

# Green Rock Energy Limited

Clean Earth Energy Conference

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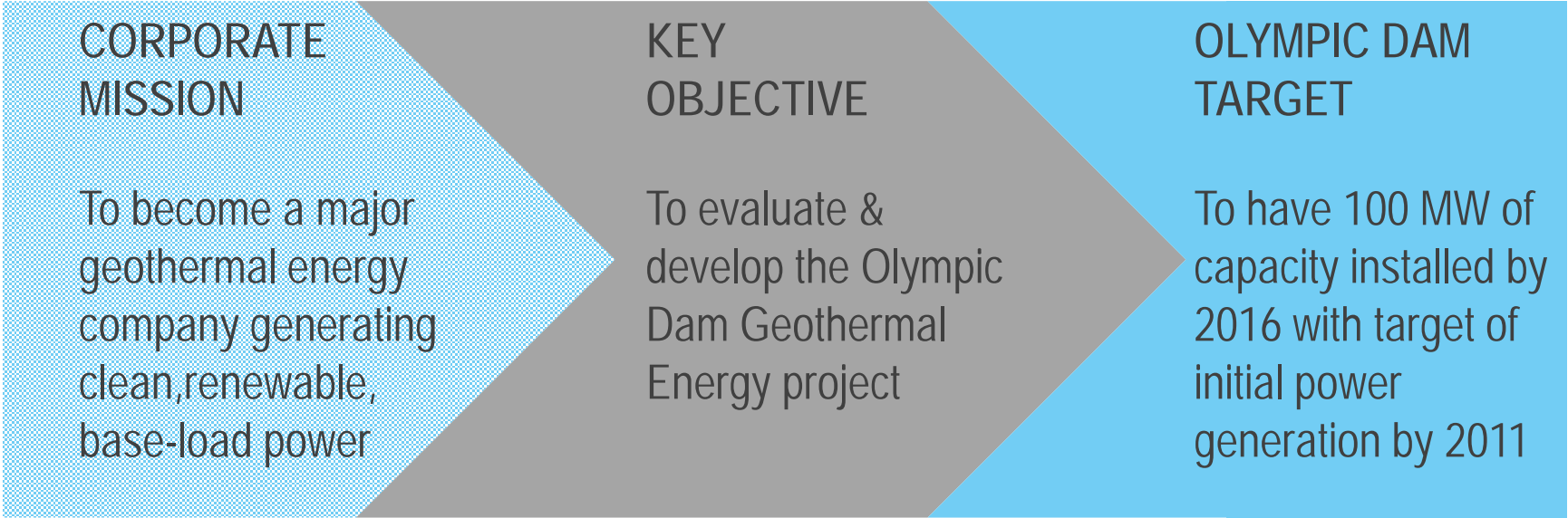
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- ▶ Geothermal Energy
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  - What should an investor consider ?
- ▶ Green Rock Energy
  - The project portfolio
  - Olympic Dam

# Corporate Overview

[www.greenrock.com.au](http://www.greenrock.com.au)

# Green Rock Energy : mission & objective



# Green Rock Energy : the assets



Asset	Capacity	Opportunity
Olympic Dam Project South Australia	Target capacity 400 MW+	The ideally located, commercially attractive, geothermal project
Patchawarra Project South Australia	Target capacity 100 MW+	Linked to a Cooper Basin power transmission line
Upper Spencer Gulf		Electricity production & water desalination
Hungary	Target capacity 100 MW+	Excellent resource, price & market access
Western Australia		Applications close 24 April 2008

# Green Rock Energy : capital structure



## Market Capitalisation

- A\$16 million

## Shares & Options

- 159 million shares
- 40 million options  
— 10¢ at 18 Apr 2008

## Shareholders

- 2,300
- Top 20 (34%)
- Directors (7%)

