

# A LOW EMISSION FUTURE FOR BROWN COAL

Mr Gerry Morvell  
Chairman of Board

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Group on Energy and Minerals Consultations9 11 March 2011  
Melbourne, Australia***

## BCIA business model

- Strategic management of investment in research and development underpins our innovation support and operational activities.
- Mission: *To invest proactively in the development of technologies and people that broadens the use of brown coal for a sustainable future*
- Our **vision** for the impact of our activities and investments in skills development, technology development and networking/linkages is that they are *positioning brown coal for a brighter future.*

## What we have done so far

- Appointed a full time CEO - Dr Phil Gurney
- Appointed a full time Research Investment Manager
- Funding Agreement with Victorian Government
- Funding agreement with ANLEC R&D – Brown Coal Node
- Offered five PhD Research Scholarships
- Finalised the 2010 Funding Round for R&D projects
- Co-funded the Novel Storage Taskforce with GCCSI and ANLEC R&D
- Joined the CO2CRC as a full Member

## What we have done so far

- Committed ≈\$2 million over the next four years to two BCIA Research Leader Fellowships
  - Prof Alan Chaffee, Monash University
    - *New markets and greener approaches for brown coal use*
  - Prof Klaus Hein, HRL Technology – Monash University joint appointment
    - *Enhancement of Victoria's low emissions coal technology skills base through R&D, education, mentoring and industrial and international collaboration*

## What we have done so far

- Committed up to ≈\$1.67 million to the extension of five ETIS brown coal R&D projects

Pre Combustion - CO2CRC	Extended to 28 Jan 2011
Post Combustion - LY Power	Extended to 31 Mar 2011
Advanced Materials - HRL	Extended to 28 Feb 2012
Adv Gasification - Monash	Extended to 31 Dec 2010
Oxy Fuel - Monash	Extended to 31 Dec 2011

## Research Investment Objectives

- To advance and accelerate innovative technologies in Australia by supporting focused, collaborative research in high priority technologies;
- To retain local expertise in, and attract international expertise to, Australia in brown coal-related technologies;
- To support growth in skills and capacity in Australian brown coal-related technologies for the domestic and international markets; and
- To make the results of that research available, as appropriate and respecting intellectual property protection, to BCIA's funders and to the Australian public.

## Key R&D project areas

- Low cost, low emissions power generation from brown coal;
- Low emission production of chemicals, fuels and processed metals from brown coal; and
- Novel, high-value products derived from brown coal.
  - we cover technologies anywhere in the value chain from mine-mouth to the point of carbon captured and ready to be transported, including use of by-products

## Key R&D focus areas

- ‘Cost reduction’ projects must make a significant contribution to the following targets:
  - \$100/200/2020 – a levelised production cost target for electricity generation from brown coal of \$100 per MWh (sent out) at a CO<sub>2</sub> emission level of not more than 200 kg per MWh in commercial-scale demonstration by 2020.
  - 50%/100/2020 – a levelised production cost target for non-power generation products derived from brown coal (including novel, high-value products) that is at least 50% lower than those from conventional sources at a CO<sub>2</sub> emission level of not more than 100 kg per MWh in commercial-scale demonstration by 2020.



## Intellectual property ownership

- BCIA will ***not*** take any ownership position in intellectual property arising from the project
- BCIA may, on a case by case basis, negotiate with project proponents a return on its research investment
  - Any such return would be based on a small share of the commercial return to the owners of the IP / technology
  - Any such return would be capped

