

NATIONAL FRAMEWORK FOR
ENERGY EFFICIENCY

Energy Productivity **the economic opportunity for** **Australia**

Modelling Workshop
Canberra 22 April 2004

Ministerial Council on Energy

- 2001

COAG assigned MCE the task to identify ways of significantly improving energy efficiency through cooperative action by the Commonwealth, States and Territories.

- 2002

Ministerial Council endorsed the development of a National Framework for Energy Efficiency (NFEE)

- 2003

National Framework Discussion Paper released for consultation

- 2004

Draft National Framework in second half of the year
Final National Framework by the end of the year

Some Definitions

Energy efficiency

Goal : technical ways to use less energy

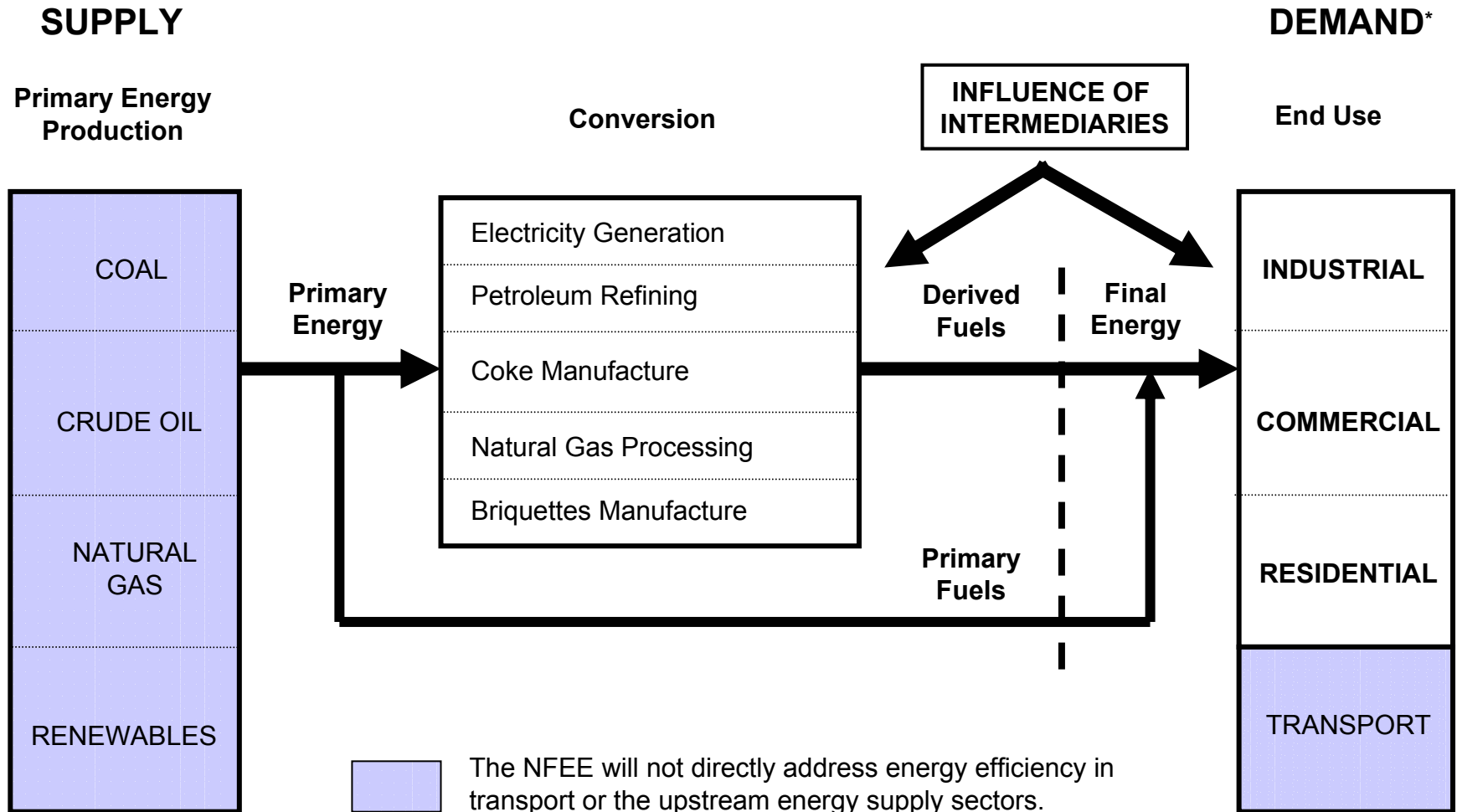
Energy intensity

Goal : reduce the ratio of energy input to outputs

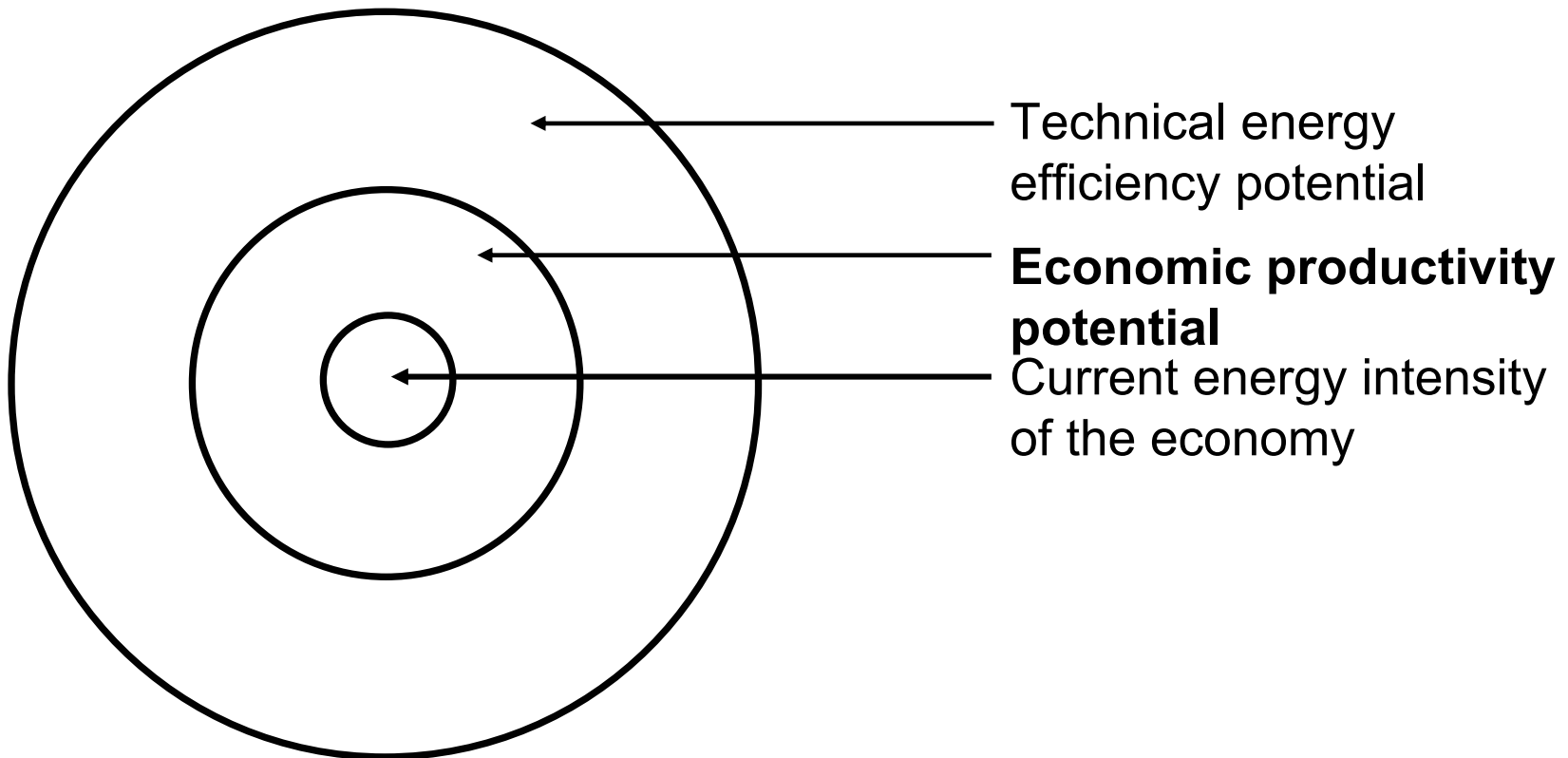
Energy productivity

