

**24 October 2008**

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**PETRATHERM LIMITED**  
**ABN 17 106 806 884**

## **CEDA 2008 Energy Overview Presentation Australia's Energy Future**

Petratherm's Managing Director, Mr. Terry Kallis, will present this morning at CEDA's 2008 Energy Overview forum being held at the Hyatt Regency Adelaide. CEDA's Australia's Energy Future forum will showcase leaders from across Australia's energy production, supply, and export sectors outlining their vision of Australia's energy future and the likely role that their sectors will play in delivering energy security for Australia.

The Federal Minister for Resources and Energy, the Hon Martin Ferguson MP, will provide the key address of the forum which will also hear from six invited speakers covering both current energy demands and meeting future energy requirements.

Mr Kallis' presentation will focus on meeting future energy needs and covers an overview of Petratherm, the renewable energy sector and the geothermal energy industry. The key points of the attached presentation are:

- Petratherm is uniquely positioned in the geothermal energy market and as a key leader within the industry is looking to a watershed year in 2009 with deep drilling to commence at Paralana.
- Global context for energy and renewables is characterized by an uncertain world-wide economy, increasing global energy costs and significant political and social pressure for reduction in greenhouse gases – that all combine to drive the need for low cost, large scale, base-load renewable energy.
- Renewable energy technologies (current and emerging) can provide a cost competitive alternative to current energy sources.
- McLennan Magasanik Associates Report for the Australian Geothermal Energy Association has confirmed that geothermal energy is capable of providing up to 2,200 MW of base-load capacity by 2020 at competitive prices ranging between \$120/MWh at small scale (up to 50MW) to \$80/MWh at larger scale (300MW or greater).
- South Australia is best positioned to be a national leader in renewable energy supply for Australia.

Yours faithfully

**Terry Kallis**  
Managing Director

### **MEDIA CONTACTS:**

|                  |                         |              |
|------------------|-------------------------|--------------|
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CEDA – Energy Overview 2008  
**Australia's Energy Future**  
**Meeting future energy requirements**

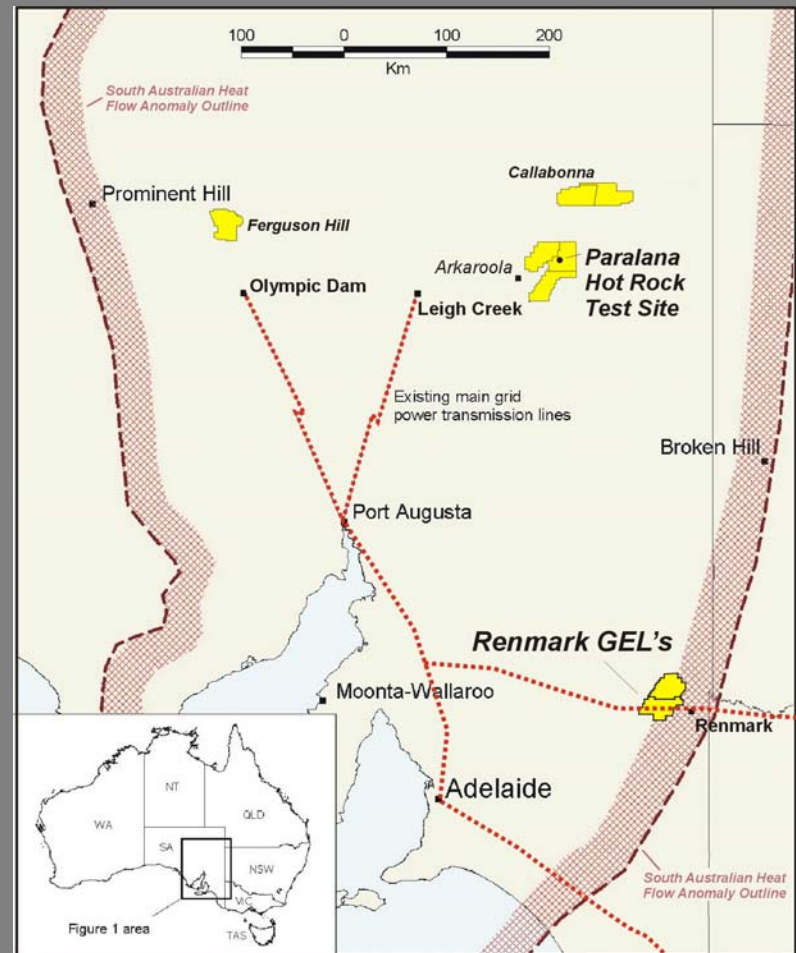
Terry Kallis  
Managing Director, Petratherm Limited  
Hyatt Regency Adelaide, October 2008

