



Statoil

# Cost-effective and Reliable Engineered Casing Systems for HT Geothermal Wells – HotCase

*Presented at CGER May 22nd 2017*

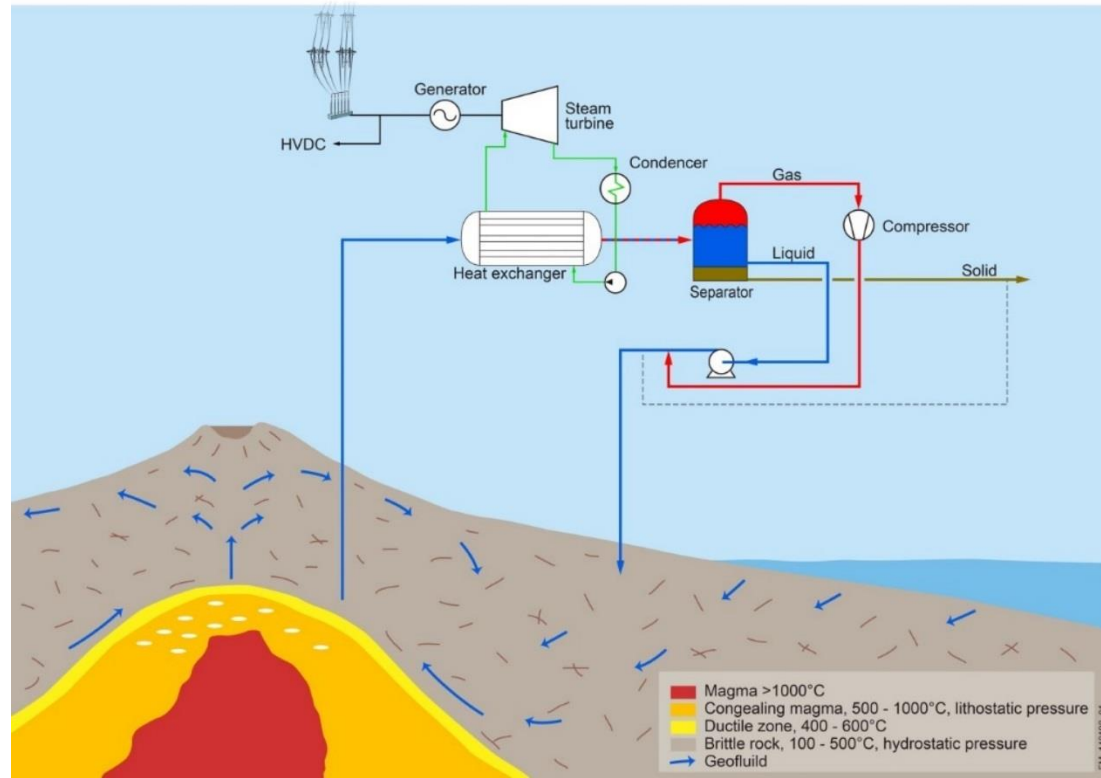
Sturla Sæther



# Geothermal energy in Statoil

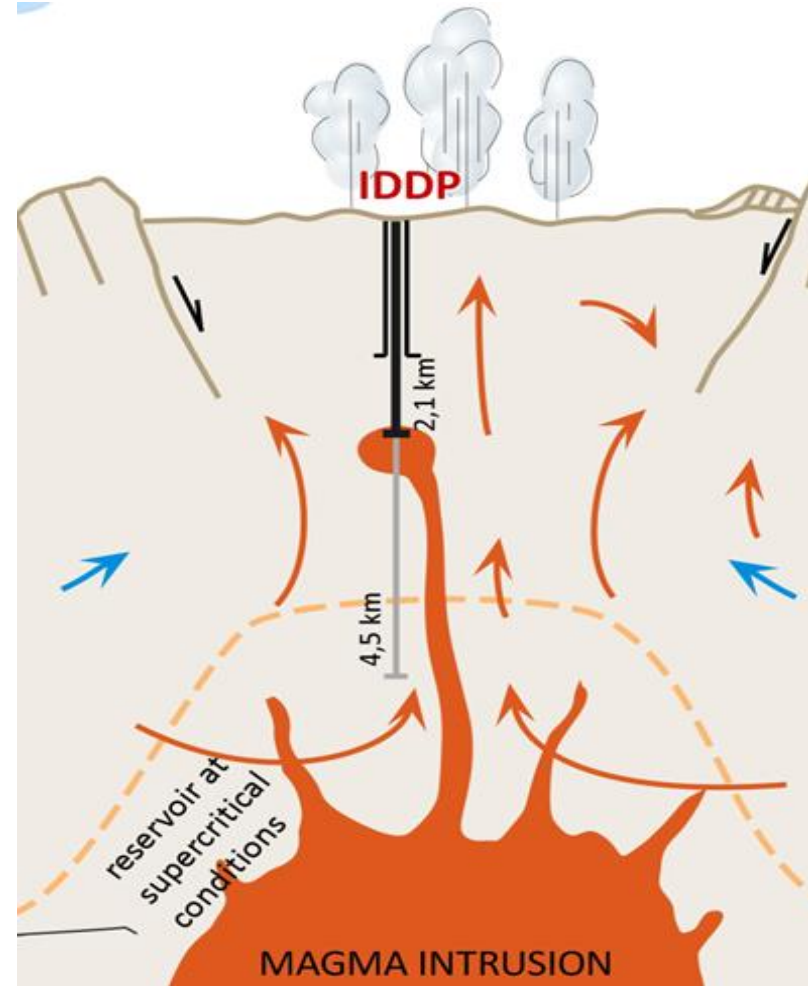
- R&D activity to explore potential for High Temperature High Pressure Geothermal concept
- Participates in Iceland deep Drilling Project #2 <https://iddp.is/>
- Potential commercial business not decided yet

