/GJ, based on 7,000 full-load hours
- CHP project based on new district heating project ('groene weide'), with depth aquifer of 4000m and temperature 150°C; base rate for heat and power €18.9/GJ, based on 8,000 full-load hours electricity and 4,000 hours heat (heat/power ratio 2.5)
- Geothermal electricity comparable with CHP, with depth aquifer of 4000m and temperature 150°C; proposed base rate electricity €0.192/kWh, based on 8,000 full-load hours

## Preliminary conclusions

- New geothermal heating projects for horticulture and district heating may apply for the SDE+
- Geothermal CHP projects may also apply for the SDE+
- Geothermal electricity (proposed base rate of €0.192/kWh) does not qualify for SDE+, as the rate is considered to be too high, but such a project may apply as a CHP project

Source: Lensink, S.M. et al (2011): *Basisbedragen in de SDE+ 2012 – Eindadvies*. ECN/KEMA, Petten/Arnhem, September 2011. <http://www.ecn.nl/docs/library/report/2011/e11054.pdf>

**Thank you for your attention!**

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