



Australian Government

Australian Research Council

**Forging Industry Links Forum
University of Wollongong
March, 2009**

An ARC Perspective on Research Collaboration

Dr Ian D R Mackinnon

Executive Director, Engineering and Environmental Sciences

Australian Research Council

Co-ordinator: Linkage Projects and Linkage Infrastructure, Equipment and Facilities Schemes

email: ian.mackinnon@arc.gov.au

RESEARCH *in the national interest - enabling the future*



Australian Research Council Overview

- Federal Government agency supporting all R&D
 - except medical and dental research
 - competitive, peer-reviewed proposals by investigators
 - limited strategic direction in specific fields
- Annual funding to University sector ~\$600m (FY08/09)
 - about 10% of total Federal spend on R&D
 - increase from ~\$250m in FY02/03
 - by FY10/11 will increase to ~\$750m/yr
 - assess >5,500 proposals per year
 - 35 Centres of Excellence, Special or Co-funded Centres
 - 25 Research Networks
- Mission
 - to advance Australia's research excellence to be globally competitive and to deliver benefits – public good and commercial – to the community





Importance of Co-Funding

- Co-funding is a “revealed preference”
 - confirmation of research need
 - “pre-selection” process
- Co-funding is quantifiable
 - $\$ \text{ARC} + \$ \text{co-funder} = \$ \text{project}$



- Happy co-funders are influential spokespersons
 - to whom others really listen





Research Partnerships

Competitive Schemes

| | CRC Programme | ARC Centres of Excellence | ARC LP Scheme |
|-------------------------|-----------------------------|---------------------------------|-------------------------------|
| Duration (years) | Min: 7 Max: 14 to ? | Min: 5 Max: 8-9 | Min: 1 Max: 5 |
| C'wlth \$/Centre | \$2m to \$4m per year | Min: ~\$1m/yr Max: ~\$3m/yr | Min: \$20k/yr Max: \$2m/yr |
| No of Industry Partners | Required Av: 7-9 per CRC | Not Required Av: 4-6 per CoE | Required Av: 2 per grant |
| Focus | programmatic, thematic | programmatic, thematic | project, thematic |
| Call Frequency | 2 years | 2-3 years | 6 months |
| Success Rate | 10%-20% | < 10% | 40%-50% |
| C'wlth \$/year | ~\$200m | ~\$65m | ~\$120m |





ARC Research Centres

Materials Oriented

1997

Subatomic Structure of Matter (UAdel, Flind, UMelb, UTas, UNSW, ANU)

2000

Green Chemistry (Monash, UNew, UWA)

Particle and Material Interfaces (UniSA)

Particulate Fluids Processing (UMelb)

2003

Advanced Silicon Photovoltaics & Photonics (UNSW)

Quantum Computer Technology (UNSW, UQld, UMelb, ANU)

Solar Energy Systems (ANU)

Functional Nanomaterials (UQld, UNSW, ANU, UWSyd)

Ultra-high Bandwidth Devices (USyd, ANU, UTS, MacU, Swin, RMIT)

2005

Anti-Matter Matter Studies (ANU, Murdoch, Flind, UAdel, UWA, CDU, JCU, Open)

Design in Light Metals (Monash, Deak, UQld, UNSW, USyd, UMelb)

Electromaterials Science (UWoll, Monash)

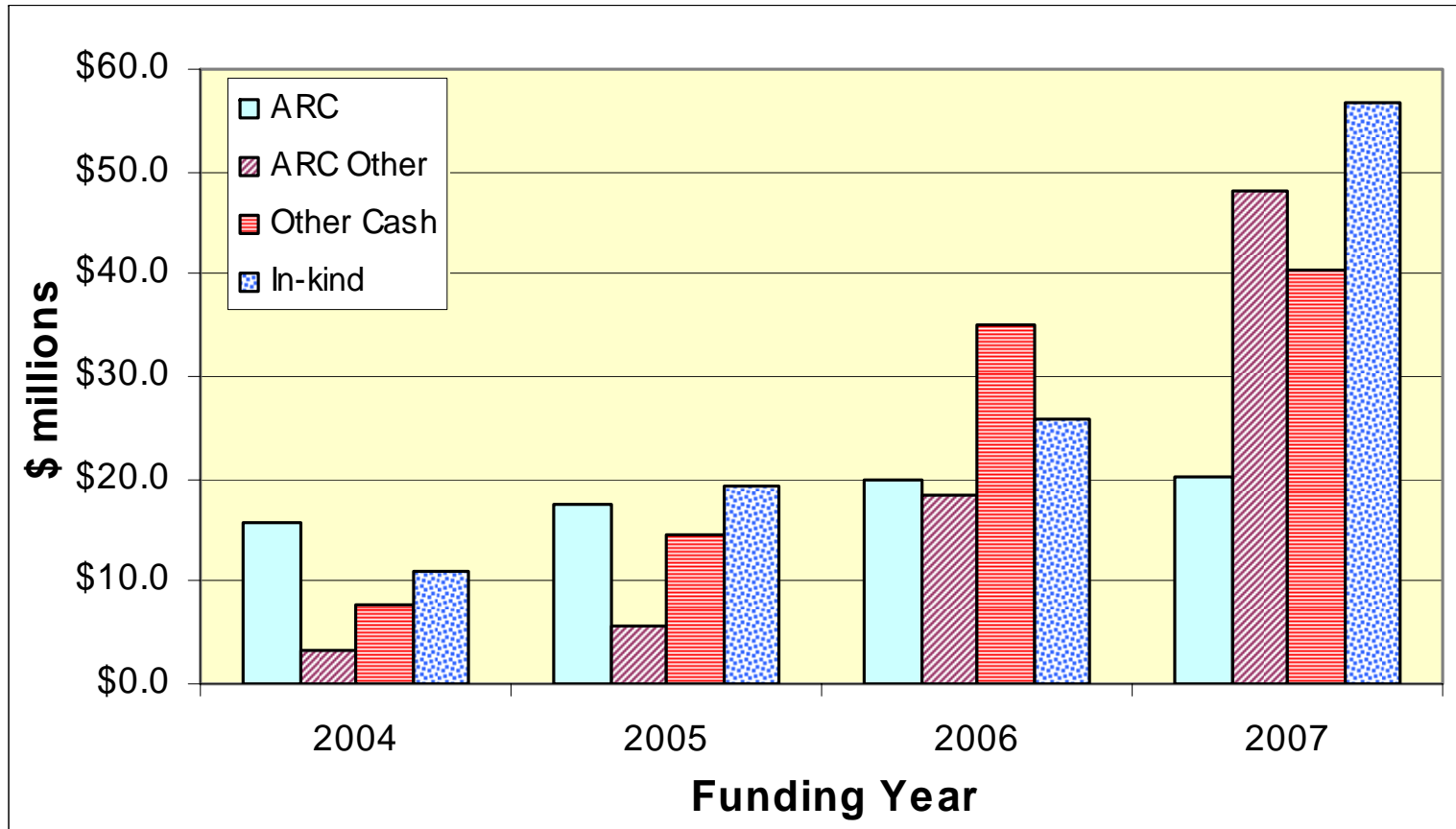
Networks: Advanced Materials (ARNAM) and Nanotechnology (ARCNN)