***Explorer and Developer of Geothermal Energy***

# ***Petratherm Limited***

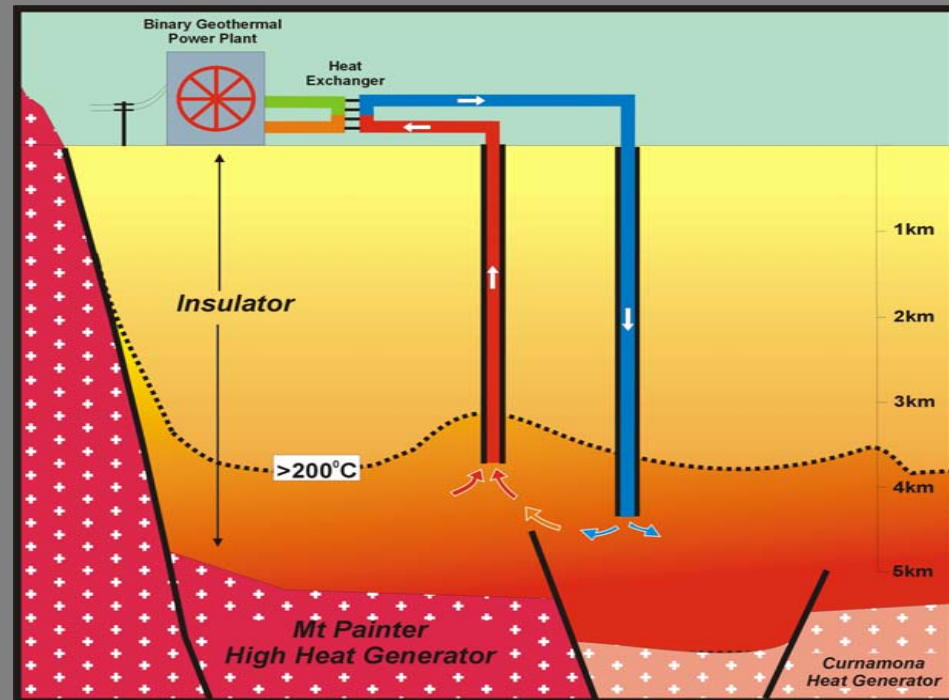
## ***Geothermal Energy Explorer & Developer***

- *MEP major shareholder 34%*
- *Market Cap \$21 M, current price \$0.35 with 58 M shares on issue, cash \$4M*
- *Four Australian projects in SA*
- *Seven Spanish projects*
- *Exclusive agreement to identify projects in China*
- *Flagship Paralana Project*
  - *Up to \$30M JV with Beach Petroleum*
  - *Up to \$57M JV with TRUenergy*
  - *Federal grant of \$5M*
  - *MOU with Heathgate Resources to supply power*
  - *Next step drilling 4 km deep wells*



# Project Portfolio

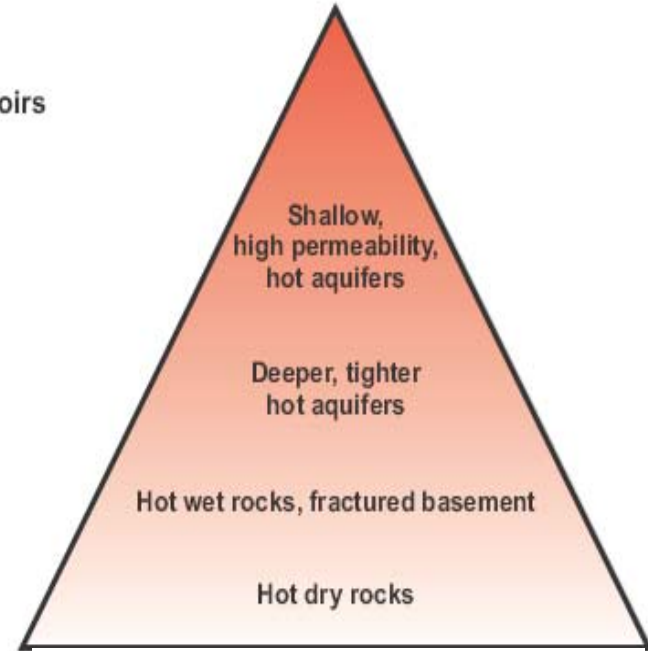
- *International Geothermal Explorer and Developer*
- *Specialist Heat Explorer*
- *EGS, Conventional and Direct Heat*
- *Strategy – shallow hot rocks close to market & chance of flow!*
- *HEWI Model – heat exchanger within insulator model*



Conventional reservoirs

Improved technology  
↓

Unconventional



Engineered Geothermal Systems (EGS)

West

Paralana 1B

Paralana 2

East

# Paralana Project

Tertiary and Mesozoic

Cambrian

Adelaidean

Adelaidean

Adelaidean

Basement

109°C

1807m

4000m

- Heat flow of 128 mWm<sup>-2</sup>

- Modeled 200°C at 3.6km



0

3km

(Seismic Line 84 SPG)

# ***Petratherm Key Points of Differentiation***

- Unique approach to “exploration for heat” and its commercial assessment of projects - “location, location, location” – resource, market, permits/stakeholders
- HEWI model approach to resource exploitation process for EGS/hot rock that aims reduce costs and risks – also reducing the time for delivery
- Flagship Paralana Project, clear commercial and competitive advantages with a willing potential customer at “off grid” prices and a realistic, long term and unique path to commercialization and two quality, complementary JV partners
- Quality portfolio of 11 projects across geothermal technologies – EGS, District Heating and Volcanic sources – electricity and heat – Australia and Overseas (Spain & China)
- Clear business model – aimed at introducing quality JV partners coupled with a strongly skilled Board, Management team and consultants - track record of successfully delivering projects

