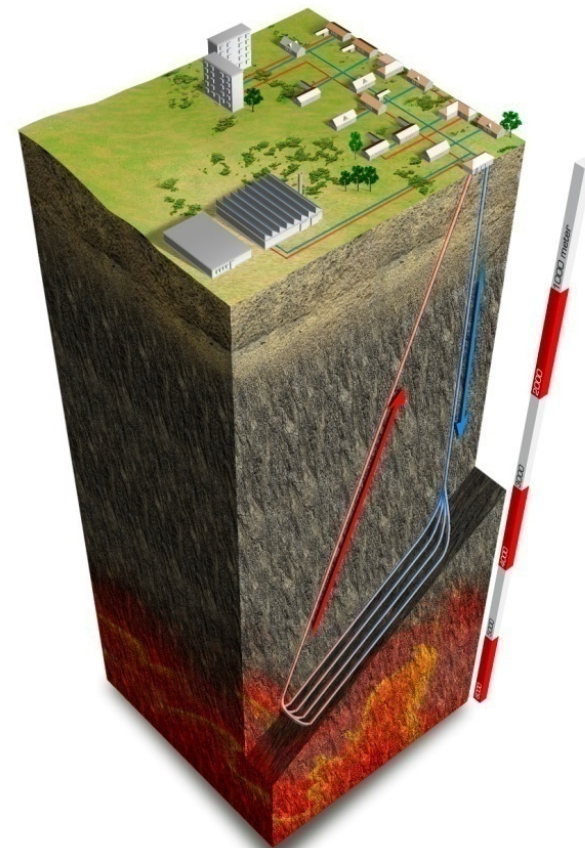


The Power House of Mother Earth

Setting a new standard in deep geothermal energy

ZERO 10
23rd November 2010

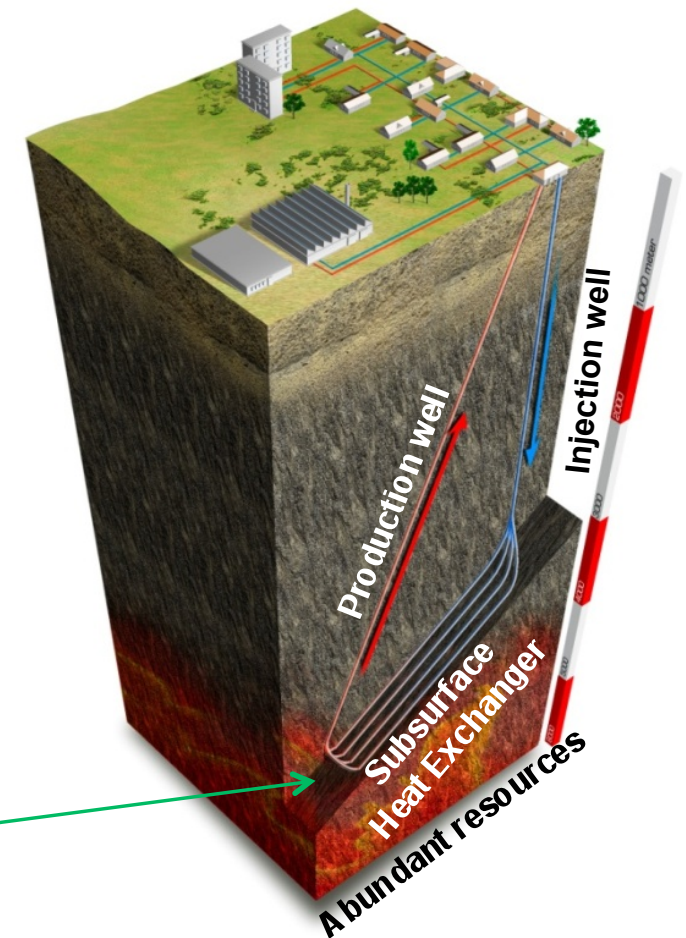


Rock Energy™

- Rock Energy™ is a leading geothermal energy company, specializing in **Hot Dry Rocks (HDR)** for **power generation, heating and cooling**, with a presence in all important parts of the value chain.
- Rock Energy's™ business model is to **build, own and operate deep geothermal plants** in co-operation with local utilities and independent power producers.
- **Experienced management and board** from the oil and gas industry (drilling, geology, project management) and energy systems R&D at NTNU