ARC Centres Funding Profile

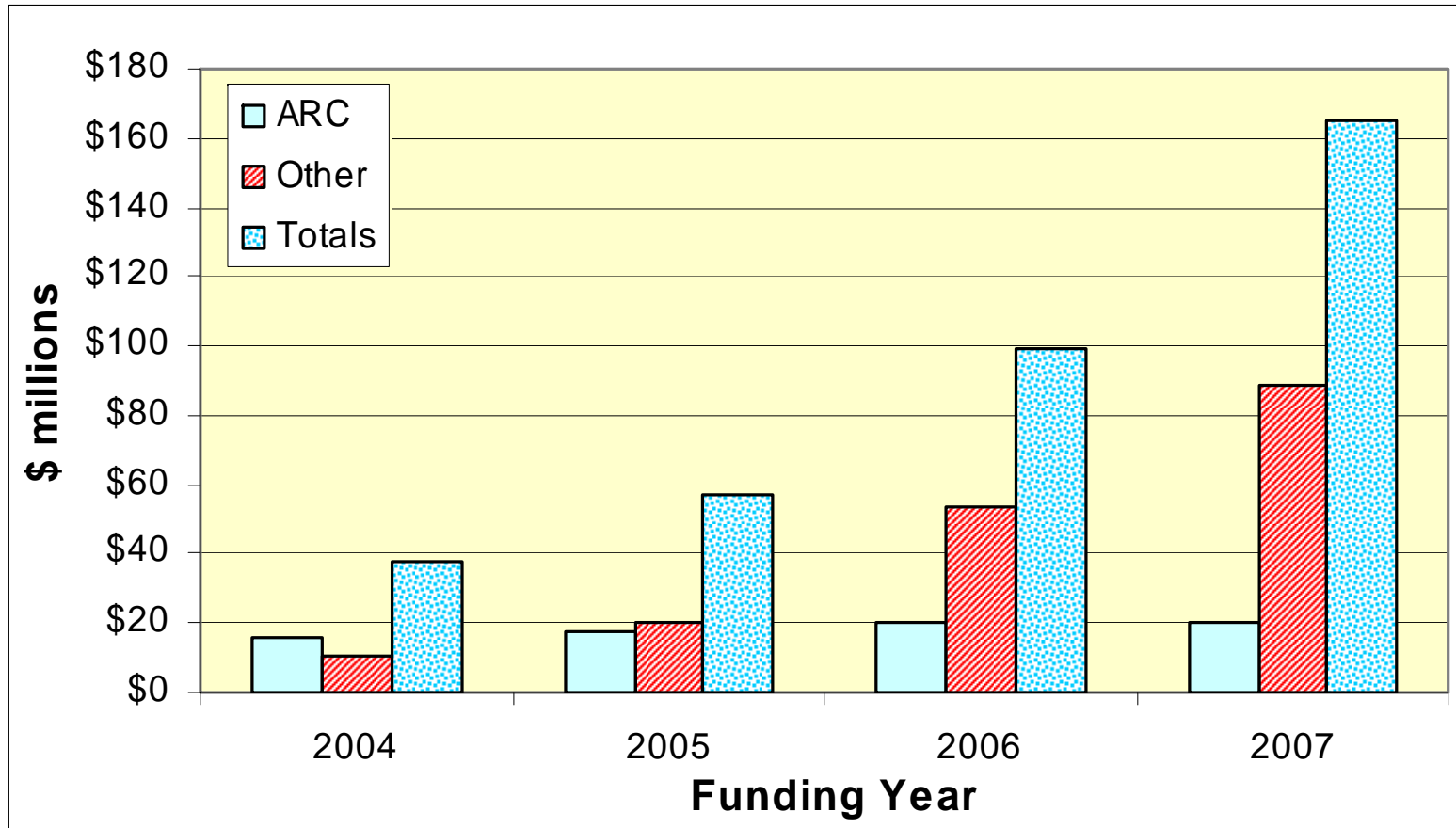
Materials related





ARC Centres Funding Profile

Materials related



Leverage 4:1 to 8:1

RESEARCH in the national interest - enabling the future

Graeme Clark Research Outcomes Forum



Australian Government
Australian Research Council



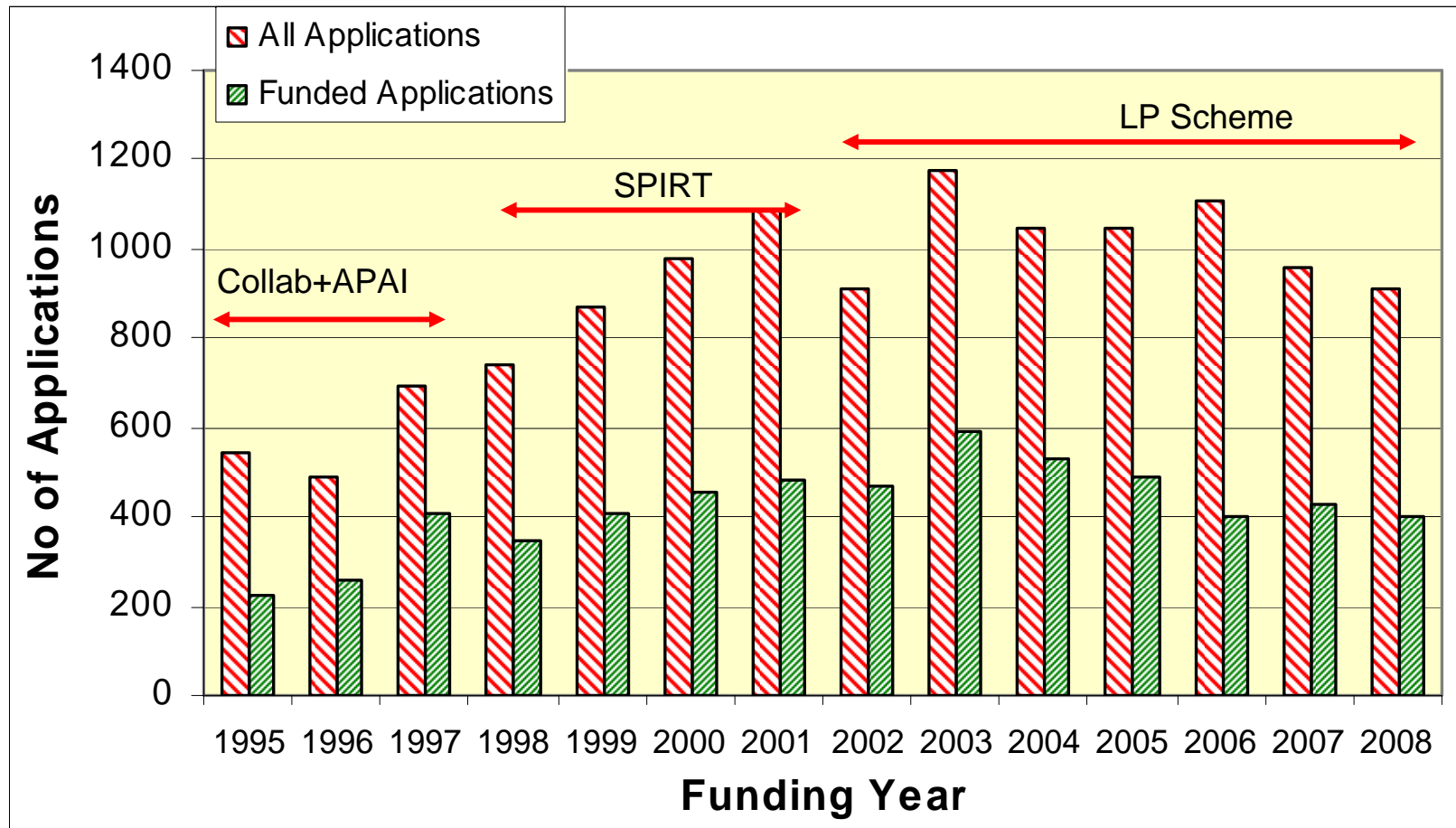


Linkage Projects

- **Primary aim**
 - Encourage and extend cooperative approaches to research by strengthening links within Australia's innovation system and within innovation systems internationally