# ***Petratherm Key Achievements 2007/2008***

- TRUenergy JV for up to \$57 M for 30% of Paralana Project (plus share of equity costs) – to complement existing up to \$30 M JV for 36% with Beach Petroleum - first \$10.5 million per well will be funded by JV and REDI grant
- Secured 2000 HP Drilling Rig from Weatherford International – Le Tourneau “ Lightning” rig - plan to spud Paralana deep well in May 2009.
- Major studies and surveys completed – reflection seismic, magneto-telluric survey, passive seismic array – determined location of Paralana 2 well.
- Spanish projects portfolio expanded from 2 to 7– EGS, District Heating and Volcanic sources – electricity and heat – Madrid district heating project shows very attractive returns - plan for financial close and JV partner(s) in early 2009
- China project exploration commenced with exclusive deal with four Chinese government institutions – plan for projects and JVs to be secured in early 2009 – very attractive economics in the world’s largest growing market
- ***Expect 2009 to be a watershed year for the Company with Paralana deep drilling, Madrid district heating to proceed and China projects secured***

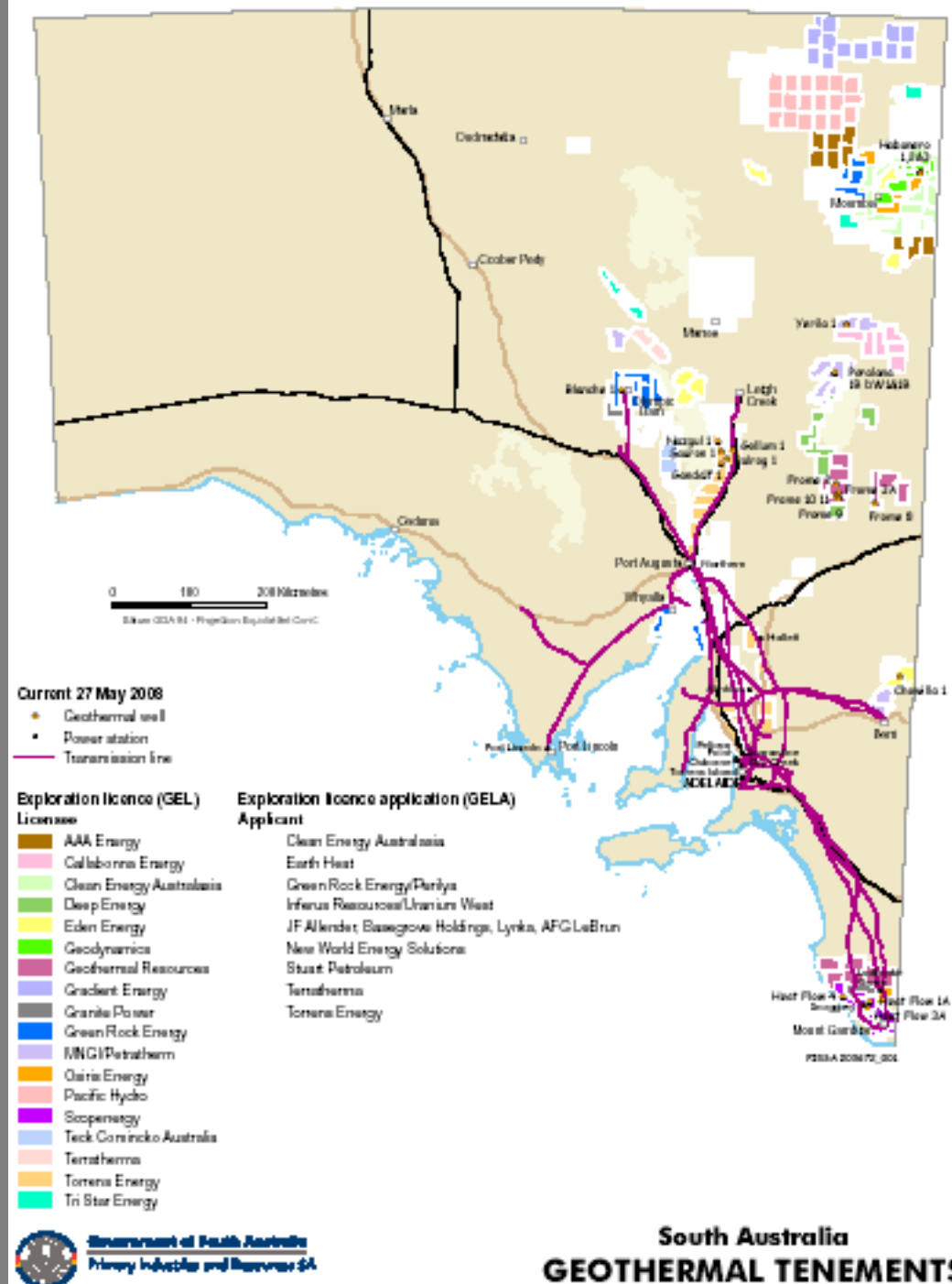
# ***Global Context for Energy & Renewables***