Goal : business productivity and profit

Scope of the National Framework for Energy Efficiency

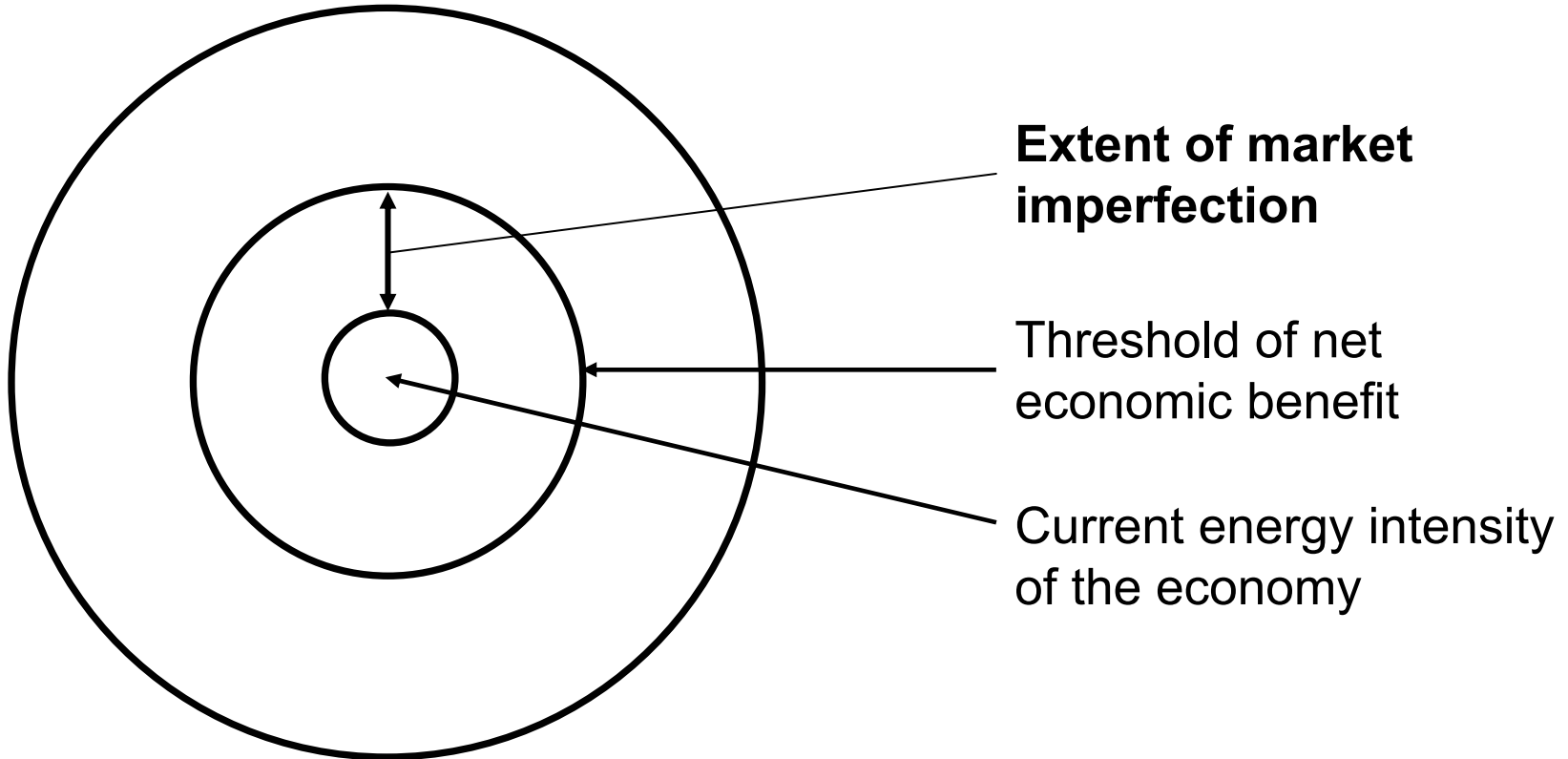


Energy Productivity Potential



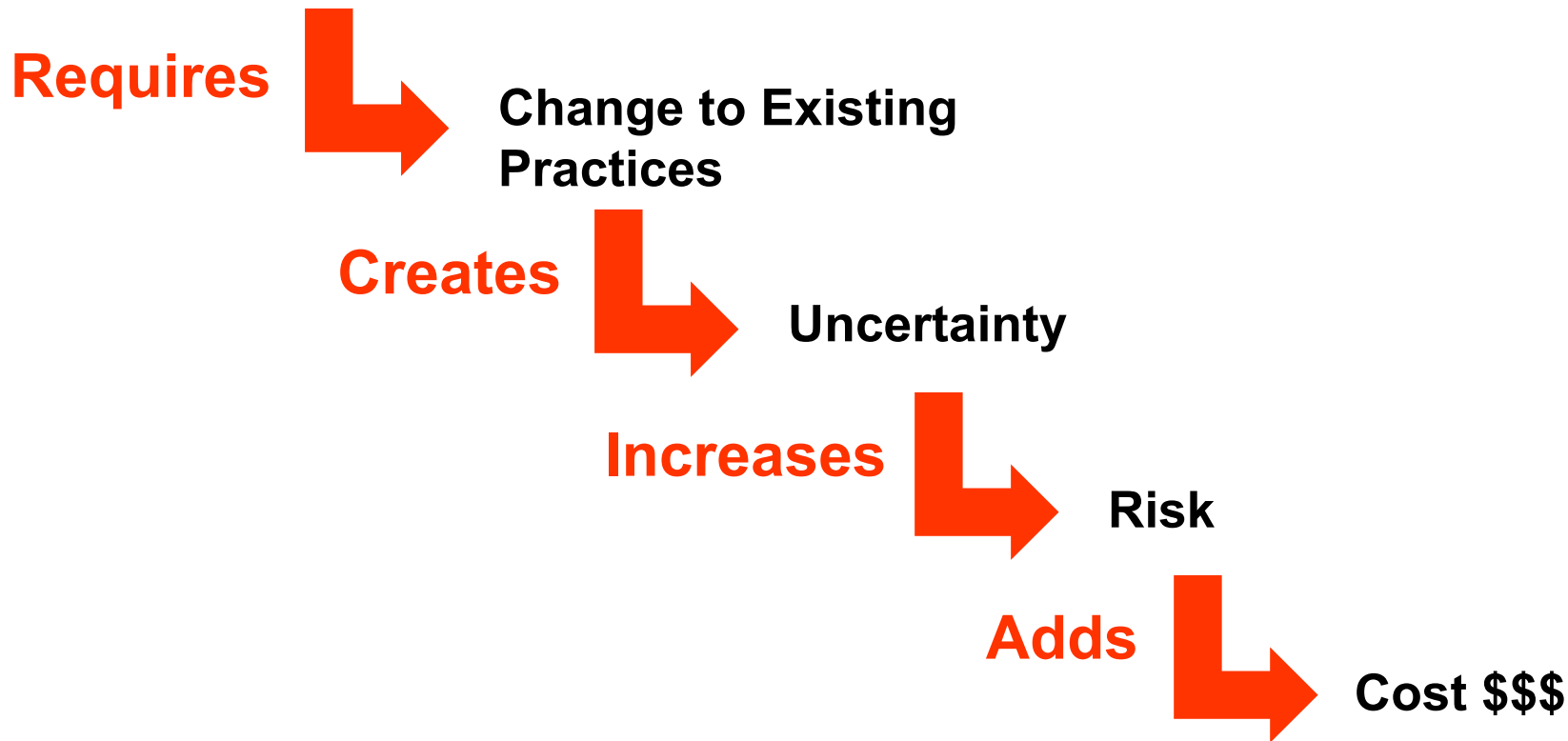
**In a perfect market
economic productivity potential = actual energy intensity**