$\Delta 20^\circ\text{C} = 12 \text{ TWh}$





Premium attributes

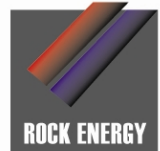
- **Abundant resources available everywhere** – potential to become a significant contributor to energy production and national energy independence
- **Significant global potential** due to less site dependent technology than conventional geothermal technologies
- **Insignificant physical footprint** (preferable to other renewables)
- **Reliable base load energy** without intermittency problems as for other renewables (wind, solar, wave, tidal)
- **Cost of Electricity ('COE') competitive to wind and solar**
- **Very long asset life time** (+50 years)
- **Patents secured** in all major markets.

Attractive financials

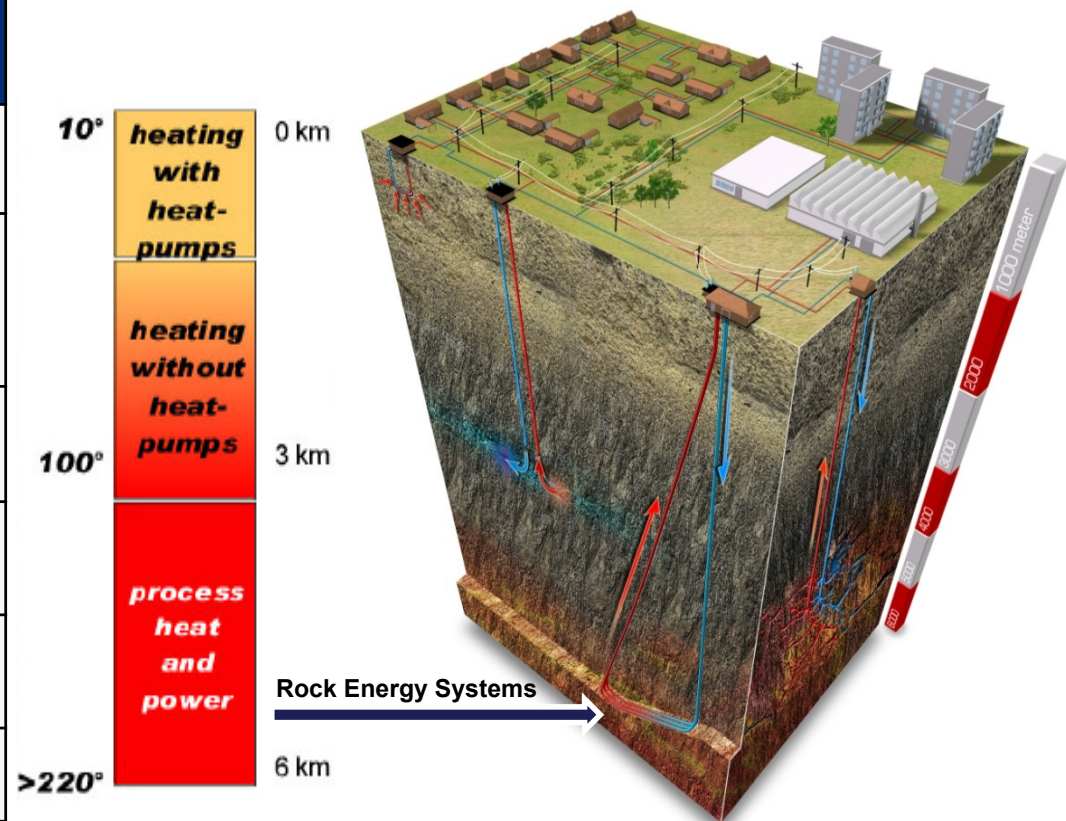
- **Low and predictable maintenance cost**
- **Subsidy schemes available in several countries**
 - UK – Second stage in public funding to be launched in 2010
 - Germany offers very attractive margins
 - EV/EBITDA multiples of 3-5
 - IRR of over 16% expected for plants in Germany