## ***(extract PTR Business Plan 2007)***

- Operating in an uncertain global economy and with more volatile financial markets - European economies expected to slow, Asian economies to continue to grow strongly, Australian economy to remain strong but weakness (recession?) in the US economy
- Increasing cost of energy/power globally, combination of increased electricity demand, increasing cost of fuel and water, pressure on manufacturers and providers of raw materials (developing and developed countries)
- Global political and social pressure to implement major greenhouse gas reduction and renewable energy programs, Europe underway, Australia about to expand, parts of Asia moving and more expected from the US
- The above issues will combine to drive toward the need for low cost, large scale (preferably base load) renewable/low emission technology - geothermal, solar, wind and in some countries nuclear and gas

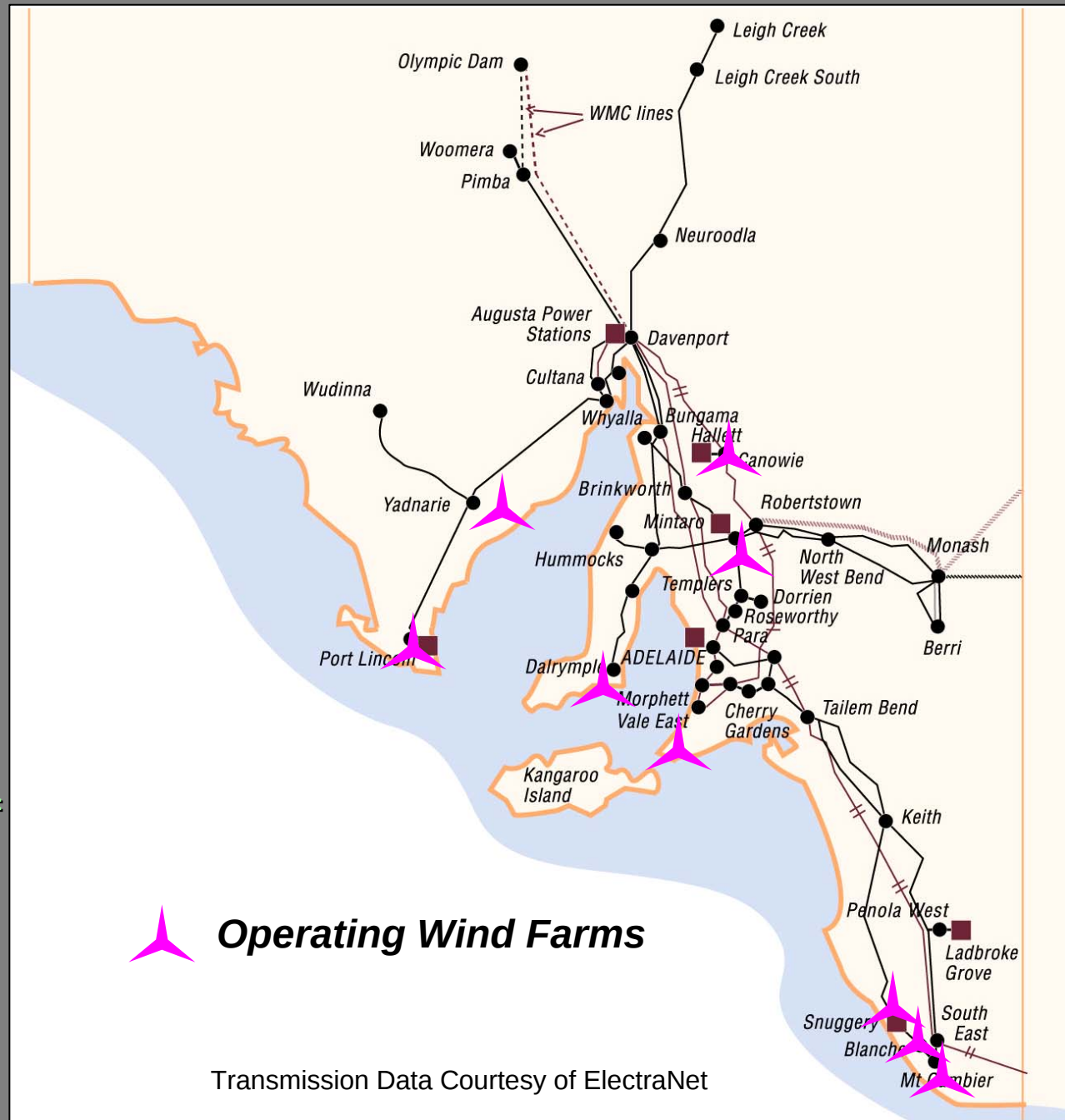
# SA Geothermal Projects

- Many players – 33 Companies, 10 ASX listed
- 277 GELs mostly in SA – PACE grants
- Very large resources
- Exploiting different geothermal resources mainly Hot Rock but also “Hot Water”