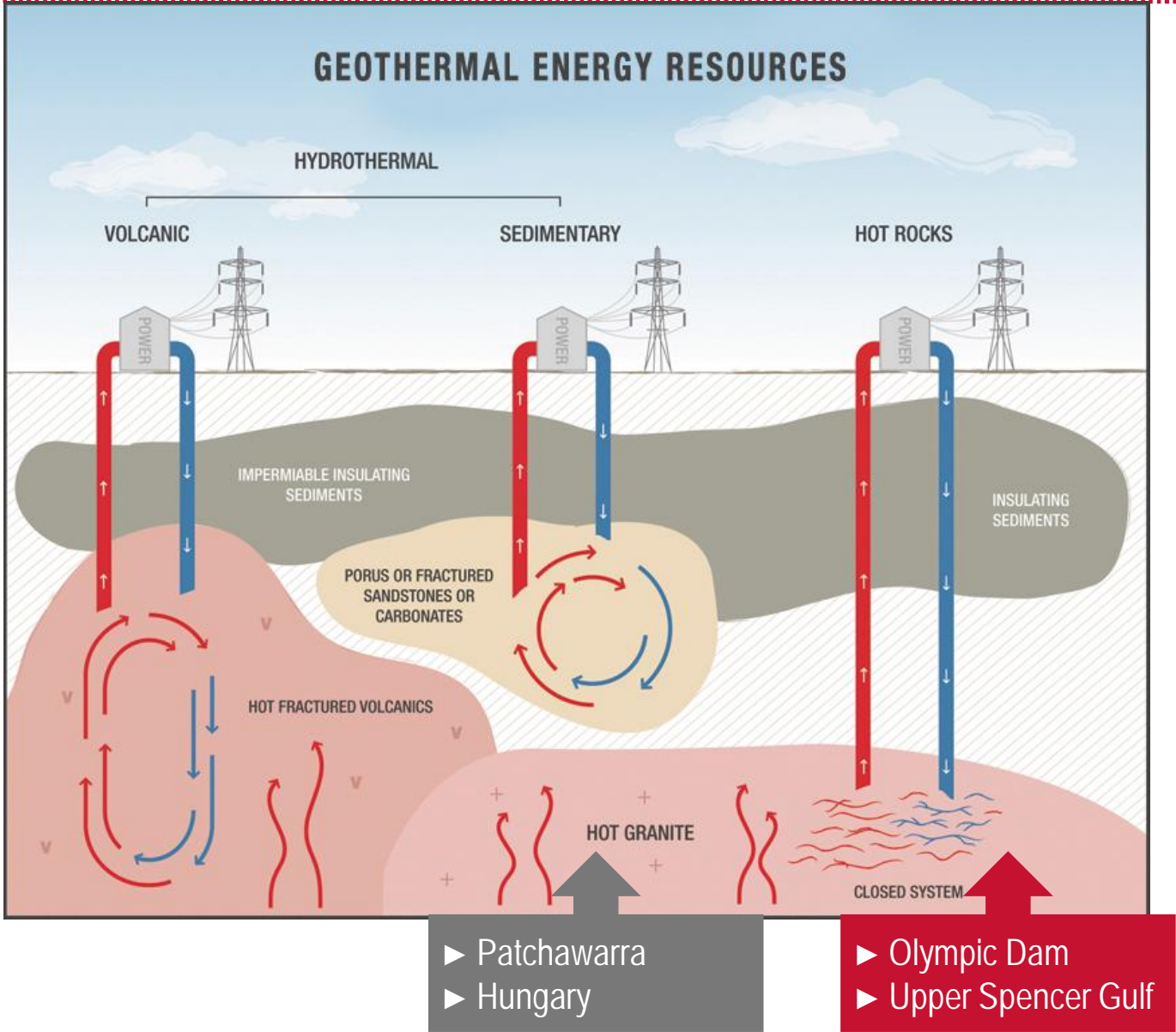
## Green Rock Energy Share Price



# Geothermal Energy

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# Resource types



# Why Geothermal Energy ?

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- ▶ Renewable base-load
- ▶ High availability >95%
- ▶ Zero carbon emissions
- ▶ Small footprint
- ▶ Environmentally and politically acceptable

# What should an investor consider ?

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- ▶ Net energy recovery
- ▶ Drilling costs
- ▶ Power plant
- ▶ Water requirements
- ▶ Distance to market
- ▶ Access to infrastructure
- ▶ Staged development