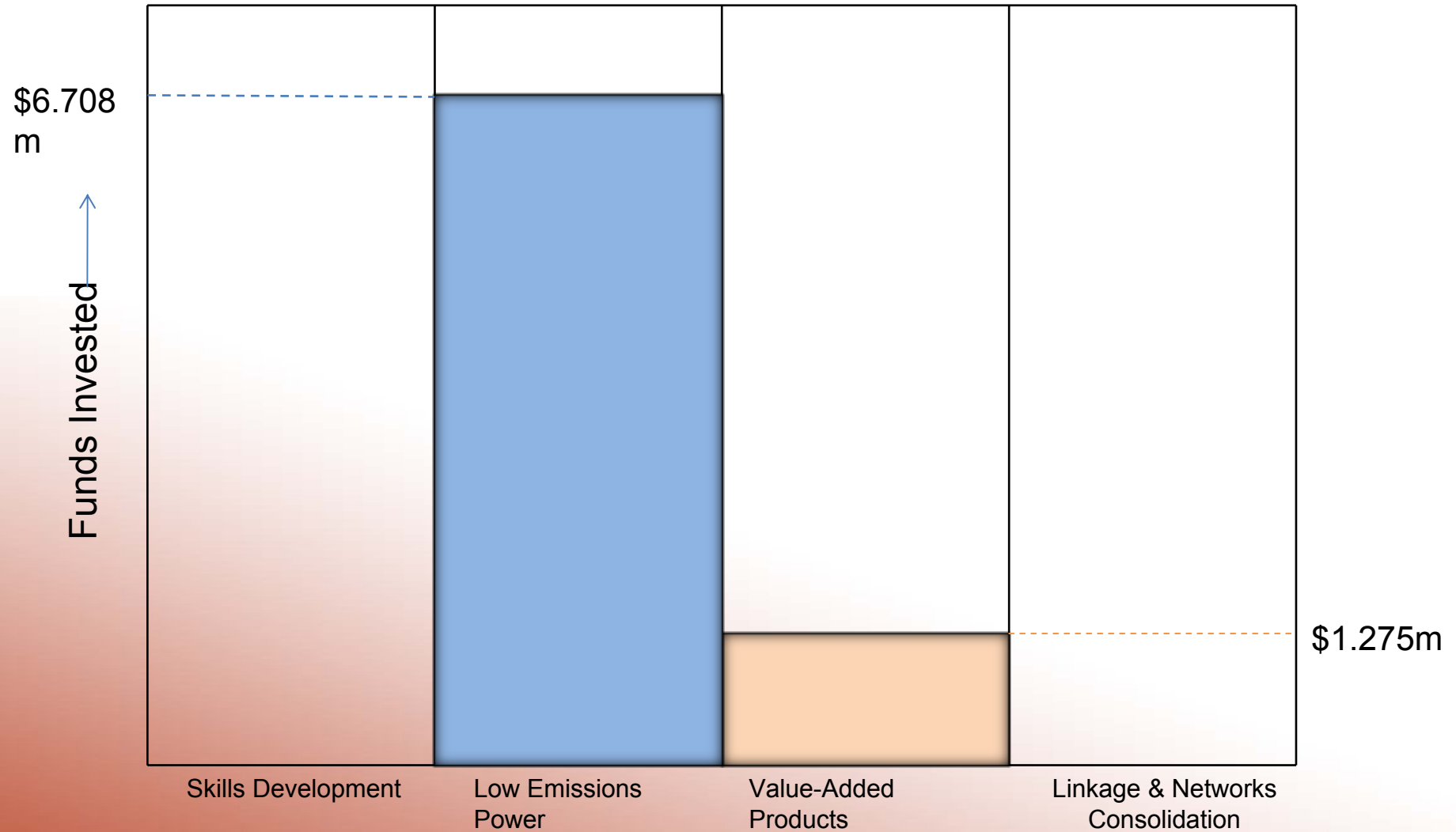
## Investment - Lenses

- The link to BCIA's strategy for its investments
- Competitive impact
- Risk-reward balance
- Time to demonstration/commercialisation
- Familiarity of markets and technologies
- Contribution to the 1:1:1 (State-Commonwealth-Industry)