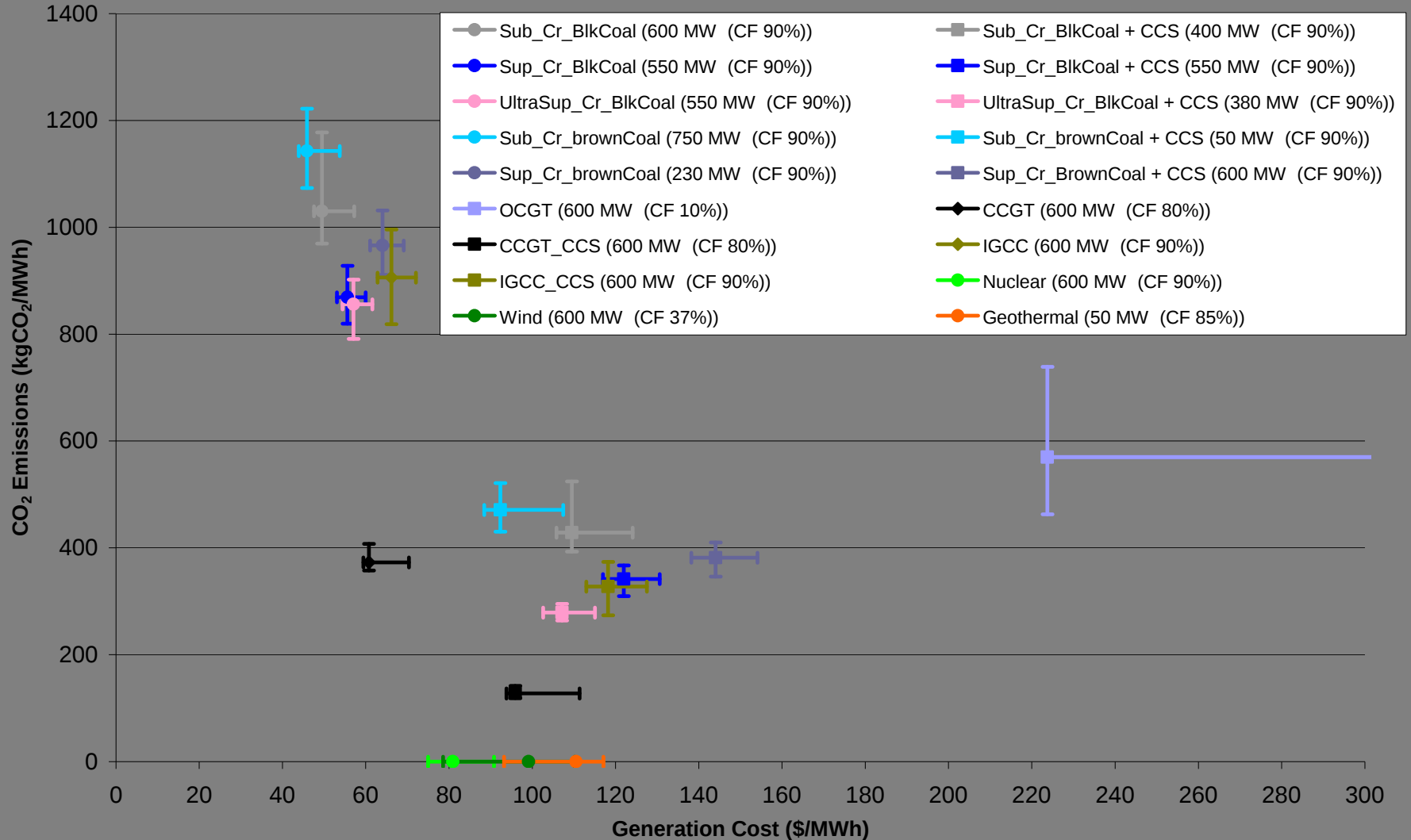
# SA Wind Farms

- 19 active wind projects
- 335 MW operating
- 340 MW under construction
- 600 MW to 700 MW under consideration, mainly mid north
- Highest penetration of all Australian states and internationally high percentage