# What should an investor consider ?

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- ▶ Net energy recovery
- ▶ Drilling costs
- ▶ Power plant
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- ▶ Distance to market
- ▶ Access to infrastructure
- ▶ Staged development

▶ Temperature and Flow Rates  
(Quantity reduced by parasitic power -  
principally for pumping)

# What should an investor consider ?

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▶ Net energy recovery

▶ **Drilling costs**

▶ Power plant

▶ Water requirements

▶ Distance to market

▶ Access to infrastructure

▶ Staged development

- ▶ Depth and diameter of wells
- ▶ Geology
- ▶ Location

# What should an investor consider ?

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- ▶ Net energy recovery
- ▶ Drilling costs
- ▶ **Power plant**
- ▶ Water requirements
- ▶ Distance to market
- ▶ Access to infrastructure
- ▶ Staged development

- ▶ Binary “off the shelf”
  - Temps up to 200°C
  - Normal pressure regime

# What should an investor consider ?

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▶ Net energy recovery

▶ Drilling costs

▶ Power plant

▶ **Water requirements**

▶ Distance to market

▶ Access to infrastructure

▶ Staged development

- ▶ Hot dry rock system
  - initial reservoir fill
  - water losses
- ▶ Power plant
  - air or water cooled?

# What should an investor consider ?

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- ▶ Net energy recovery
- ▶ Drilling costs
- ▶ Power plant
- ▶ Water requirements
- ▶ **Distance to market**
- ▶ Access to infrastructure
- ▶ Staged development

- ▶ Transmission Line
  - approvals - time
  - cost - ~ \$0.5m/km
  - line losses – reduced revenue

# What should an investor consider ?

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- ▶ Net energy recovery
- ▶ Drilling costs
- ▶ Power plant
- ▶ Water requirements
- ▶ Distance to market
- ▶ Access to infrastructure
- ▶ Staged development

- ▶ Logistics
- ▶ Costs - Capital & Operating
- ▶ Workforce

# What should an investor consider ?

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- ▶ Net energy recovery
- ▶ Drilling costs
- ▶ Power plant
- ▶ Water requirements
- ▶ Distance to market
- ▶ Access to infrastructure
- ▶ **Staged development**

- ▶ Incremental development
  - 10 MWe to 50 MWe modules/increments
  - In step with drilling program
  - Market driven
  - Individual PPAs for each module / increment



# Project portfolio

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## Patchawarra Project (Cooper Basin, S.A.) – 100% owned

- ▶ Geologically prospective for hot geothermal water (hydrothermal)
- ▶ Prospective aquifers -in excess of 1.2km thick at depths of 3km
- ▶ Initial study indicates
  - permeable with good water flow potential
  - temperatures >140°C
- ▶ To be evaluated and developed in conjunction with the construction of an electricity distribution network connected to the Cooper Basin

## Upper Spencer Gulf, S.A. – 100% owned

- ▶ Geologically prospective for hot rock project
- ▶ Potential for both electricity production and water desalination

# Projects (continued)



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## Hungary – 33% interest

- ▶ Excellent resource
- ▶ Extensive geological database
- ▶ Strong partners (MOL and Enex)
- ▶ Supportive legislative regime
  - attractive feed in tariff pricing, €90/MWh (c.f. Australia: A\$60/MWh)
  - guaranteed access to market

## Western Australia

- ▶ Applications for geothermal exploration tenements close 24 April 2008
- ▶ Geologically prospective