 - Economic, social, environmental, policy or scientific benefit
- **Participant roles**
 - Chief Investigator, Partner Investigator
 - APAI (Aust. Postgraduate Award, Industry)
 - APDI (< 3 years from PhD),
 - Linkage Industry Fellowships (LIF)
- **Partners**
 - Private sector; private non-profit organisation; a Govt org with funds not committed to internal research or any other purpose of research, evaluation and/or consultancy.
 - Does not fund medical and dental research & training



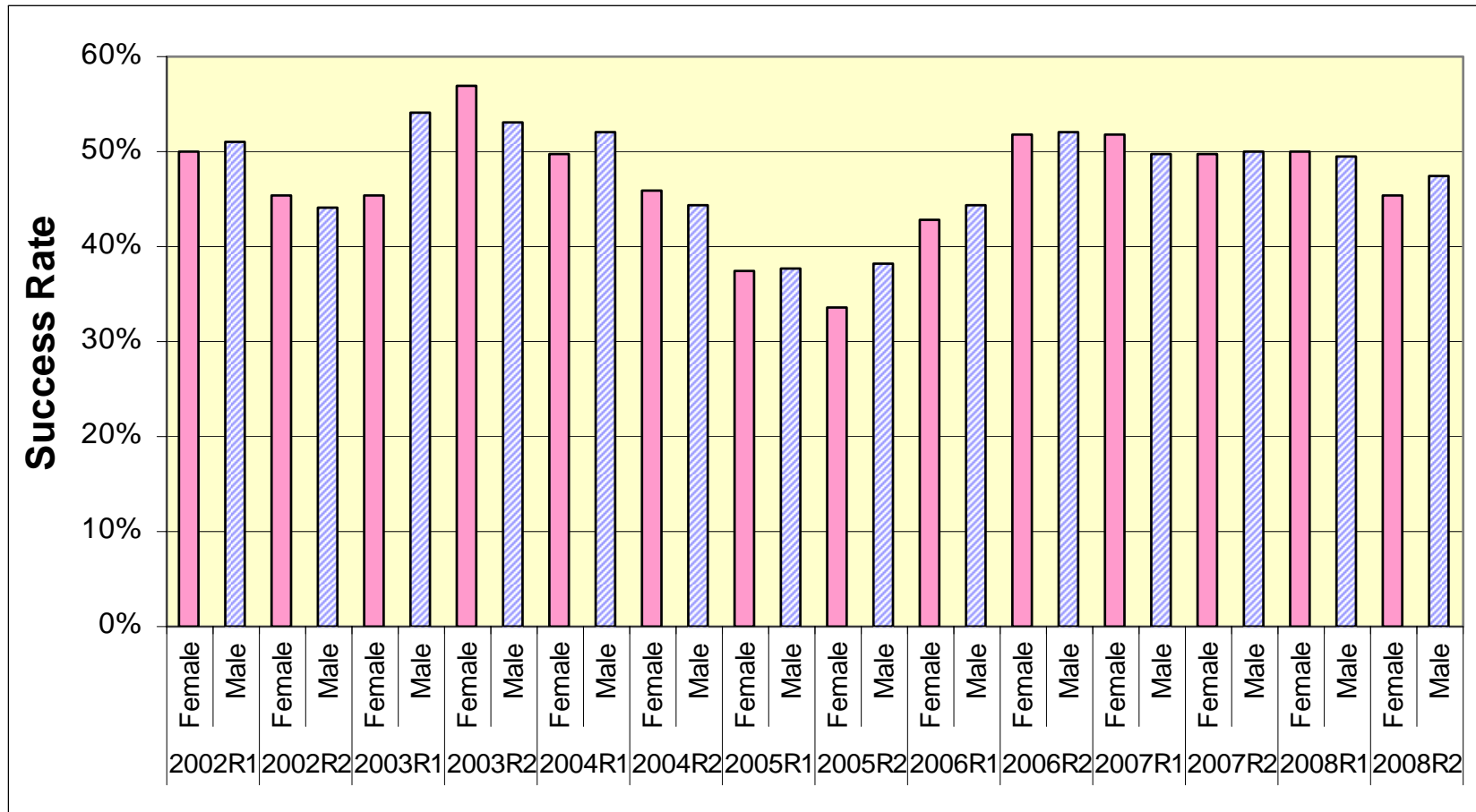
ARC Collaborative Projects (All Fields)