# Long Run Costs of Australian Energy Technologies

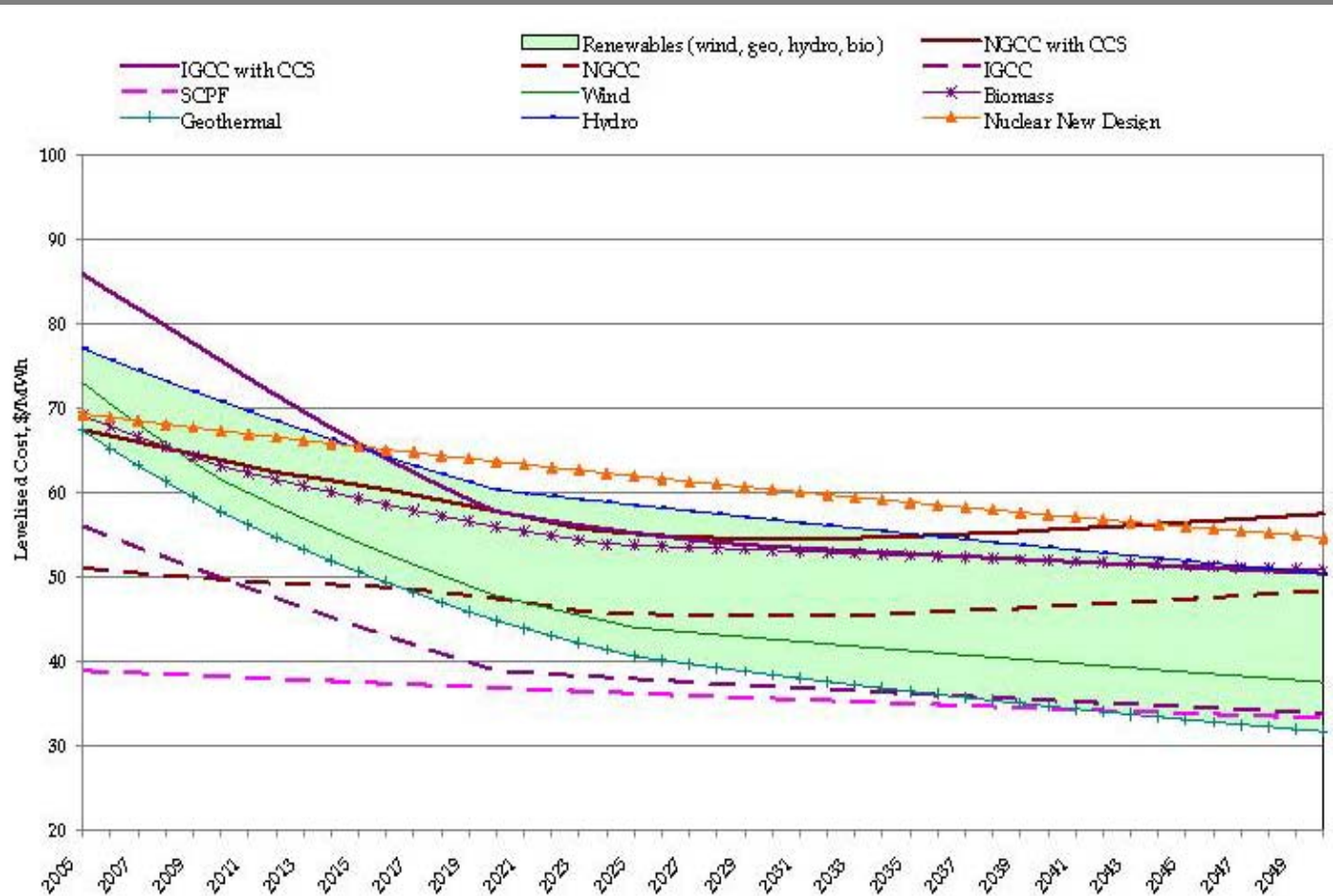
## ESIPC Annual Planning Report 2008



# Long Run Costs of Renewable Energy Technologies

Advantages of Geothermal Energy include:

- Large scale base load
- Large resources and reserves
- Expected to be lowest cost renewable energy source



Extract from **McLennan Magasanik Associates Independent Report 2007** "Renewable Energy – A Contribution to Australia's Environmental and Economic Sustainability".

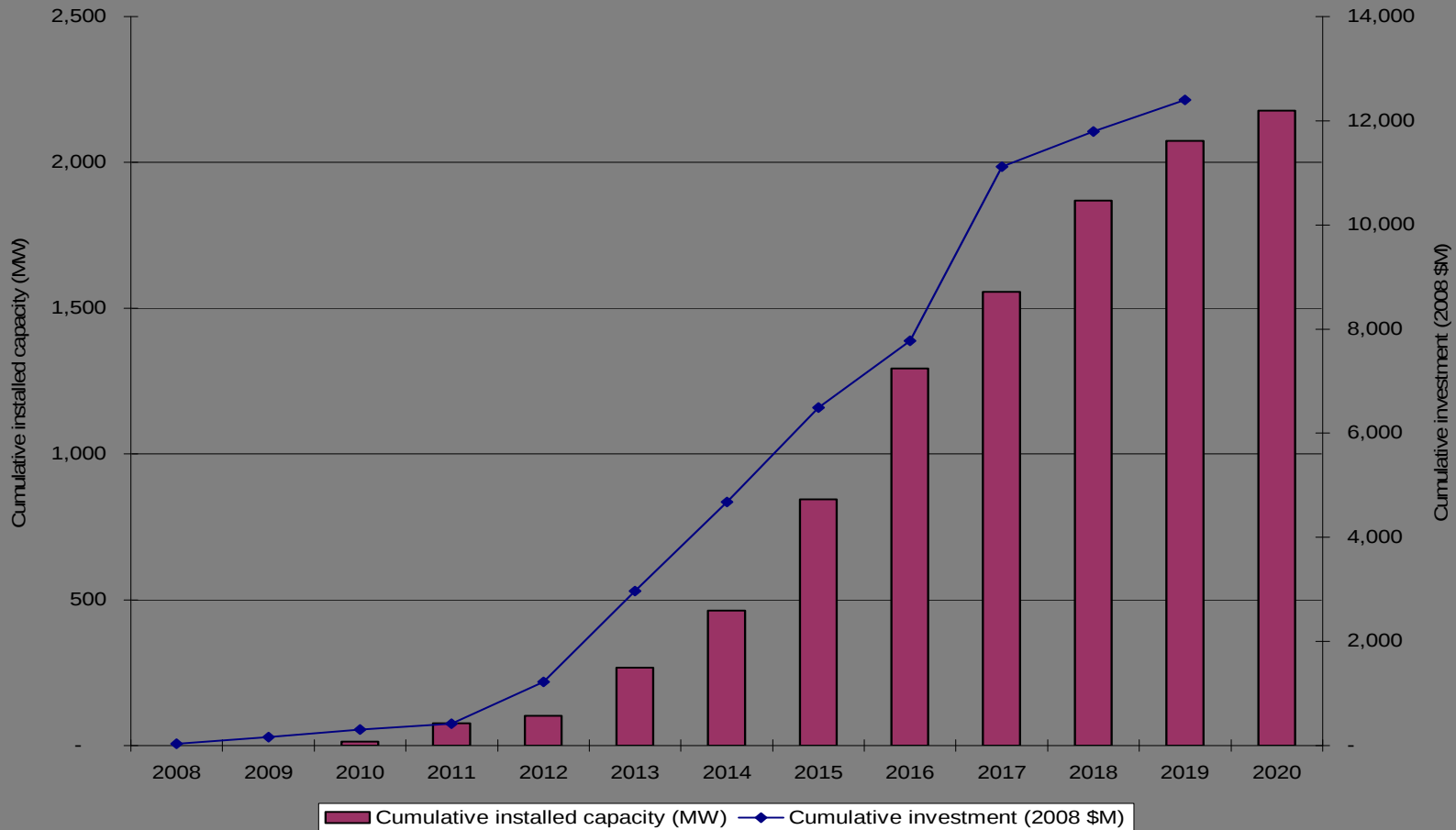
Total renewable cost envelope v's coal, gas and nuclear cost.