# South Australian Projects



.....Patchawarra: potential linked to a Cooper Basin power transmission line

.....Upper Spencer Gulf: electricity production and sea water desalination

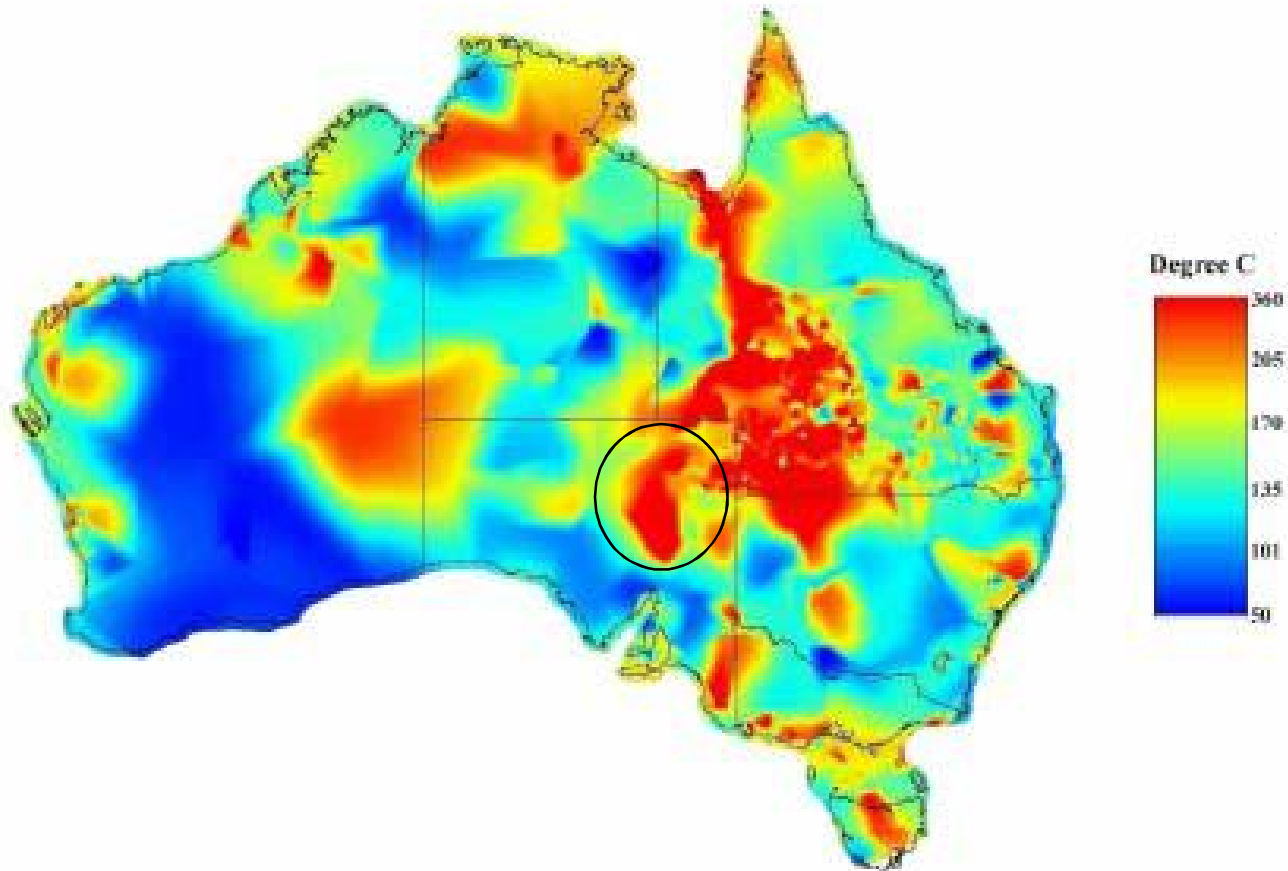
.....Olympic Dam: massive hot granite next to a major customer and national power grid



# Olympic Dam

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# Olympic Dam : the heat resource



# Olympic Dam : the location



## 100% owned by GRK

- 2,899 sq kms licence area
- Enormous energy potential



## Proximity to national grid & major customer

- minimal transmission costs
  - 5km to power grid
  - 20km to mine site



## Access to infrastructure

- airport, roads, engineering, labour force, medical, town services



## Access to water supply

- Mine waste water



## Enables staged development



# Olympic Dam : the project

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## Progress to date

- ▶ Blanche No 1 well drilled, cored & logged to 1,935 km
- ▶ Suitable temperatures in host granite – potential 170°C to 200°C at 5km
- ▶ In-situ stress analysis (CSIRO) – confirmed horizontal stress regime
- ▶ Well productivity capability (GeothermEx) – potential 5 to 7 MWe/well
- ▶ Hydro-fracture testing – confirmed expected operating pressures