**HOTCASE –  
Development of reliable  
WELL CONCEPT for High  
Temperature geothermal  
wells**



# Overall objectives and business value impact

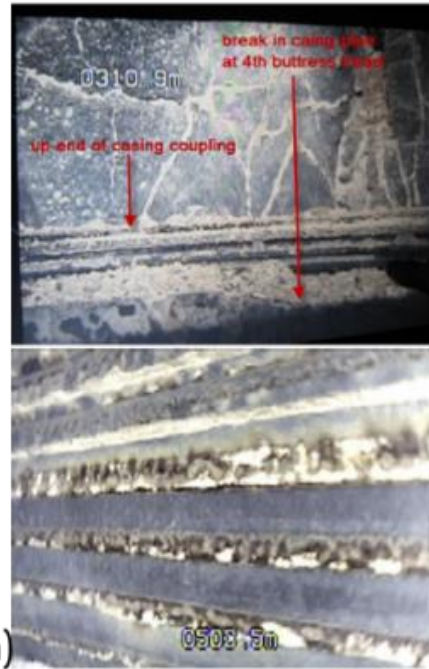
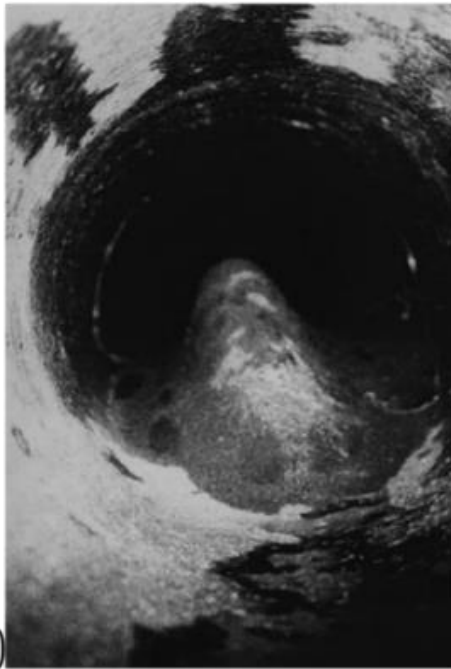
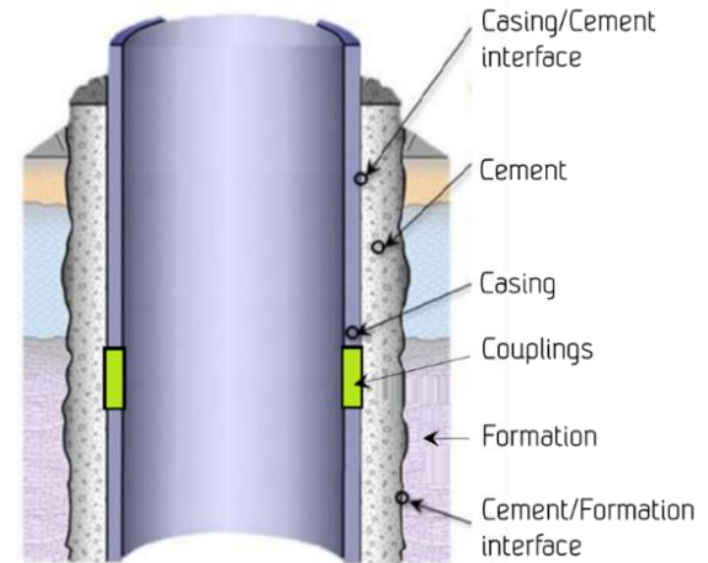
- Aim for high temperature (400 °C) geothermal energy resources for production of renewable energy.
- Potential to reduce investments compared to conventional geothermal.
- High temperature projects can be competitive without political incentives and support.
- High production rates per well and long lasting reservoirs by heat influx from magma plumes.
- HOTCASE is vital with respect to develop reliable well systems in this concept
- The concept may be applicable for resources on-shore as well as off-shore.