# ***MMA Report on Geothermal - Findings***

- Australian Geothermal Energy Industry can be expected to **provide up to 2,200 MWs of base-load capacity by 2020** into National Electricity Market;
- Represents up to **40% of the Federal Government's 2020 Renewable Energy target of 45,000 GWh** - the equivalent of the output of around 6,000 MW of wind farms;
- An estimated **\$12 billion would be invested to develop 2,200 MW** of installed capacity;
- The cost of generating electricity from geothermal resources is expected to move rapidly down the cost curve through to 2020 commencing from around **\$120 /MWh at small scale (10 MW to 50 MW) and decreasing to around \$80/MWh at large scale (300 MW or greater) by 2020; and**
- Most of the capacity is expected to come from developments in SA - other states increasing their contribution toward by 2020

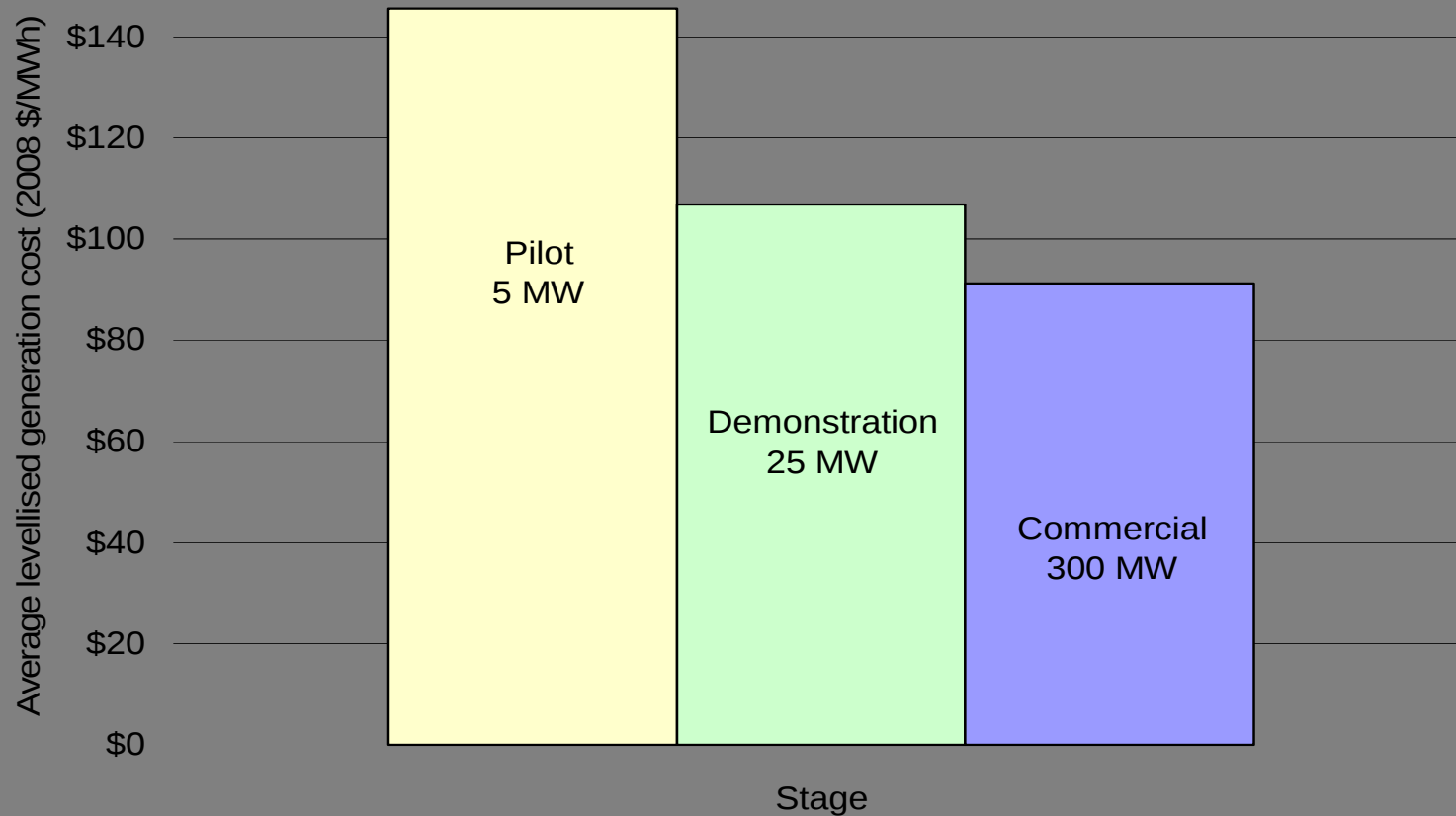
# ***MMA Report - Geothermal Generation Potential***