Linkage Projects Scheme

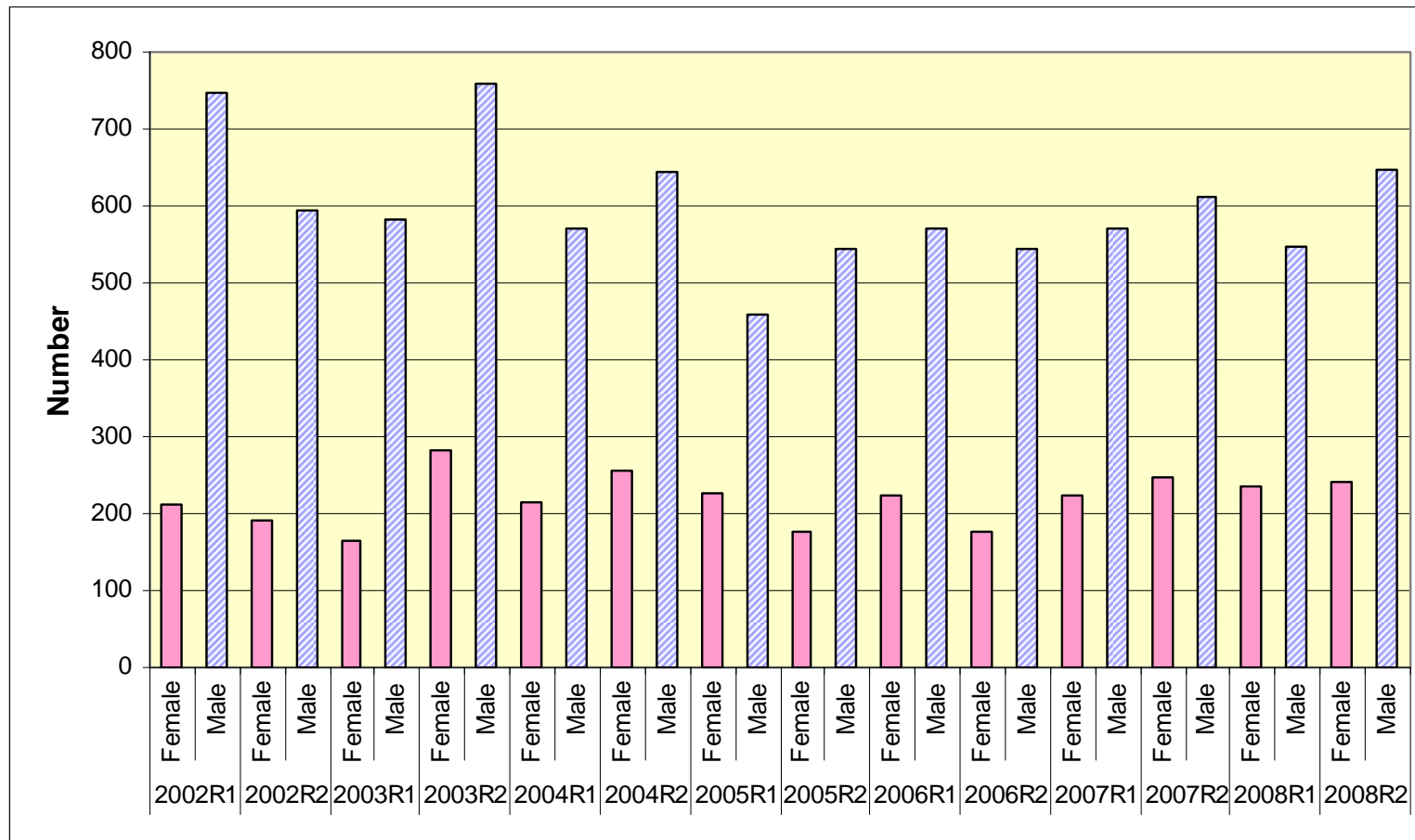
Gender by Submit Year





Linkage Projects Scheme

Gender by Submit Year



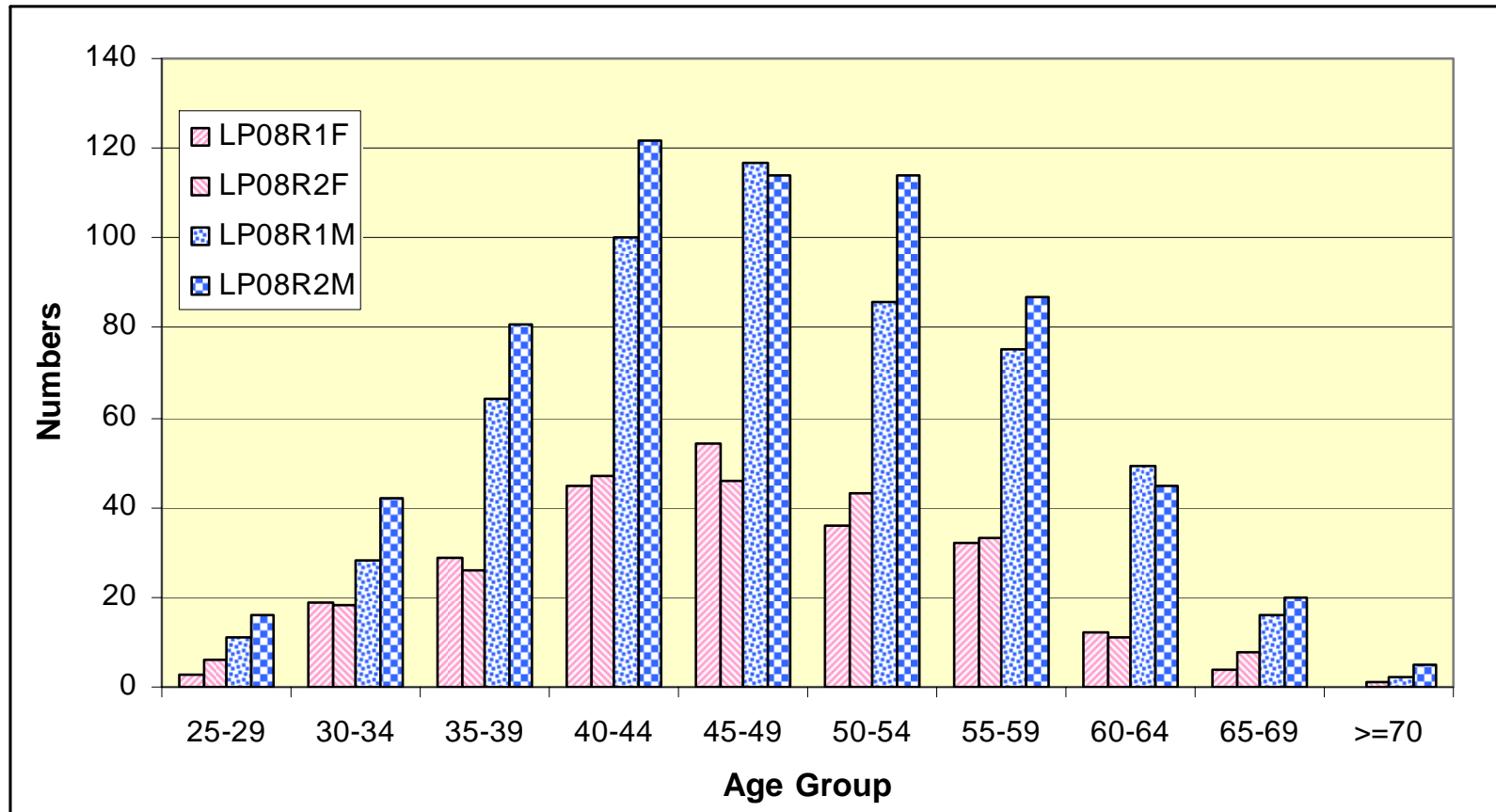
22% to 33% of total cohort





