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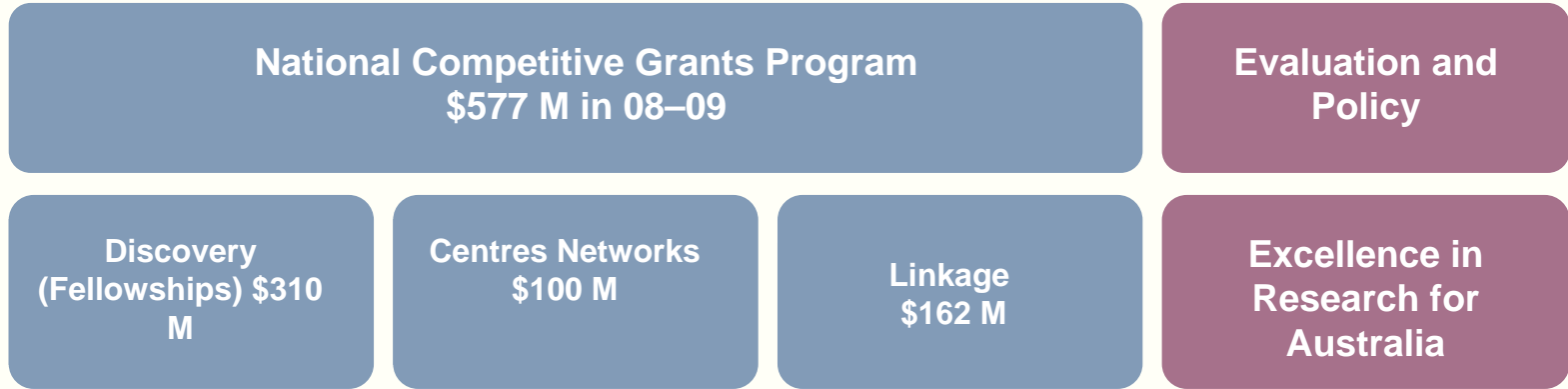
# ***The way forward for research excellence***

**Professor Margaret Sheil**  
**Australian Research Council**  
**9 March 2009**





# The ARC



- Statutory Agency established 2001
- Fund direct costs to Universities and partners
- Projects, Fellows and infrastructure (\$ < 5 M)
- All disciplines except clinical medicine and dentistry (with the exception of the new *Future Fellowships*)





# Promoting and Achieving Excellence

- People
- Internationalisation
- Environments
  - Physical
  - Intellectual
- Evaluation





- >30 years after initial research on controlling elements of genes
- Work done in plants (not animals or humans)
- Woman without tenure
- #7 in sciences
- Science took a long time to catch up (communication?)
- Sole winner
- Published relatively few papers





*“For the young person, fellowships are of the greatest importance. The freedom they allow for concentrated research and study cannot be duplicated by any other known method. They come at a time when one’s energies are greatest and when one’s courage and capacity to enter new fields and utilise new techniques are at their height.”*

*Nobel Laureate Barbara McClintock  
reflecting on the importance of postdoctoral fellowships to her career*



# 2008 Initiatives

## Attracting and retaining excellent people



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### Internationalisation

- removing any impediments to internationalisation in all schemes
- opening fellowships to international applicants to work in Australia
- provisions for international collaboration within all our programs

### *Future Fellowships*

aims to attract  
and retain the best &  
brightest mid-career researchers

### *Australian Laureate Fellowships*

aims to attract world-class researchers  
and research leaders to key positions





# Main funding schemes

## ***Linkage Projects***

- Supports collaborative R&D projects between higher education and other organisations
- Collaborating organisation must make a significant financial contribution to the project
- *Australian Postgraduate Awards, Australian Postdoctoral Fellowships, Linkage Industry Fellowships*
- Applications are processed twice a year

## ***Discovery Projects***

- *Provides funding for research projects that can be undertaken by individual researchers or research teams*
- *Australian Postdoctoral Fellowships, Australian Research Fellowships and Queen Elizabeth II Fellowships, Australian Professorial Fellowships*





# Excellent Environments

## Linkage Infrastructure, Equipment and Facilities

- fosters collaboration through its support of the cooperative use of national and international research facilities
- provides funding for large-scale cooperative initiatives so that expensive infrastructure, equipment and facilities can be shared
- 73 projects commenced in January, sharing funding of over \$31.6 m.
- demand for funding under this scheme is high.