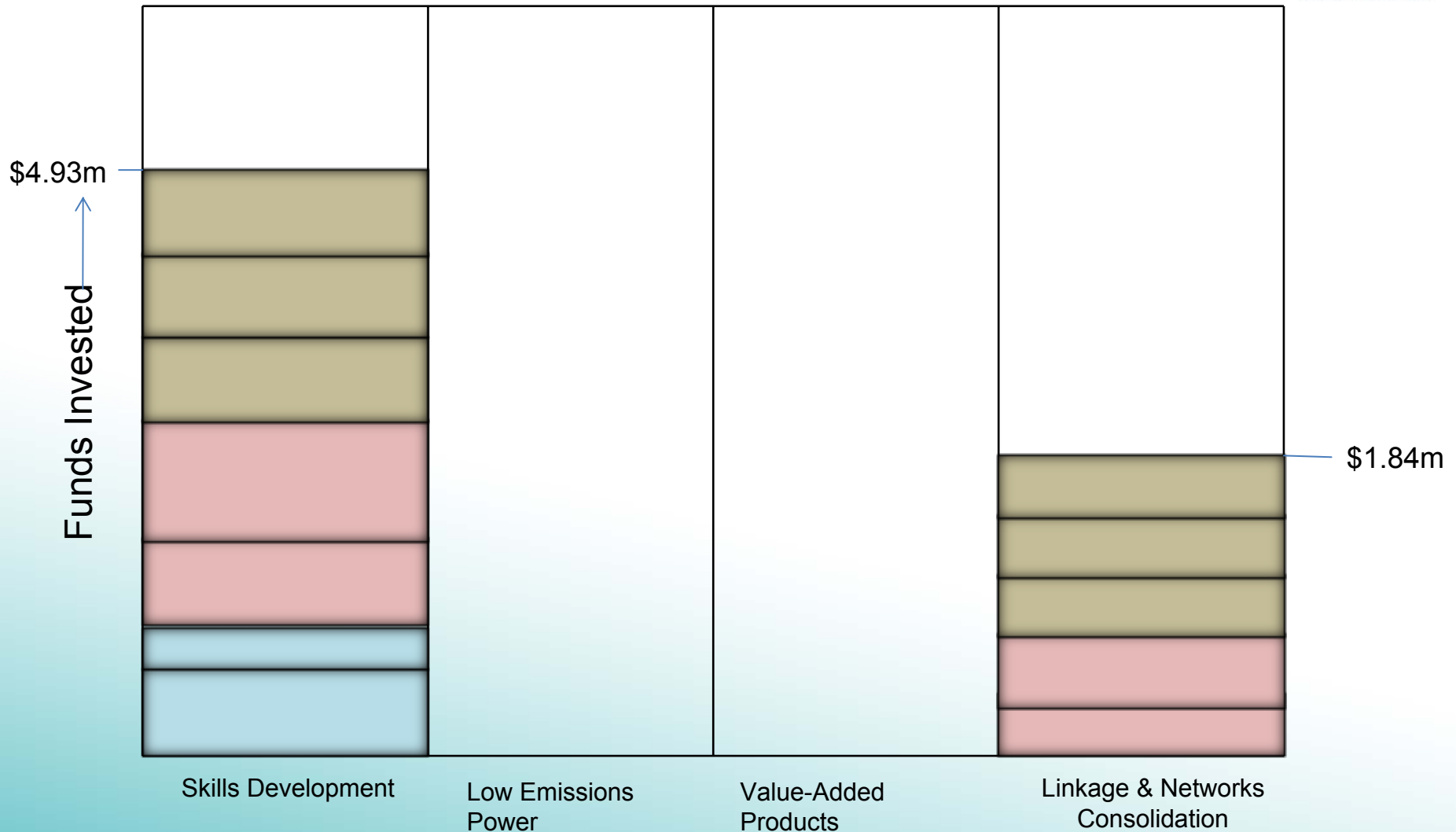
## Competitive impact

- **Base R&D** – necessary but widespread and shared, and offering little potential for competitive advantage for the firm.
  - Often known as ‘tactical’ or ‘incremental’ R&D
- **Key R&D** – embodied in current proprietary products and processes, yields competitive advantage and differentiation and such R&D is most critical to competitive success.
- **Pacing R&D** – not yet embodied in a process or product, such R&D has the potential to change the whole basis for competition in a sector.
- **Embryonic R&D** – new science with high uncertainty but with the possibility of serendipitous outcomes.