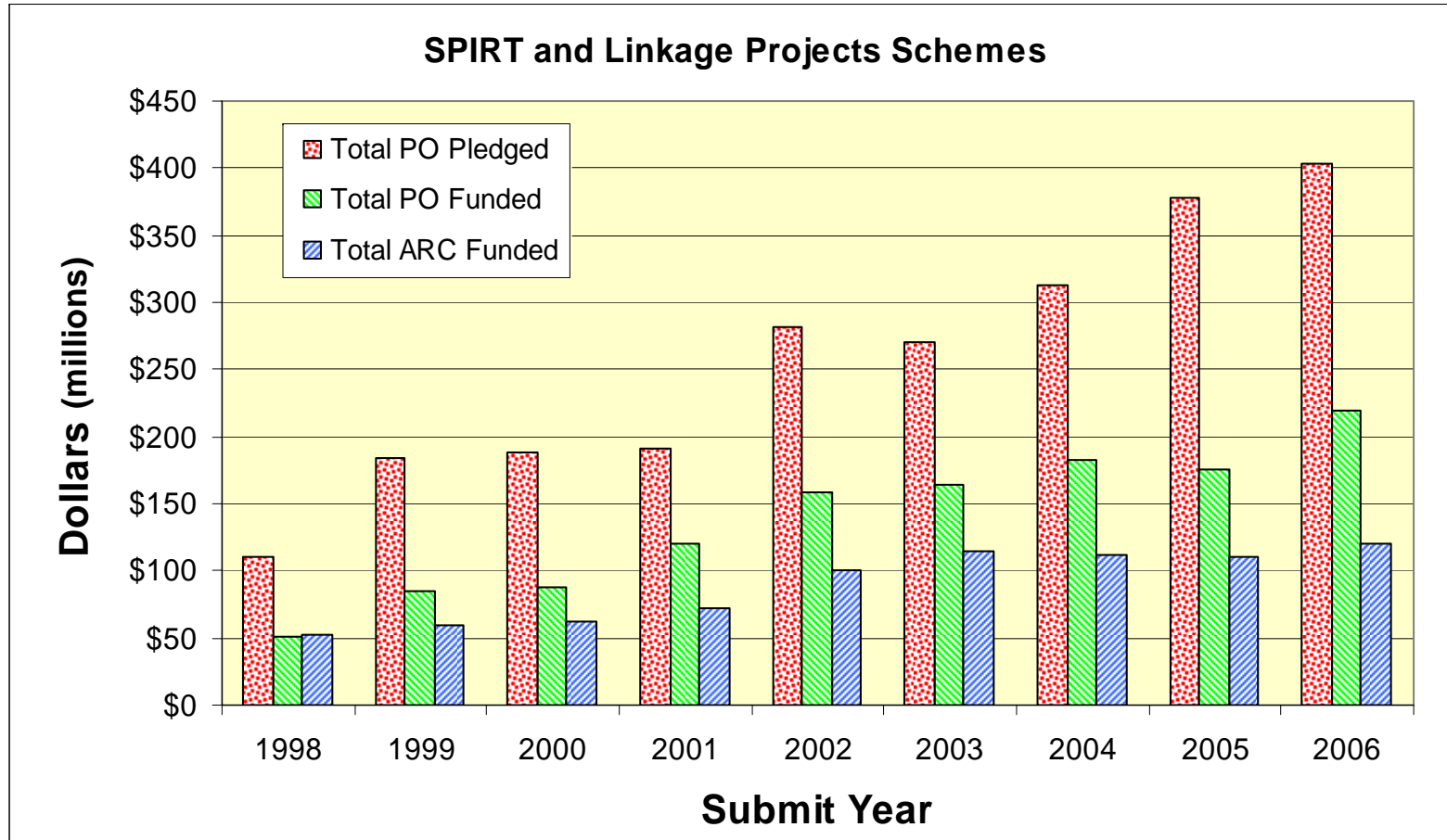
Linkage Projects Scheme

Age Profile – Funded Projects



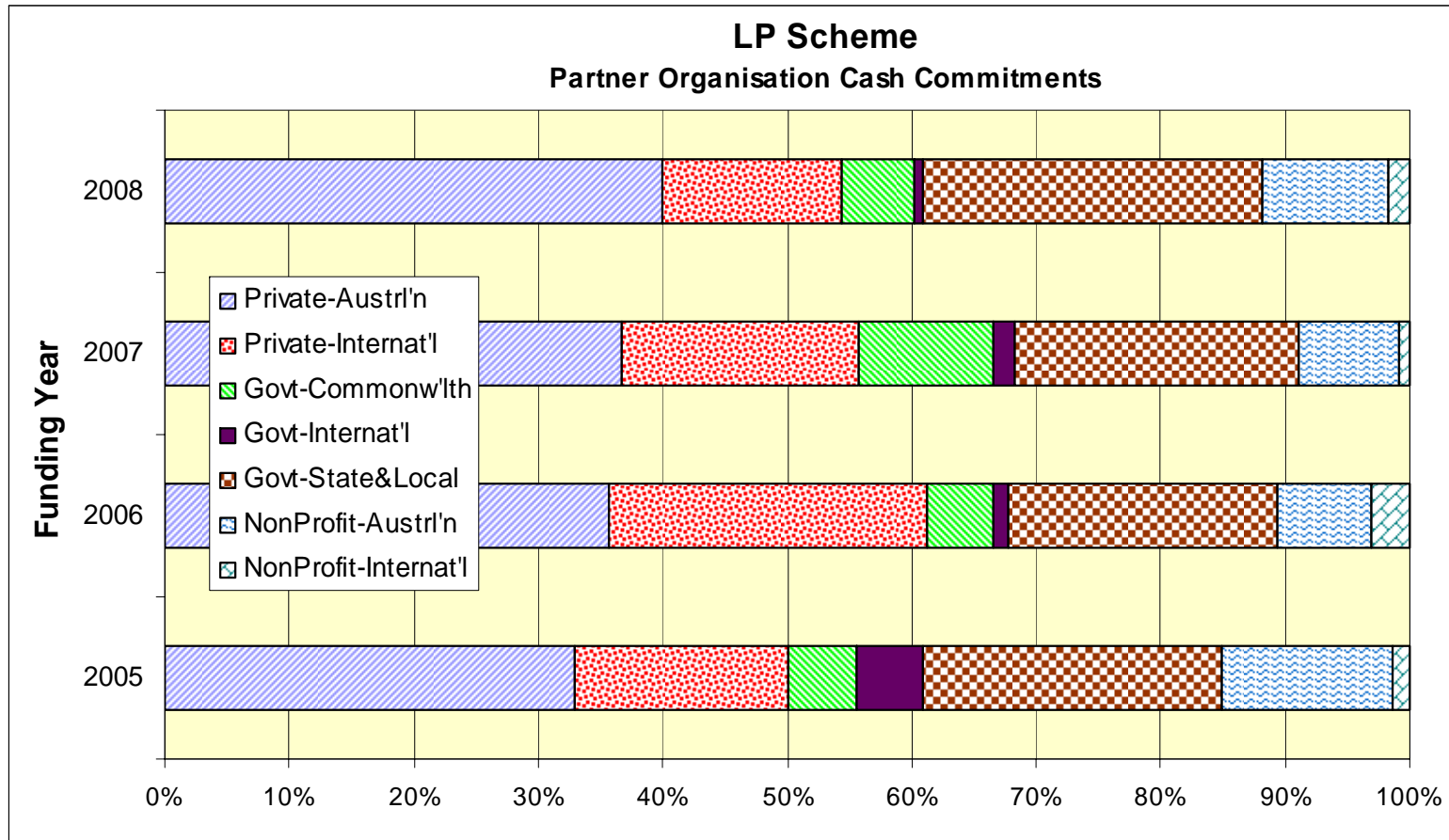


Partner Organisation Commitment (Cash + In-kind)