## *Future Fellowships*

- Administering Organisation receive funding of up to \$50,000 per year to support related infrastructure, equipment, travel and relocation costs.

■ DIISR Block Grants

■ NCRIS

■ HEEF/EIF





# Centres of Excellence

- concentrate expertise and encourage scale and focus
- encourage collaboration amongst high-quality researchers
  - interdisciplinary
  - end users
- enhance Australia's international standing in research areas of national priority





ARC Centre of Excellence  
Coral Reef Studies



Undertakes world-best integrated research for sustainable use and management of coral reefs

- Professor Terry Hughes (JCU)
- is providing the scientific knowledge necessary to preserve the world's coral reefs
- has made Australia a world-leader in this field
- rezoning of the Great Barrier Reef and the Ningaloo reef in WA





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# Evaluation

Outcomes, outputs and  
international benchmarks



# Impact of ARC-funded research

Preliminary study findings: 2001–05 ARC-funded research publications

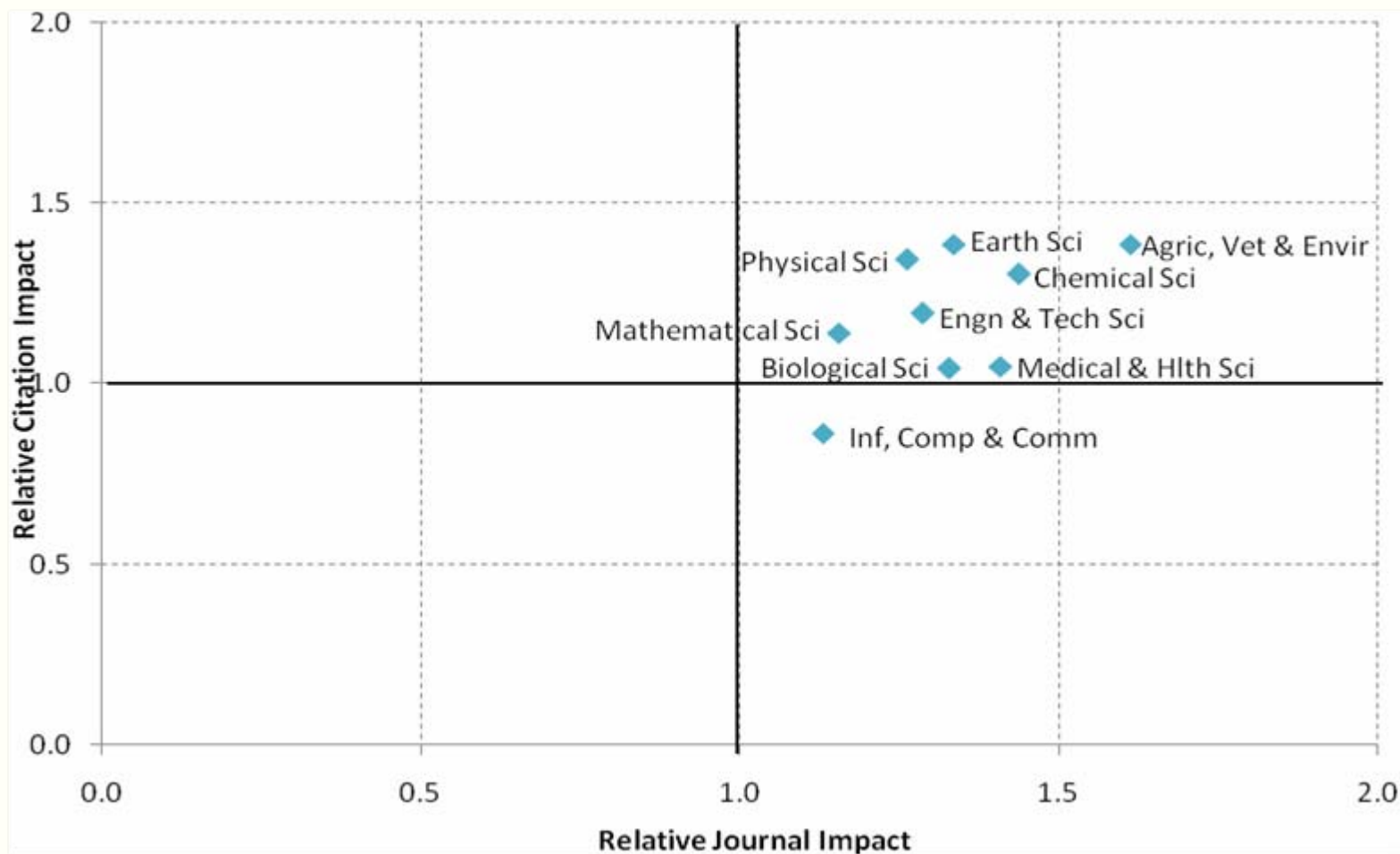
Relative to world benchmarks, ARC-funded publications appear in high-impact journals and are highly cited:

- In the sciences, the impact of ARC-funded publications was above the world average in all fields except information, computing and communication sciences.
- In the social sciences and humanities, the impact of ARC-funded publications was well above world averages in all disciplines that had sufficient numbers for analysis.
- In all fields except the mathematical sciences, the proportion of ARC-funded publications appearing among the most highly cited for their discipline is higher than the norm of one per cent.



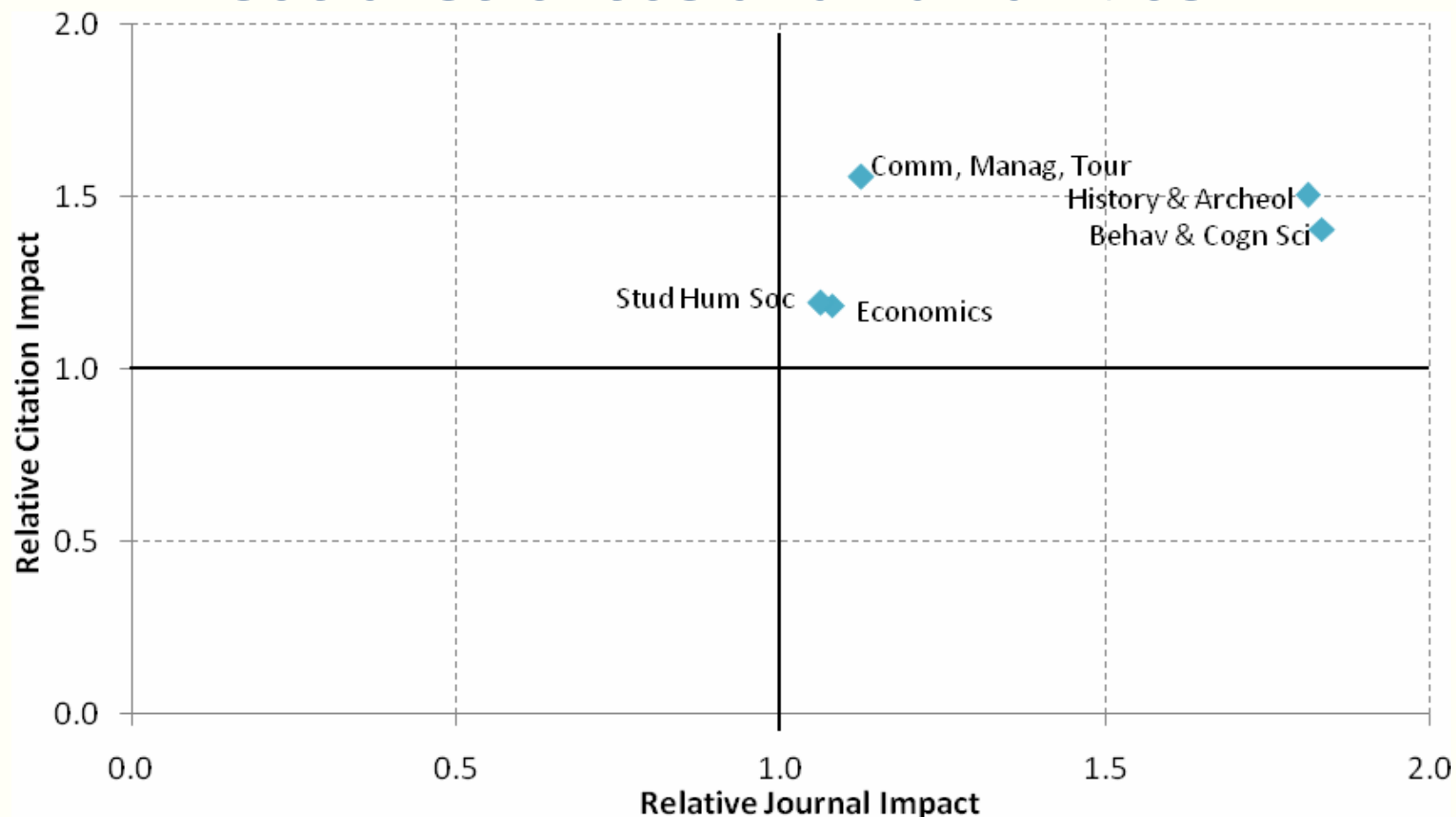


# Impact of ARC-funded research sciences





# Impact of ARC-funded research social sciences and humanities





# ARC and comparator Australian sectors

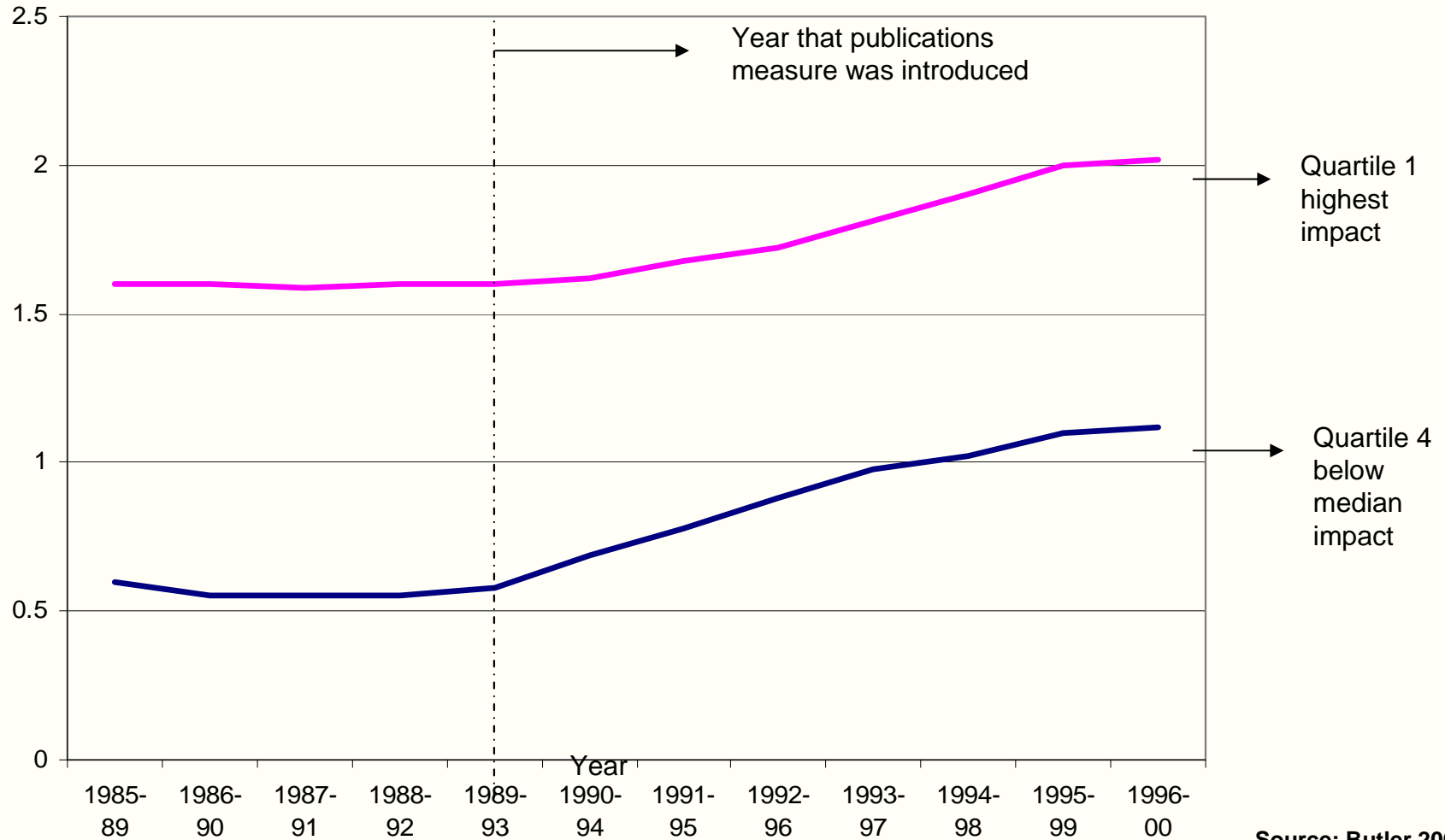
Number of publications and relative impact — all publications, 2001-2005