## Objectives

- ▶ 400 MWe + of installed capacity
- ▶ \$60/MWh targeted unit power cost
- ▶ Incremental development

# Olympic Dam : the timeline

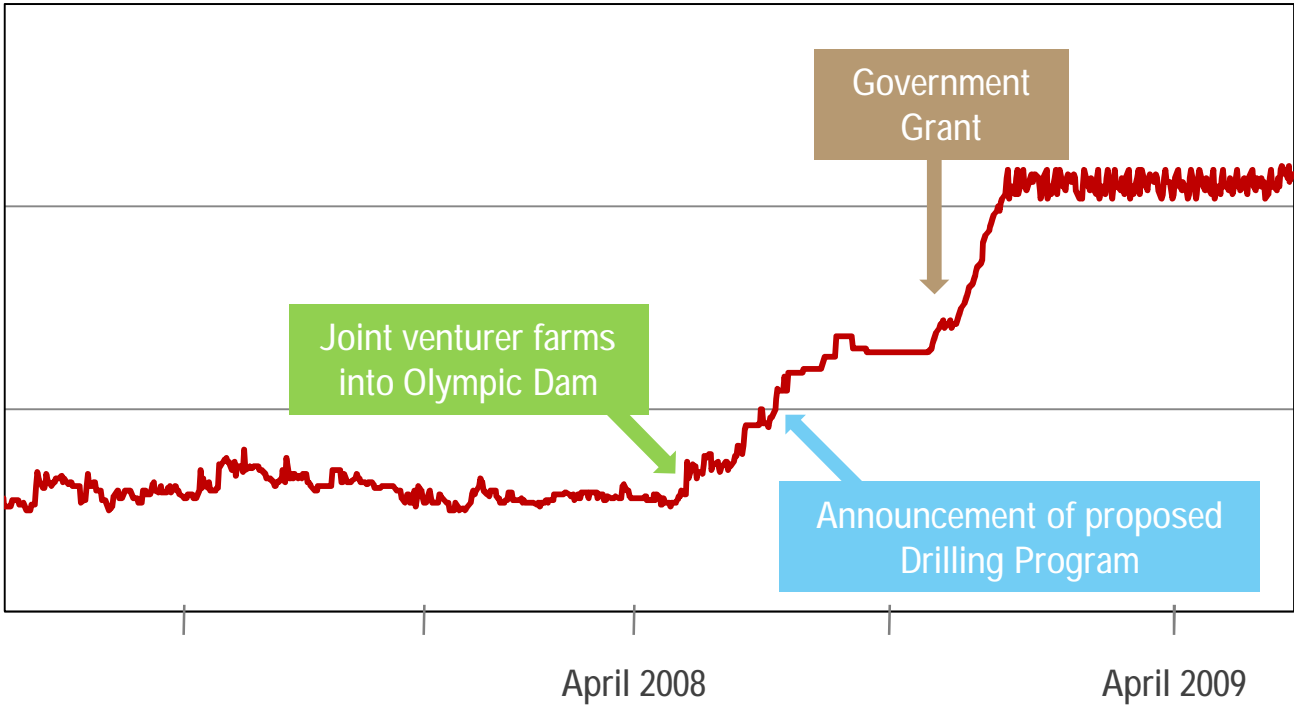


2008	2009	2010	2011	2014	2015	2016	2020
Joint Venturer farm-in	Drill 1 <sup>st</sup> & 2 <sup>nd</sup> evaluation wells	Order power plant (3-5 MWe)	Commission 3-5 MWe power plant	Commission 20 MWe power plant (cumulative 25 MWe)	Commission 25 MWe power plant (cumulative 50 MWe)	Commission 50 MWe power plant (cumulative 100 MWe)	Cumulative 400 MWe
Contract Drill Rig	Hydro-fracture & water circulation testing	Commence production drilling program					
Govt Grant	Complete Proof-of-Concept						

# Green Rock Energy ..... the future



Share Price



..... poised for re-rating

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