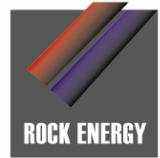
Moderate technical risks

- Commercial and **highly advanced directional drilling technology used for the past 20 years** by the Norwegian Oil- and Gas industry in the North-Sea
- Off-the-shelf equipment required for surface plant

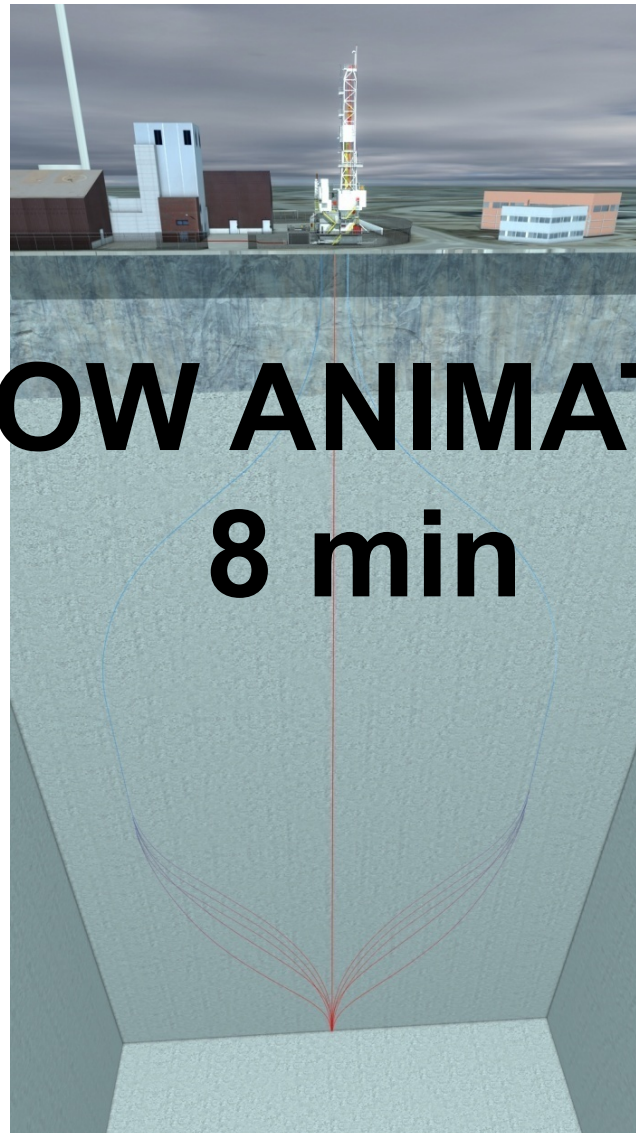


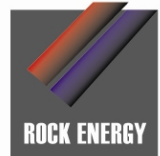
	Hydrothermal Systems	EGS - Hot fractured rock	Rock Energy Systems
Market Potential	Scarcity of sites	Limited attractive sites	Unlimited attractive sites
Energy production	Natural permeability in the rocks	Unpredictable flow rates Uncertain energy production	Fully predictable flow rates and energy production
Seismicity	Small risk	High risk	No or very small risk
Asset Life Time	15-20 years	Approx 20 years	50 years +
Depths	1,000 - 3,000 meter	3,000 meter and beyond	3,000 meter and beyond
Temperatures	100 – 300 °C	100 – 250 °C	100 – 250 °C