Partner Organisation Profile 2005-2008





Partner Organisation Contributions 2005-2008 (millions)

| | Cash | % | In-kind | % | Total | % |
|-------------------|----------------|---------------|----------------|---------------|----------------|---------------|
| Private Sector | | | | | | |
| Australian | \$89.8 | 36.5% | \$164.5 | 37.1% | \$254.3 | 36.9% |
| Overseas | \$46.9 | 19.1% | \$68.6 | 15.5% | \$115.6 | 16.8% |
| Sub-total | \$136.7 | 55.6% | \$233.1 | 52.6% | \$369.9 | 53.7% |
| Government Sector | | | | | | |
| Australian | \$17.2 | 7.0% | \$21.3 | 4.8% | \$38.5 | 5.6% |
| State & Local | \$58.9 | 23.9% | \$126.1 | 28.5% | \$184.9 | 26.8% |
| Overseas | \$5.1 | 2.1% | \$5.1 | 1.2% | \$10.2 | 1.5% |
| Sub-total | \$81.2 | 33.0% | \$152.4 | 34.4% | \$233.7 | 33.9% |
| Non-Profit Sector | | | | | | |
| Australian | \$23.7 | 9.6% | \$50.9 | 11.5% | \$74.6 | 10.8% |
| Overseas | \$4.3 | 1.8% | \$6.5 | 1.5% | \$10.9 | 1.6% |
| Sub-total | \$28.1 | 11.4% | \$57.4 | 13.0% | \$85.5 | 12.4% |
| Totals | \$246.0 | 100.0% | \$443.0 | 100.0% | \$689.0 | 100.0% |

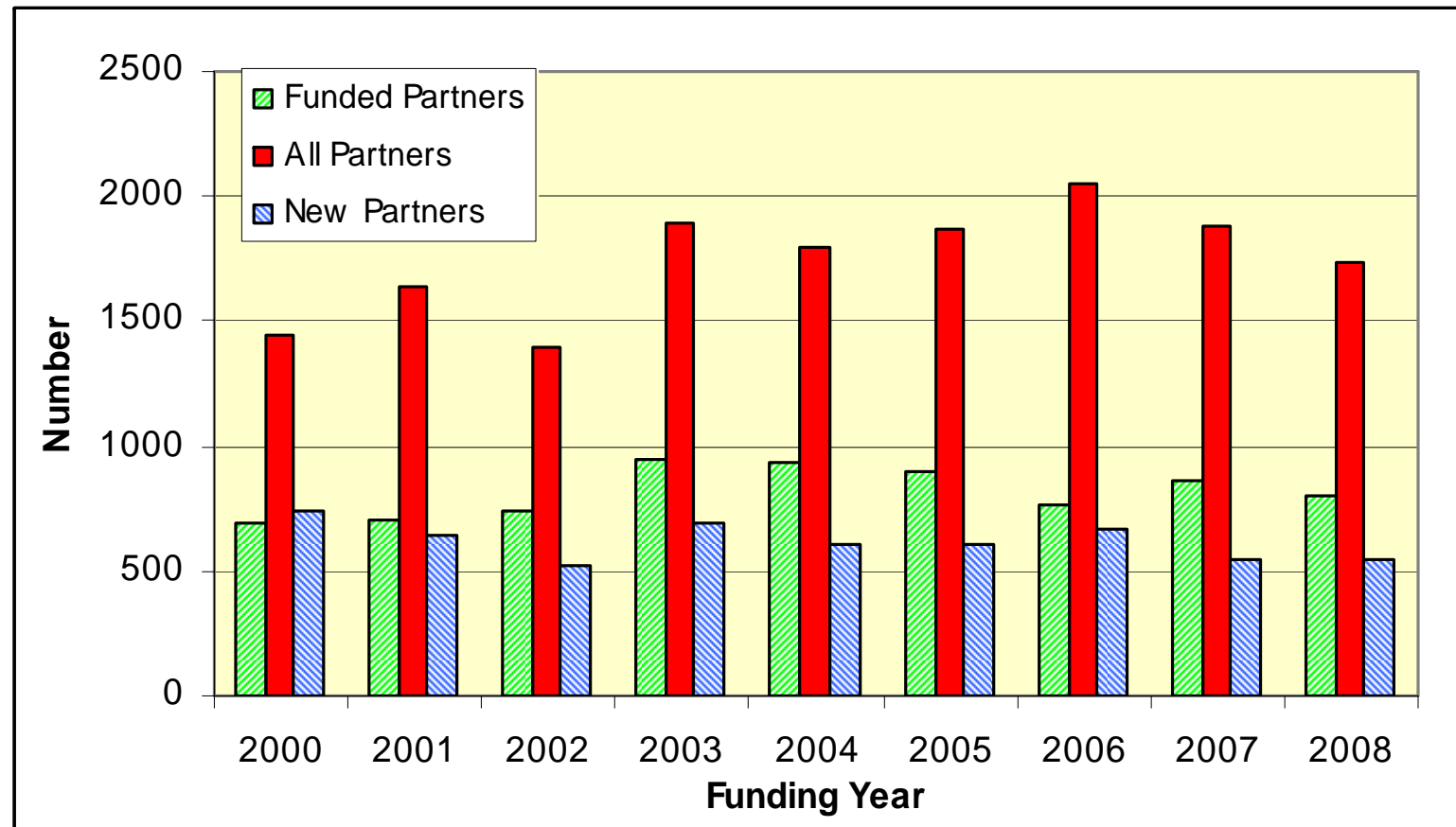
Total ARC Commitment: \$467.5m





Partner Organisation Participation

Linkage Projects Scheme



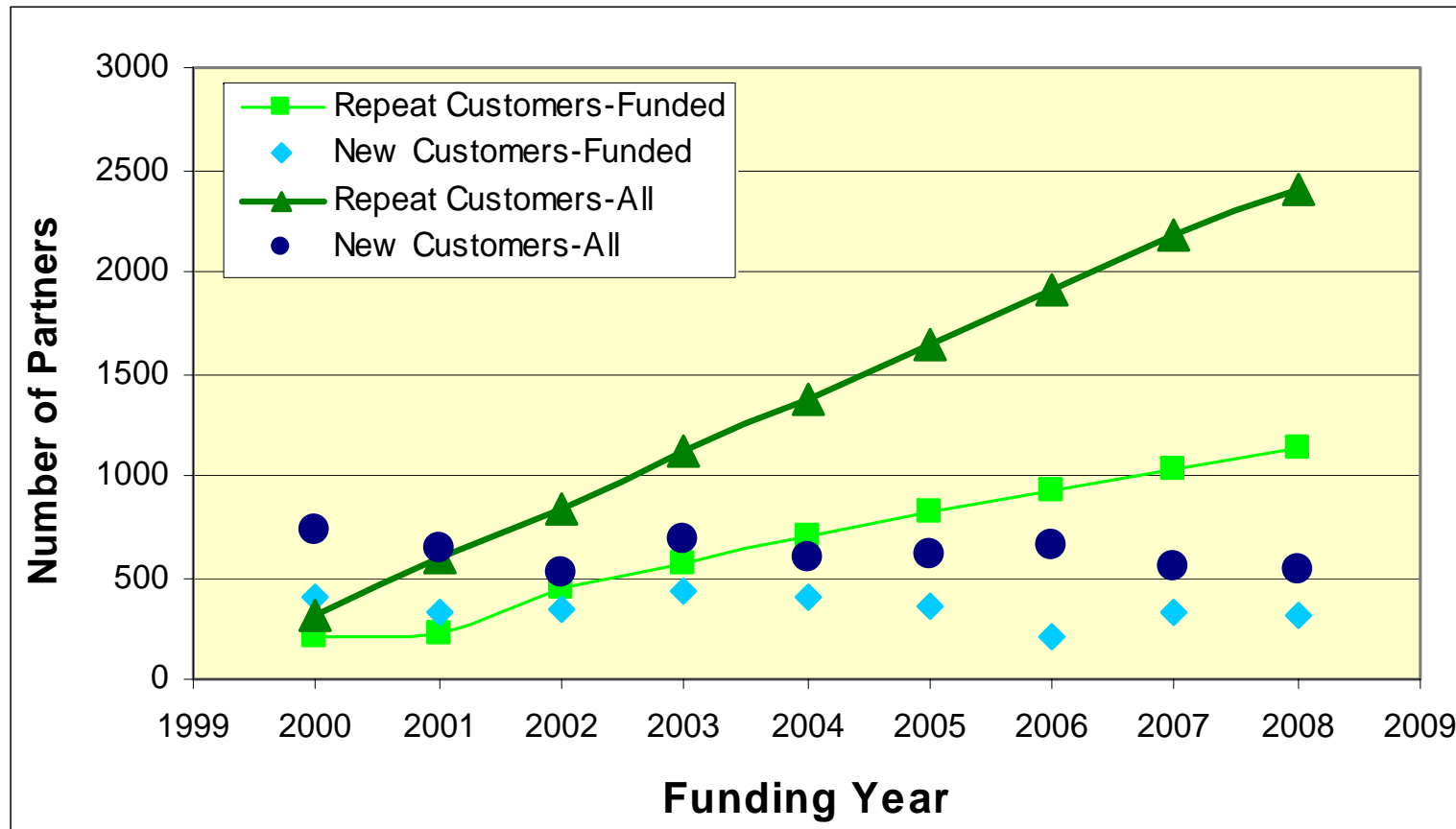
*New Partners: first occurrence as Partner Organisation on any project (since 1995)
Total for Period: 3,118 (funded)