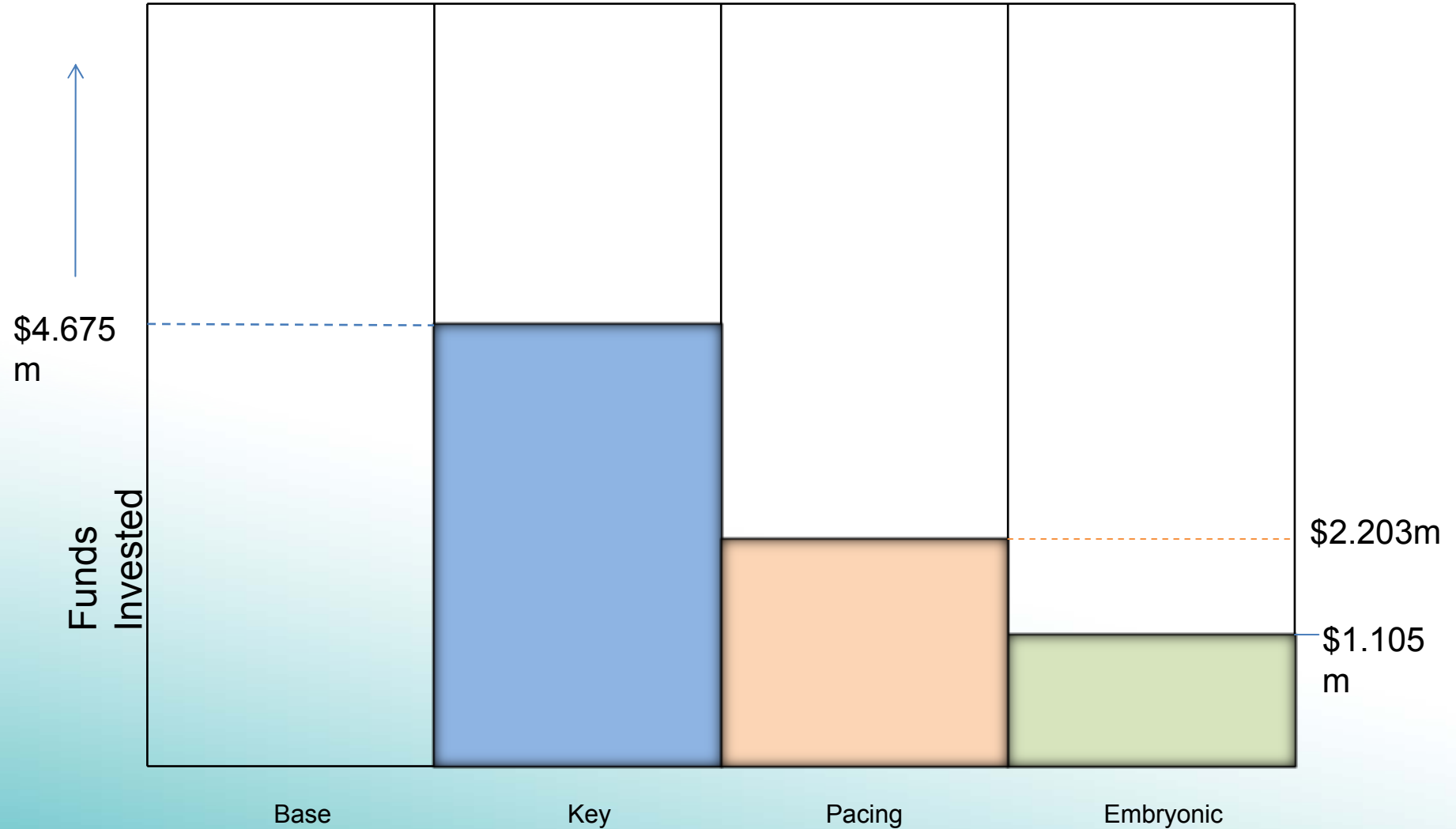
# Link to BCIA Strategy – 2010 Projects



