

Magma borehole promises unlimited energy

Scientists in Iceland plan to drill into a volcanic magma chamber in a \$25m bid to tap an unlimited clean energy supply, and potentially forecast future eruptions



ATLANTIC OCEAN

North American Plate

Eurasian Plate

Krafla volcano

ICELAND

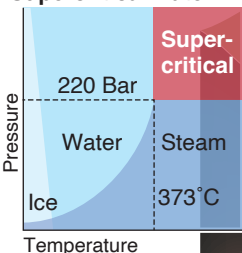
Reykjavik

Mid-Atlantic Ridge

Krafla located on fault line between tectonic plates. Drilling in 2009 accidentally hit magma chamber – confirming likelihood of eruption is low

SUPERCritical ENHANCED GEOTHERMAL SYSTEM

Supercritical water



At 373°C, 220 Bar pressure, water holds properties of both liquid and gas

Typical geothermal systems use natural water vapour at only 250°C to spin turbine

2.1km deep Magma chamber over 1,000°C

2009: Drilling aimed to find natural reservoir of supercritical water above large magma chamber at 4.5km deep

1 Cold water pumped into non-porous rock layers

2 Water heated as it flows through natural fractures

3 Supercritical water pumped to surface – powers turbines at double normal efficiency

Sources: New Scientist, Energy Monitor, Science

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