Partner Organisation Participation

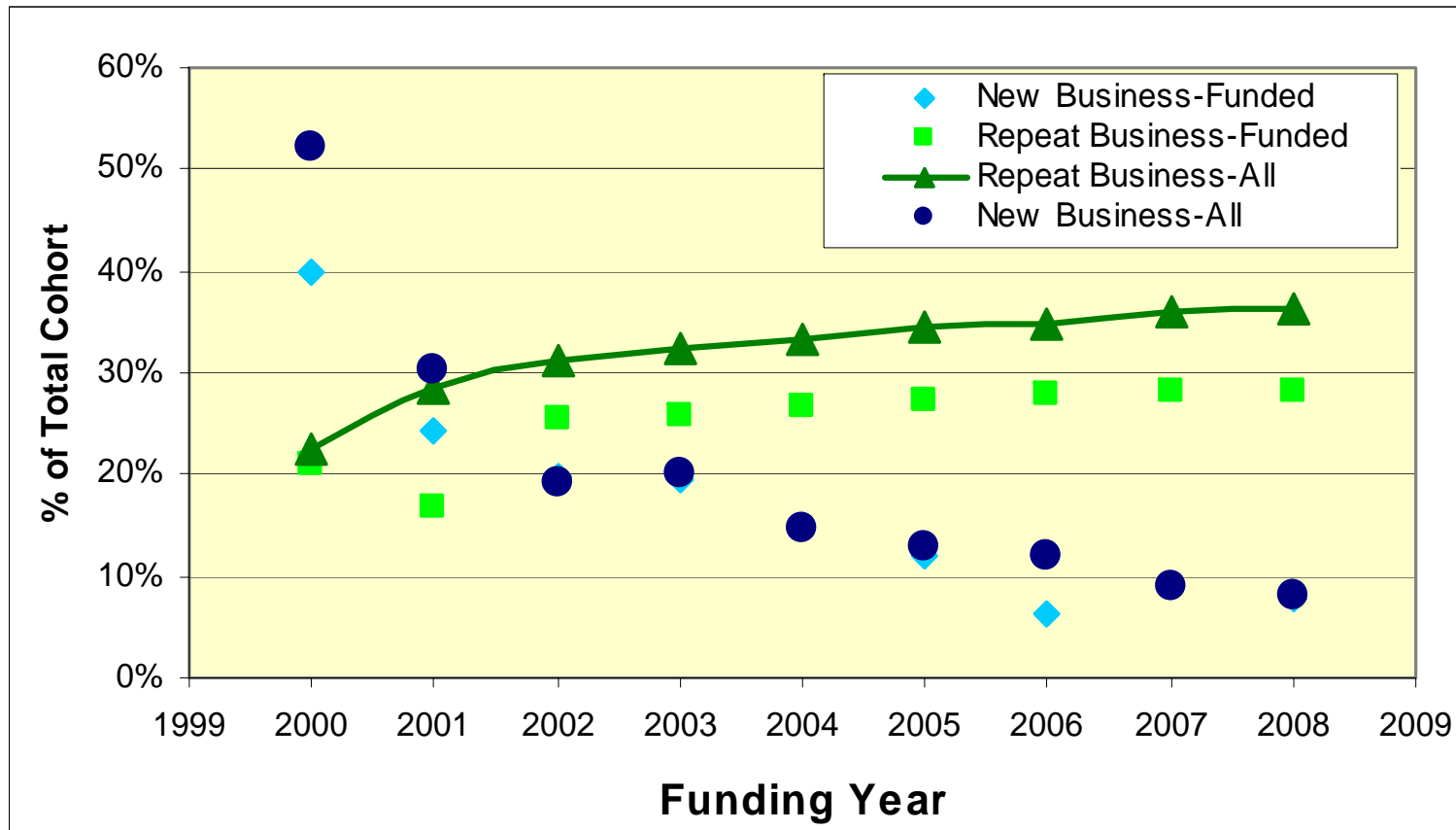
Linkage Projects Scheme





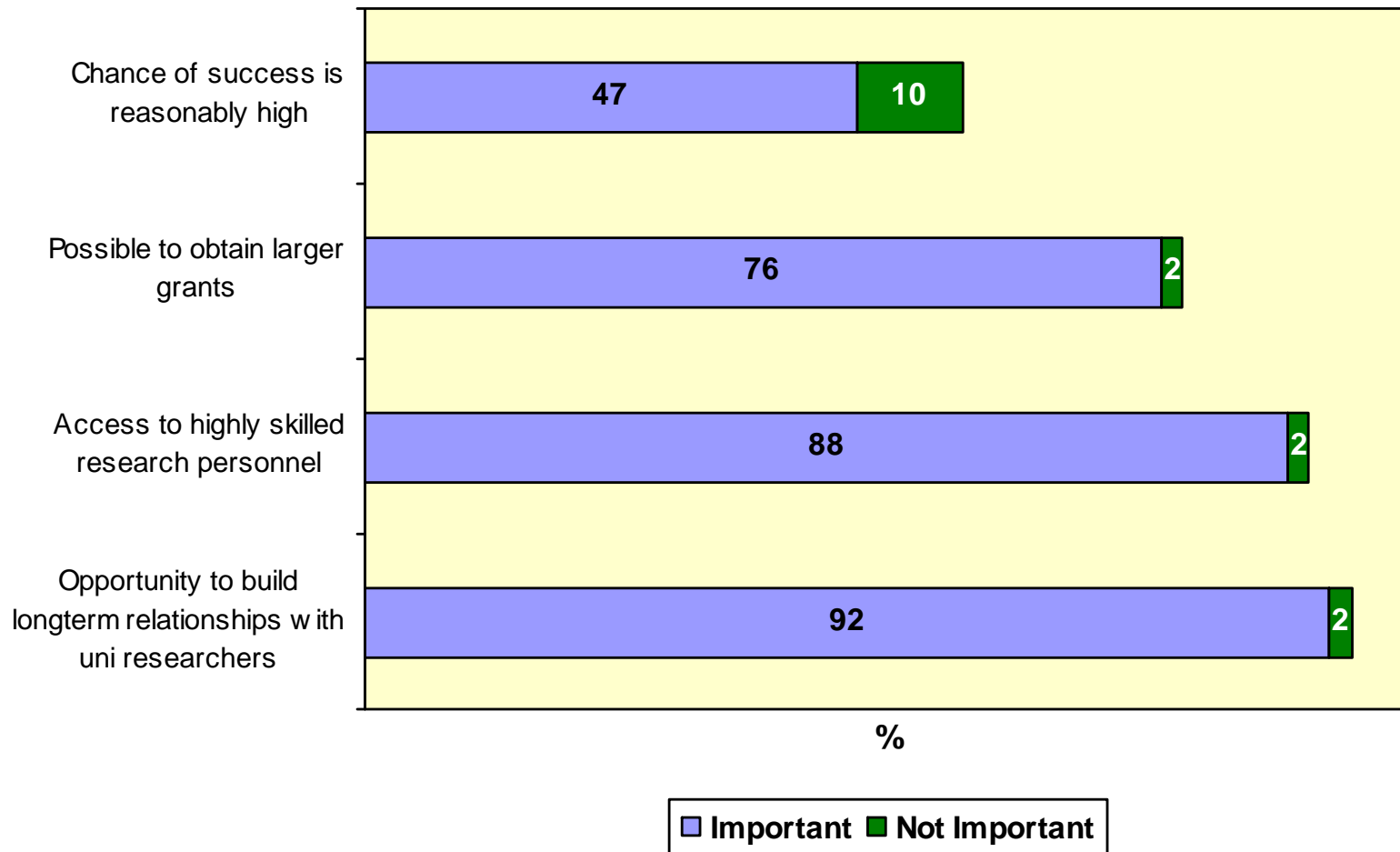
Partner Organisation Participation

Linkage Projects Scheme





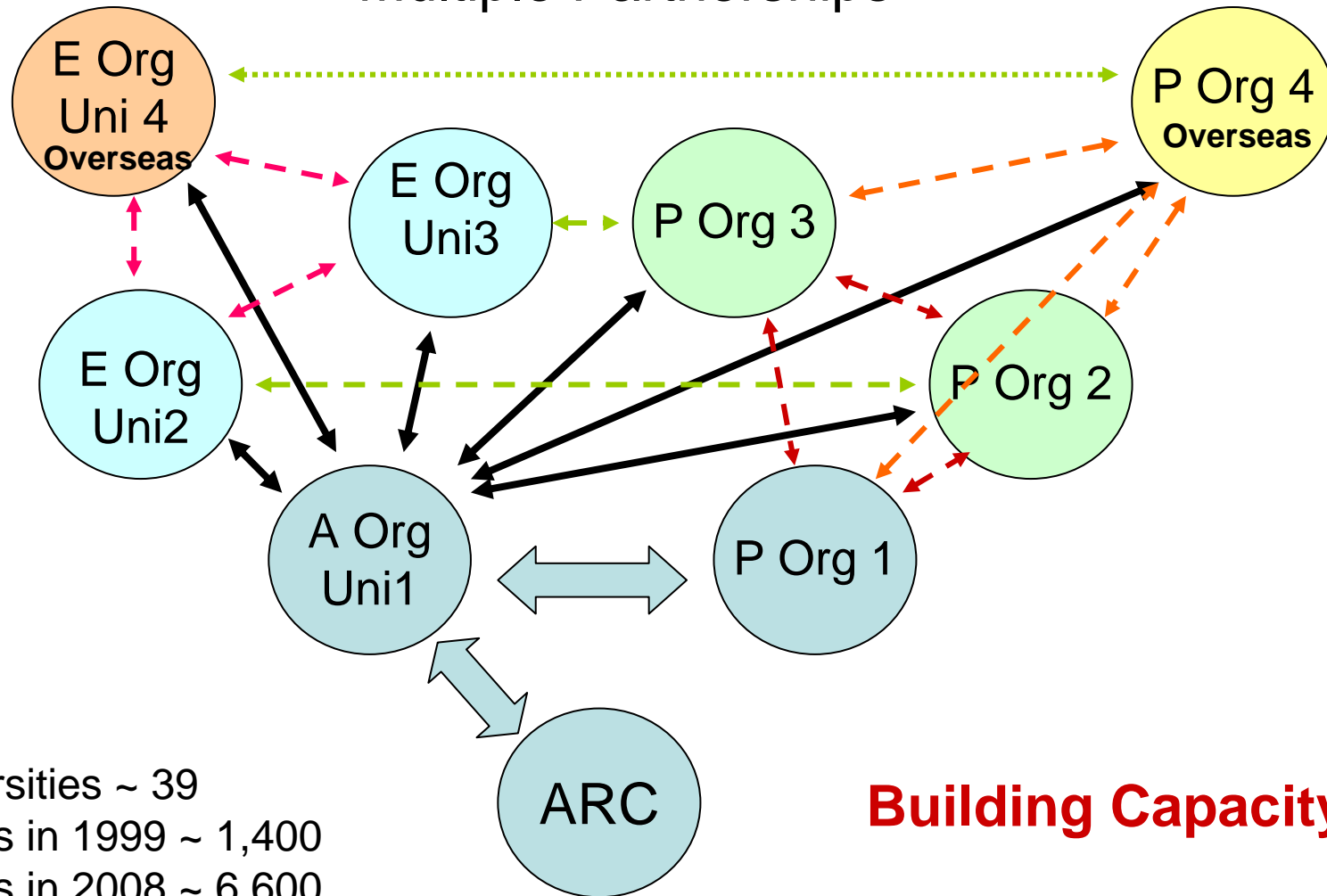
Partner Organisation Views: Why Use LP Scheme ?





Linkage Projects Scheme

Multiple Partnerships



Universities ~ 39
P Orgs in 1999 ~ 1,400
P Orgs in 2008 ~ 6,600

Building Capacity



Summary

- Centres of Excellence Scheme
 - highly competitive and collaborative
 - end-user engagement; mutual associations
 - typical leverage 4x; excellent outcomes
- Linkage Projects Scheme
 - 50%-60% of total PO cohort is private sector
 - 20%-25% of total PO cohort is international
 - > 3,000 new POs in R&D between 2000–2008
 - repeat business >30% for past seven years
- Factors in Research Partnerships
 - roles and responsibilities – academic; industry
 - long-term strategic R&D & commitment
 - relationships – building, maintaining and enhancing



RESEARCH in the national interest - enabling the future



Australian Government
Australian Research Council

Thank You

