



**GEODYNAMICS**  
LIMITED

# Power from the Earth

## **HABANERO 3**

**Australia's first commercial hot rock geothermal well**

**Unveiled by Senator the Hon Nick Minchin, Minister for Finance and Administration  
Leader of the Government in the Senate**

**31st July, 2007**

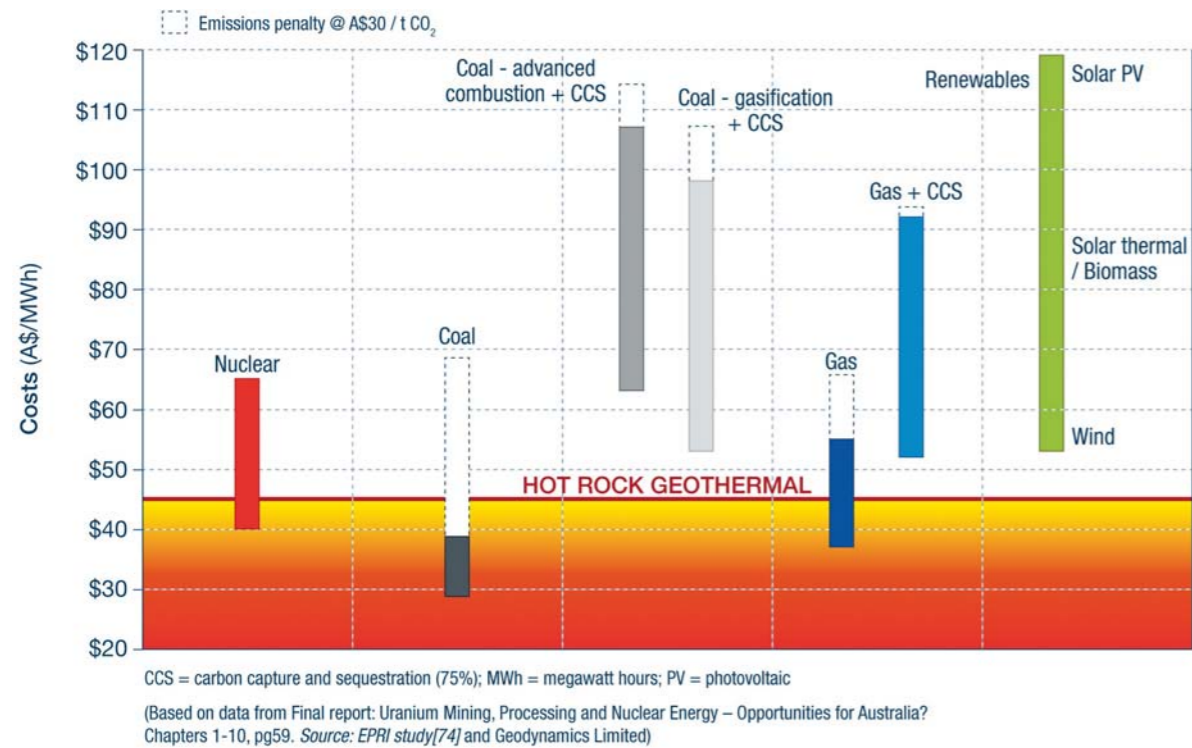


Lightning 1000K Rig purchased from LeTourneau Technologies (Australia)  
Drilled by Easternwell Drilling