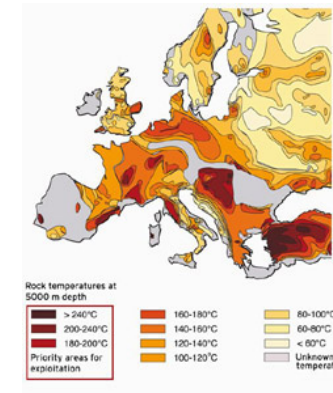
SHOW ANIMATION
8 min





Europe

- More than **125 000 km²** with favourable geological and thermal conditions.
- **6000 MW_{el}** at an investment cost of **€20 bn** to be installed by **2020**. (*The European Geothermal Energy Council*)
- Highly attractive **public financial support** schemes in Germany, Switzerland and the UK.

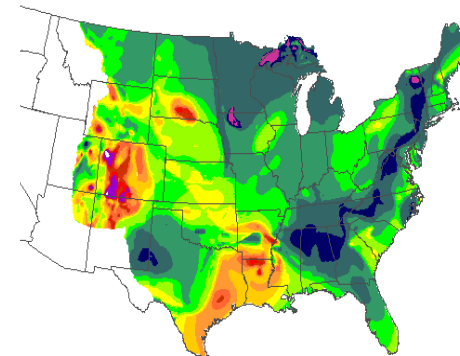


Rock temperatures at 5 km depth

USA

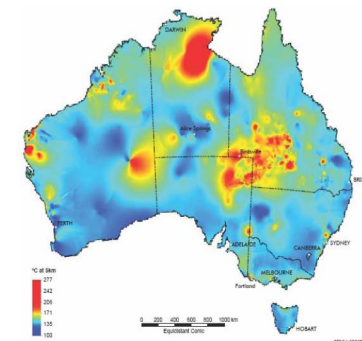
- **100,000 MW** of economically feasible capacity (*US DOE*)
- **USD 350 mill** in "Recovery Act Funding for Geothermal". (US Department of Energy – 27th May 2009)