## ***Investment Profile***



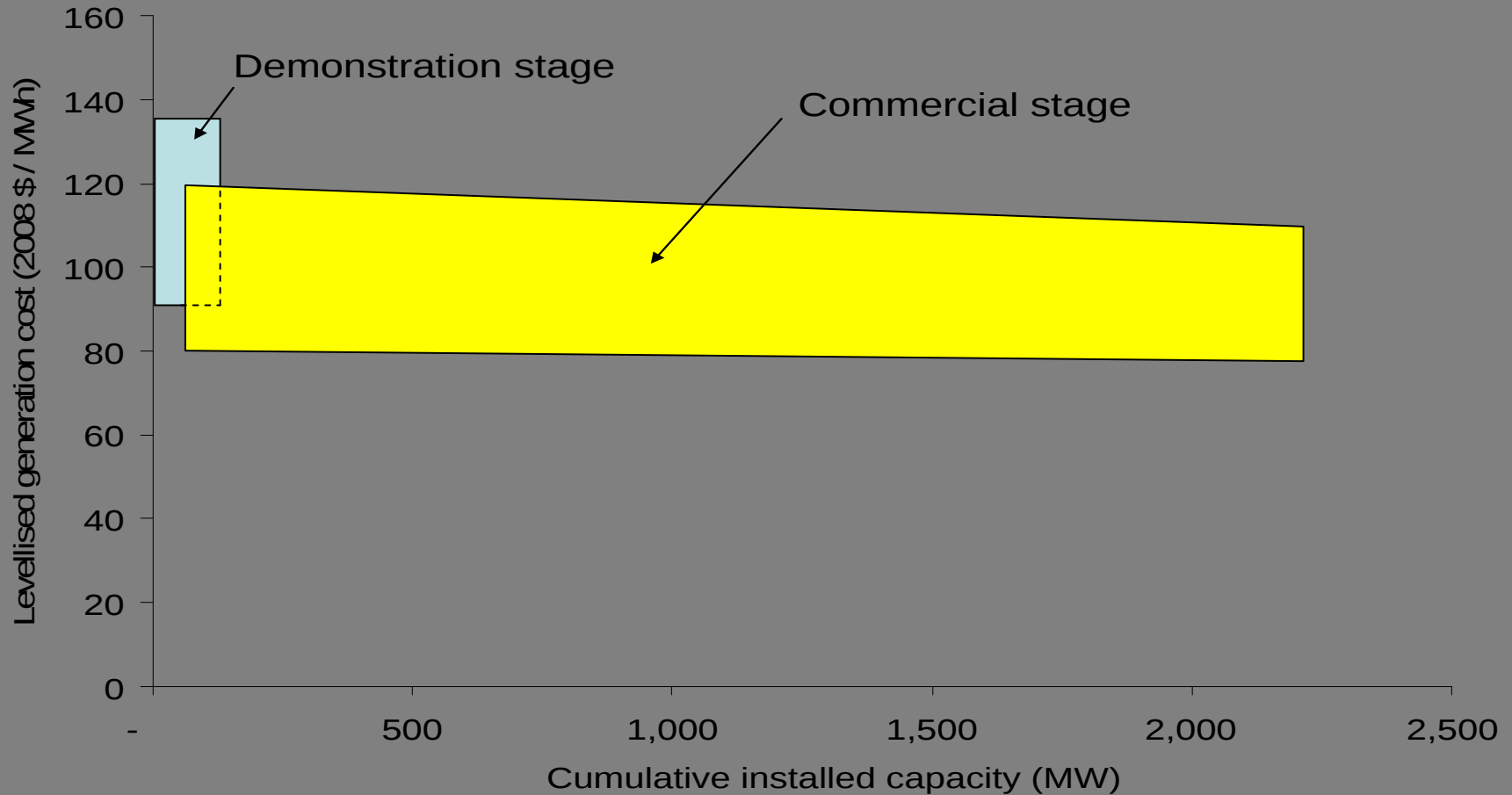
# ***MMA Report - Geothermal Generation Potential***

## ***Scale and Production Cost***



# ***MMA Report - Geothermal Generation Potential***

## ***Scale and Production Costs***



# ***Opportunities for Australian Renewable Energy***

- Government 20% Renewables by 2020 – 45,000 GWh
- Emissions Trading Scheme by 2011 and revised Mandatory Renewable Energy Target (carbon pricing and RECs - combination)
- Wind will feature strongly but emerging technologies will play an increasing role with government support
- Australia is naturally endowed with excellent solar and geothermal resource – service mining and rural sectors
- CEC estimates \$20 billion in investment and 50,000 jobs to be created in the renewables sector to 2020
- South Australia best positioned to be national leader in renewable energy supply for Australia

# Threats to Australian Renewable Energy



Source: The Advertiser

*Thank You*



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