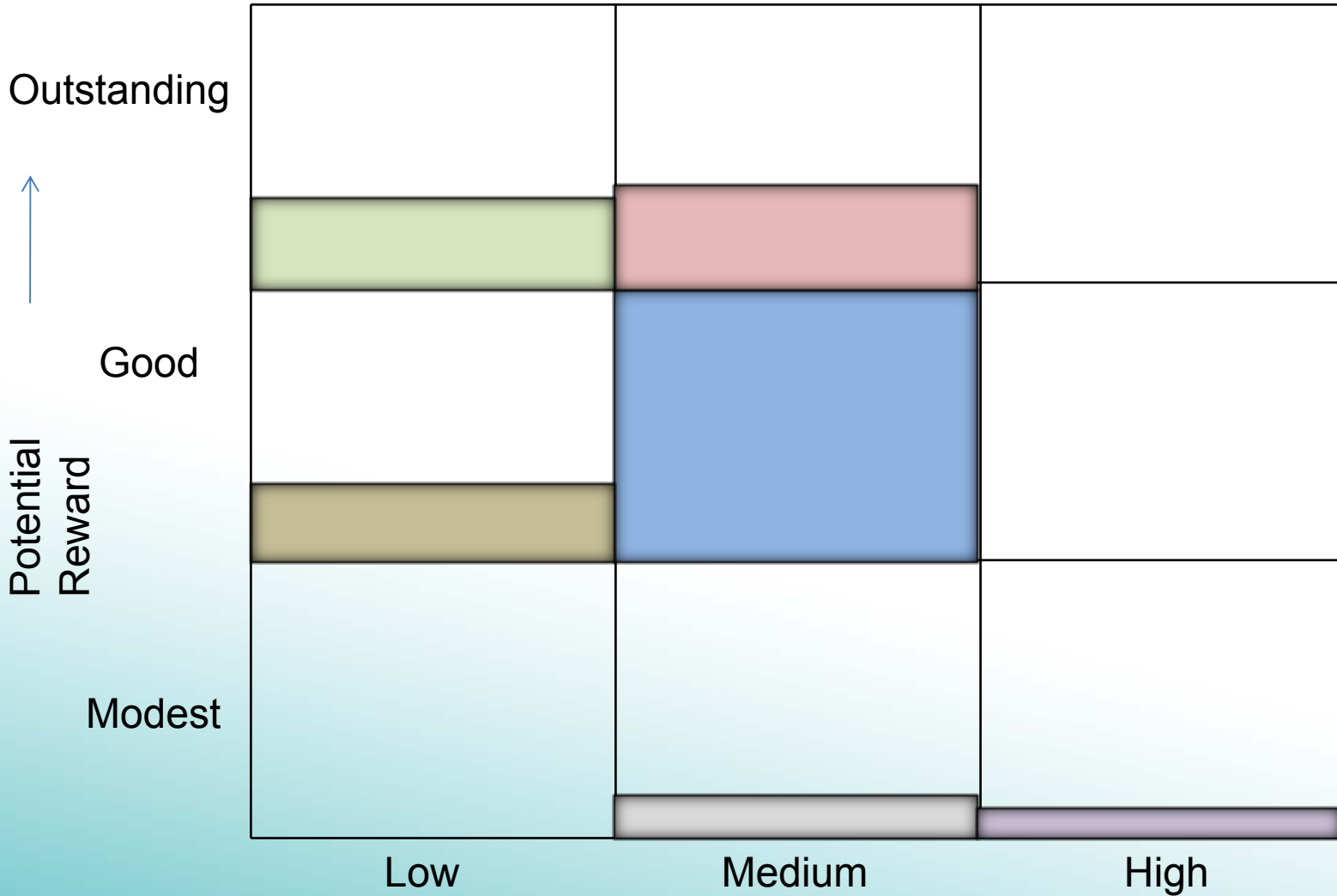
# Link to BCIA Strategy – 2010 Academic Support