Scheme/Sector	Number of Publications	Citations	Relative Citation Impact
ARC - Australian Postdoctoral Fellowships	1621	7001	1.36
ARC - Australian Professorial Fellowships	2178	11085	1.31
ARC - Australian Research Fellowships	1028	5599	1.27
ARC - Centres Excellence	574	878	1.35
ARC - Discovery Projects	10528	57064	1.17
ARC - Federation Fellowships	977	2694	1.59
ARC - Key Centres	402	2284	1.13
ARC - Linkage Projects	1604	5761	0.92
ARC - QEII Fellowships	1159	5473	1.12
ARC - Special research Centres	1863	12902	1.53
<b>ARC Total</b>	<b>17246</b>	<b>88912</b>	<b>1.19</b>
Cooperative Research Centres	3245	15728	0.99
Other Government	8247	31813	0.81
Other Hospital	11967	74046	1.30
Other University	58874	253521	0.91
Research Institutes	14199	116314	1.73
<b>Australia</b>	<b>104319</b>	<b>541243</b>	<b>1.11</b>
<b>World</b>	<b>3782695</b>	<b>17649566</b>	<b>1.00</b>





# Australian academic publishing practices



Source: Butler 2002



# Evaluation of Excellence



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- Announced on 26 February 2008
- Will assess research quality within Australia's higher education institutions using a combination of indicators and expert review by committees comprising experienced, internationally-recognised experts
- Aims to:
  - Have the confidence of the research community
  - Identify excellence across all areas of research
  - Minimise the burden on those making submissions and those doing the evaluations





# Evaluating Research Excellence: Outcomes from the First Year

## National interest

103 submissions to the Consultation Paper (36 from HEPs)

114 submissions to the journal rankings

Attracted significant media attention with

> 70 media clips since March 08

ERA helpdesk has fielded over 330 queries

## International interest

- Consulted with UK, The Netherlands, US and NZ
- international experts on committees and groups, and in workshops
- Received international media coverage - with PBRF and RAE/REF





# Discipline clusters

1. Physical, Chemical and Earth Sciences (PCE)
2. Humanities and Creative Arts (HCA)
3. Engineering and Environmental Sciences (EE)
4. Social, Behavioural and Economic Sciences (SBE)
5. Mathematical, Information and Computing Sciences (MIC)
6. Biological and Biotechnological Sciences (BB)
7. Biomedical and Clinical Health Sciences (BCH)
8. Public and Allied Health Sciences (PAH)



# Indicators



ERA will use discipline-specific indicators to evaluate research where appropriate

The development of indicators was assisted by expert advice provided by the Indicators Development Group and sub-groups, and consultation with the research and higher education sector.

Indicator methodologies have been developed in accordance with international best practice.

In December 2008, the Minister and I released two key indicator documents: the *ERA Indicator Principles* and *ERA Indicator Descriptors*.





# Interdisciplinary research

ERA is a discipline-based exercise, but seeks to recognise this research

Institutions can identify research by institutional unit and/or research theme so they can compile interdisciplinary profiles

Full ERA evaluations in 2010 will help

There are still issues of how we aggregate this information

# Applied research

Will be included in ERA

Has the meaning used in the ANZSRC

Publications plus research commercialisation income and other applied measures relevant to each discipline





# ERA: Lessons learned

Time needed to adjust thinking to the new approach

All spent a long time preparing for the RQF

RQF taught us some things

Senior administrators and research offices understand the new approach, researchers are taking some time to get up to speed

Workshops held with researchers have shown that once they understand, there is strong level of support for the approach

Competing agendas between researchers, research disciplines and university administrators

Esteem indicators are a good example of the tensions the ARC has to deal with



# What next



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## ERA trial

- Will evaluate the PCE and HCA clusters
- Minister announced timeframe on 23 February
  - PCE submissions to commence in June
  - HCA submissions to commence in August
- Outcomes will inform the full ERA process
- Esteem indicators will not be included

## Full ERA in 2010