Estimated Earth's Temperature at 4km depth



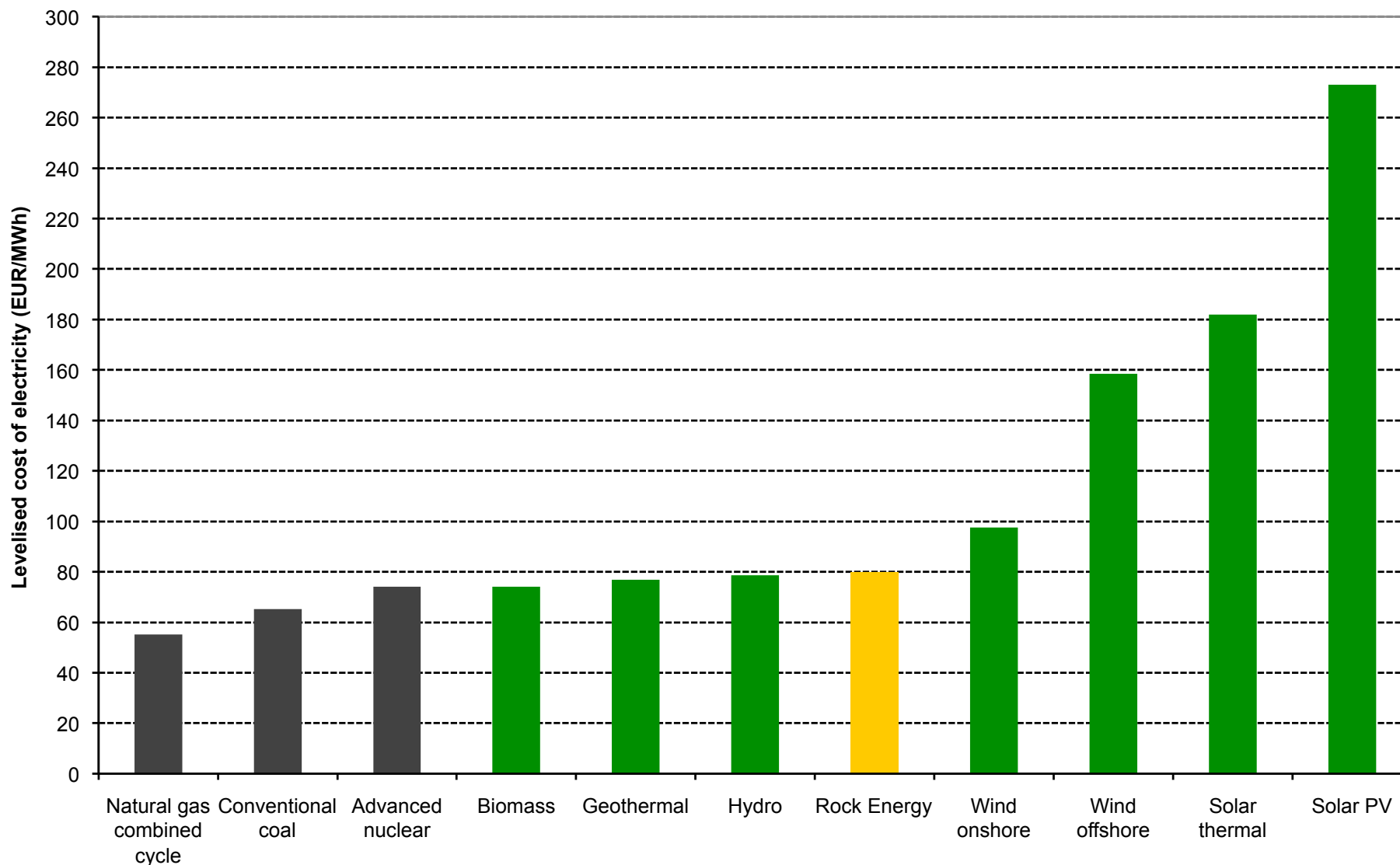
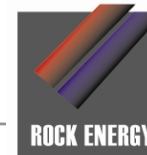
Australia

- **2,200MW_{el}** Cumulative installed capacity for a total of **AUD\$12 billion** by 2020.
- **€95 mill** issued in **public financial support** to Pertratherm and Geodynamics in 2009.