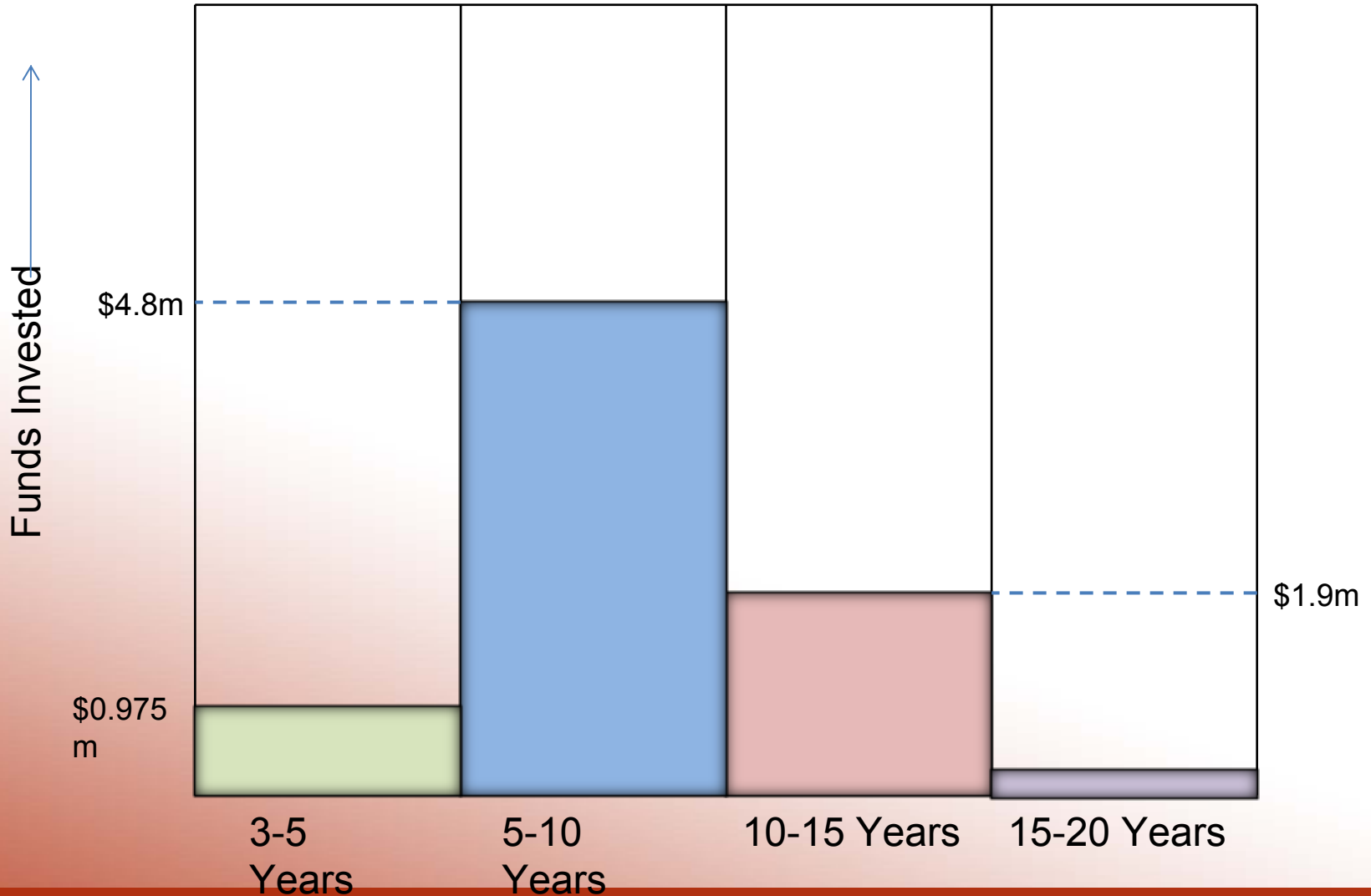
# Competitive Impact of R&D



# Risk – Reward Balance



# Time to Commercialisation