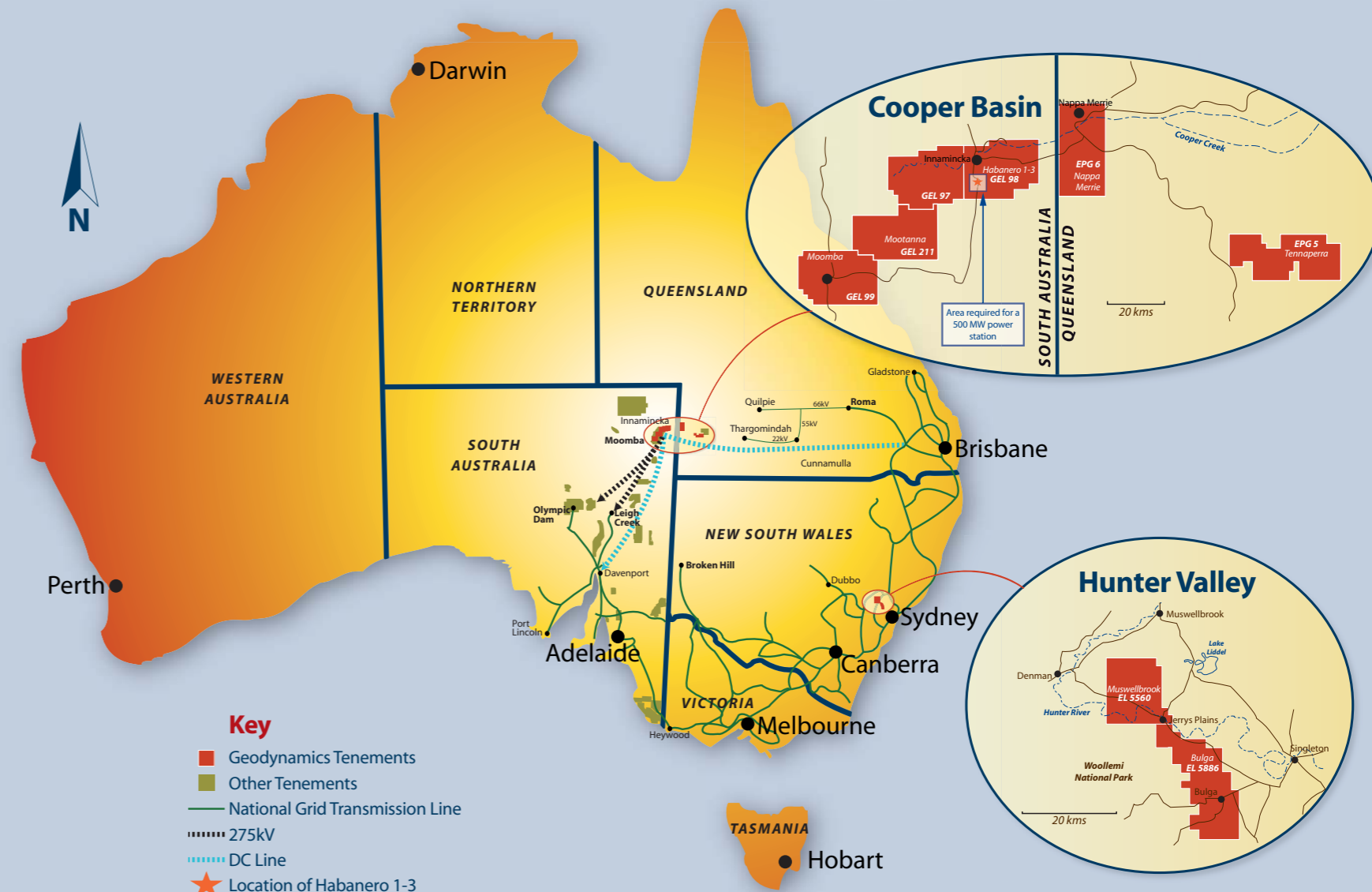
# Habanero 3

Australia's first commercial-scale Hot Fractured Rock (HFR) geothermal well

## Power from hot rocks will be cost competitive



## An exciting geothermal energy province is emerging

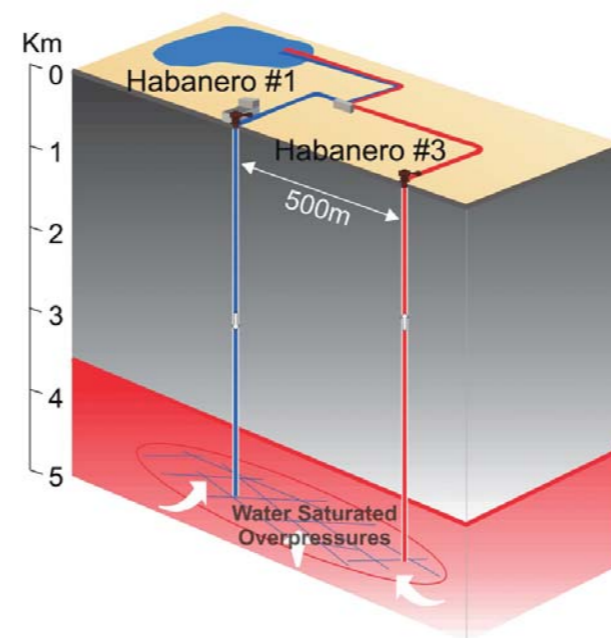


Once drilled, Habanero 3 will be incorporated into the country's first commercial-scale geothermal energy development, providing the platform for base-load, zero-emission power generation.

Geodynamics is planning a project capable of generating 500 MW by the end of 2015, with a first module of 40 MW in place by the end of 2010. It is expected the power will be delivered into South Australia.

A larger scale development will follow, delivering power into Queensland and South Australia, and potentially New South Wales.

Geodynamics has already delineated HFR geothermal resources capable of supporting production of more than 10,000 MW annually, comparable to the output of 15 Snowy Mountain hydroelectric schemes.



After drilling the well with one of the most advanced oil and gas rigs ever to operate in Australia, Geodynamics will run a circulation test between Habanero 1 and Habanero 3. This test is intended to:

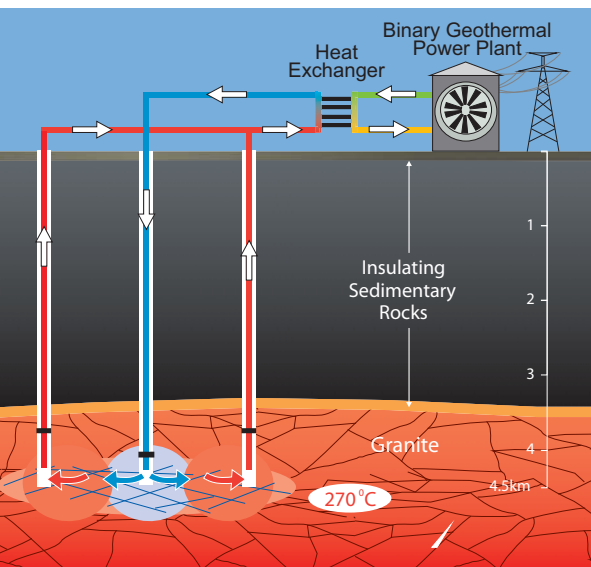
- Complete the "proof of concept" phase, and
- Provide the data required to declare Australia's first proven HFR geothermal reserves.

**Zero emissions**  
**Cost competitive**  
**Base load power**  
**No water consumption**  
**No legacy**

# Power from hot rocks

At temperatures up to 300°C, the granite rocks below the Cooper Basin are the hottest of their type on earth. Heated by a combination of radiogenic decay and insulating sedimentary rocks, the granites potentially contain vast amounts of emission-free, renewable energy.

To extract the stored heat, water existing naturally in the fractured granite is circulated in a closed loop. It arrives at the surface around 250°C under high pressure in the form of super hot liquid. The thermal energy from the liquid is exchanged into a second fluid which is once again directed back into a closed loop to drive electricity-generating turbines. The naturally-occurring ground water is circulated back through the fractured granite to extract more heat.



The temperature of the granite is anticipated to decline by only 40°C from an initial average of 270°C in the course of 50 years of operation. This affords the project a very long economic life.

#### Progress to date:

- Proven natural fractures, full of water under high pressure
- Confirmed granite temperature >250°C @ depth of 4,400m
- Demonstrated ability to stimulate horizontal reservoirs
- Established hydraulic connection
- Demonstrated extraction of geothermal heat
- Completed concept studies and demonstrated economics