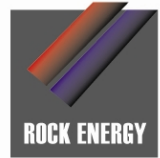


The Competitiveness - Electricity cost

ZERO 10 konferansen – 23.nov 2010



Source: U.S. EIA Annual Energy Outlook 2009 for LCOE other than Rock Energy



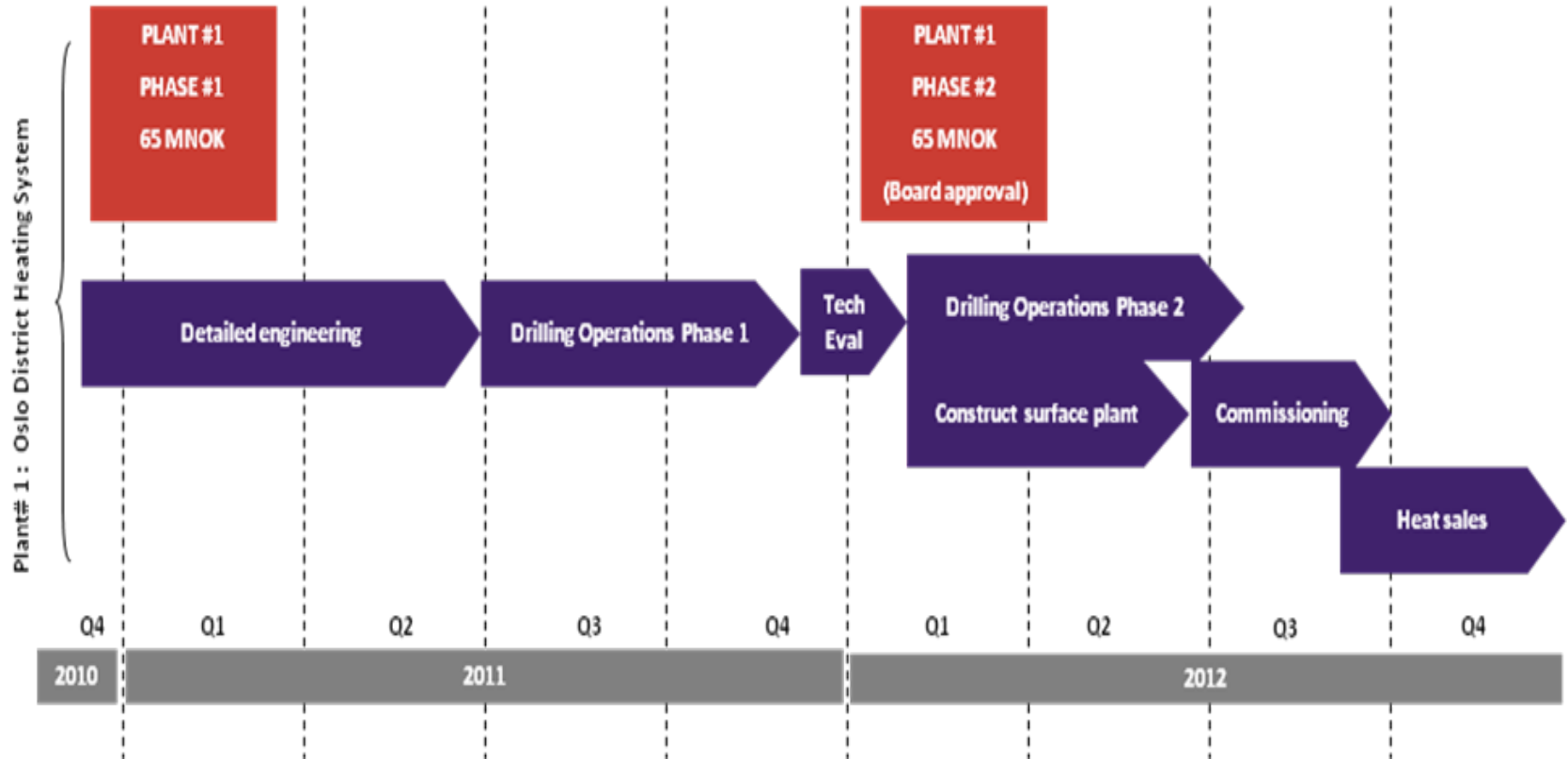
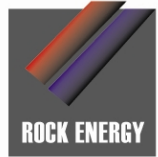
NORWAY

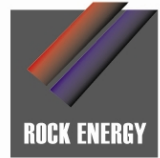
- 5 MW_{th} plant for heat delivery to Hafslund Fjernvarme – connected to Oslo District Heating System.
- Intention to increase capacity to 25 MW_{th}
- 20 year off-take contract with Hafslund Fjernvarme AS
 - Guaranteed access to district heating grid
- Enova grant MNOK 28,3 approved

INTERNATIONAL

- **Germany and UK** : Development of geothermal projects in RJVP with major German and UK based utilities
- **Poland**: Talks for project in Warsaw
- **Korea**: Feasibility study
- **Africa**: Talks for development of projects

Time line and cost – pilot plant Oslo



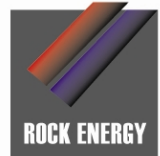


Press release 6th Oct 2009:

“ENOVA has promised Rock Energy public financial support of NOK 28,3 mill to the construction of Rock Energy pilot plant for deep geothermal heat production. Data from the project can initiate a new renewable energy production in Norway”

Conclusion:

NORWAY could take a leading international position in energy production from **deep geothermal energy sources** through our pole position within the **drilling, geoscience and energy systems**



Thank you for your attention

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