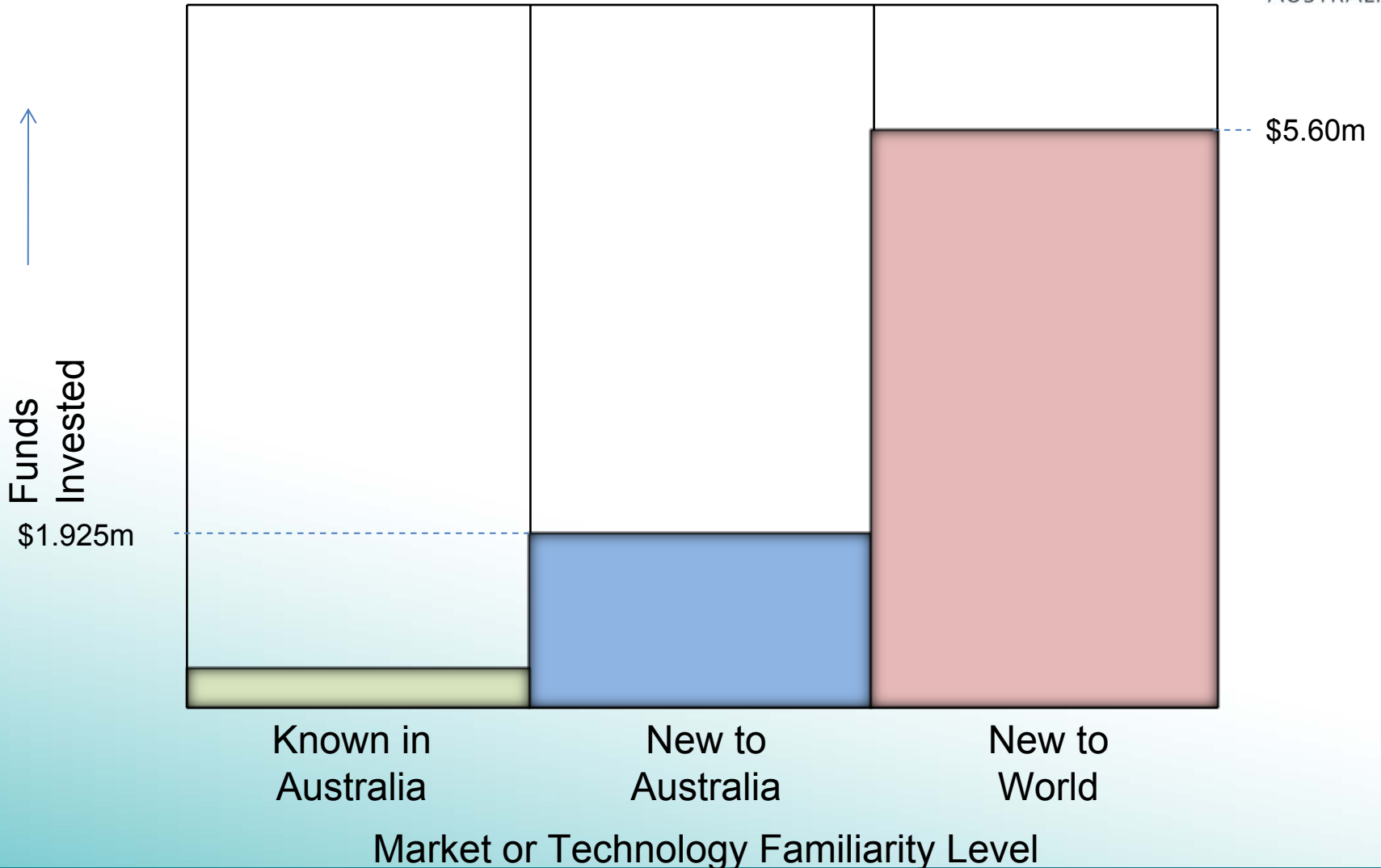


# Familiarity of Markets and Technologies.

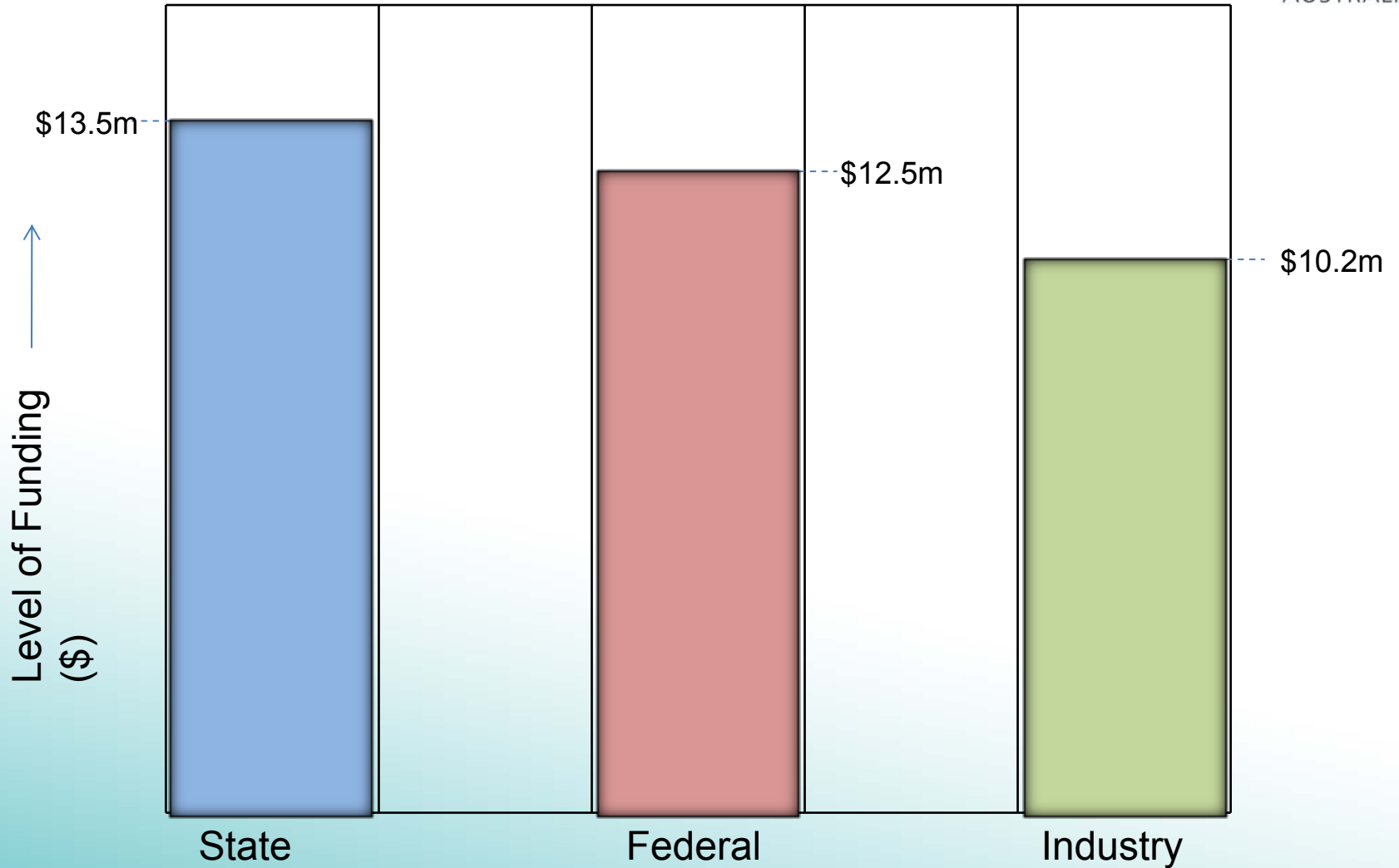
BROWN COAL

**INNOVATION**

AUSTRALIA



# Funding - Total.



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