# Objective HotCase

- Develop **innovative concepts to TRL 4 for a cost-efficient and robust casing system.**
- **To develop a generic design tool** to explore combinations of cements and steels, herein coating and liner technologies that modify functional and mechanical performance of the casing system

Experience has shown that the casing system may fail by a) **mechanical buckling**, b) **tensile failure** (in threaded connection or cross section), c) **hydrogen embrittlement** and d) **corrosion**.



# Hot-CaSe – 4 year IPN project (2017-2021)

## Industrial consortium

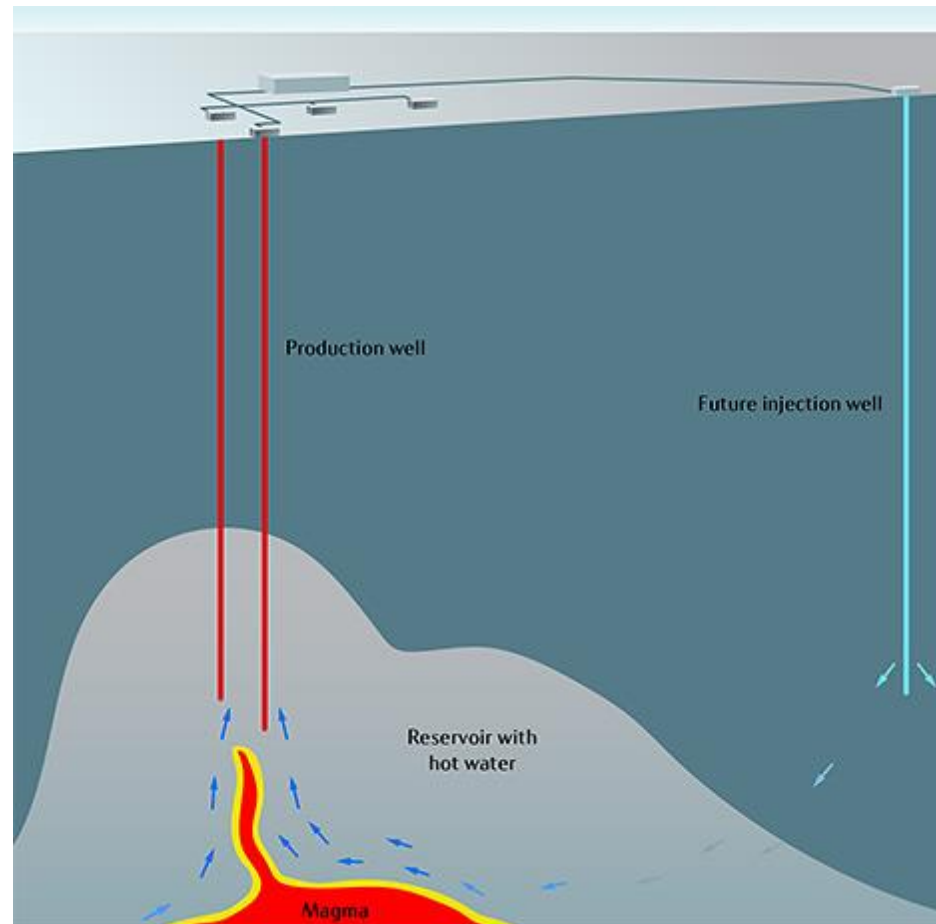
- ✓ Material Suppliers
- ✓ Drilling Technology companies
- ✓ Geothermal solution
- ✓ Geothermal Energy producer



## Research partners



## Research Council of Norway (RCN)



# HotCase - Conclusion

- Key project to solve critical issues for HT HP geothermal power production
- Norwegian competence highly valuable in developing this concept
- Cooperation with leaders in geothermal is essentially
- Iceland has a lot of competence and guidance to other skilled environments

There's never been a better  
time for **good ideas**