Energy market imperfection



Barriers to Energy Productivity

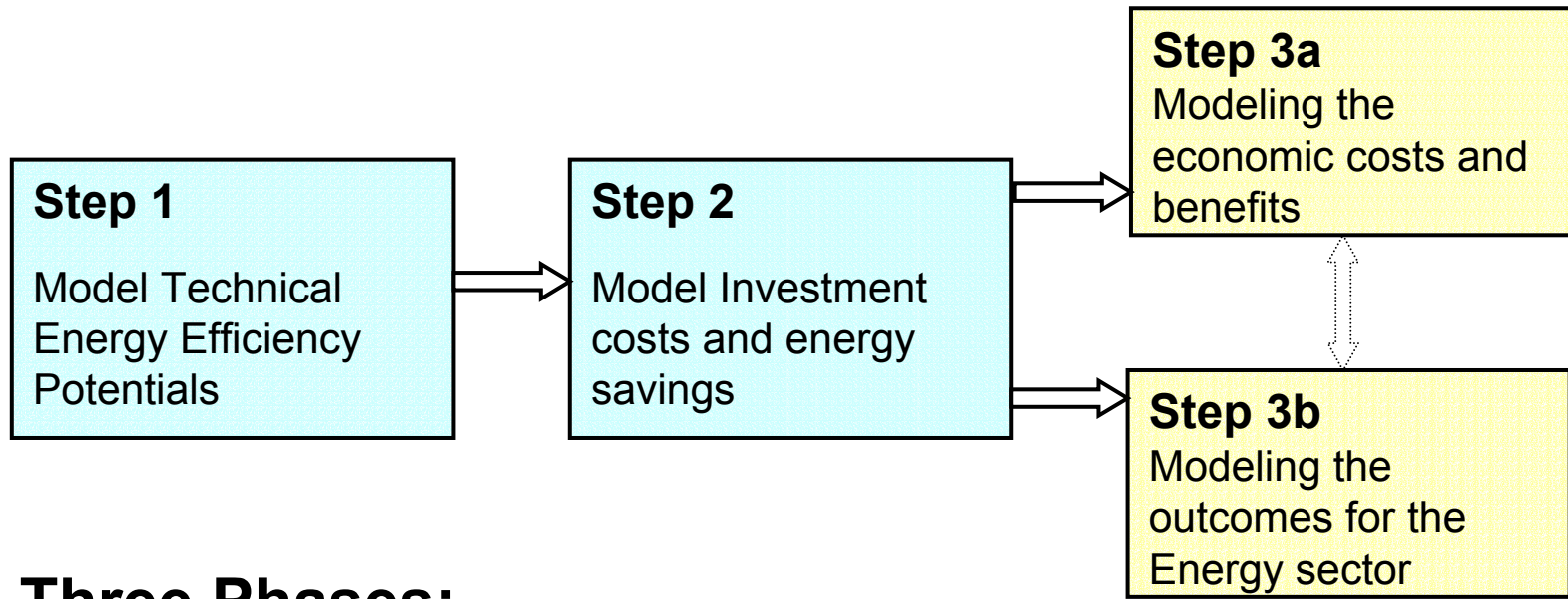
IMPROVEMENT IN ENERGY PRODUCTIVITY



Barriers to Energy Productivity

- Information
 - technical gaps in some areas
 - asymmetries create problems of agency
 - quality assessment for non-core investments
- Barriers to entry for energy services companies
- High transaction costs

Overview of the modelling approach



Three Phases:

1. Economy wide potential – sectoral averages
2. Economy wide potential - sector studies
3. National Energy Efficiency Target

Phase 1 : National Framework Discussion Paper Scenarios



Low scenario

(50% penetration of individual existing technologies over 12 years with average 4 year payback)

High scenario

(use of leading technologies & integration over 12 years with average 8 year payback)

Phase 1 : National Framework Discussion Paper Outcomes



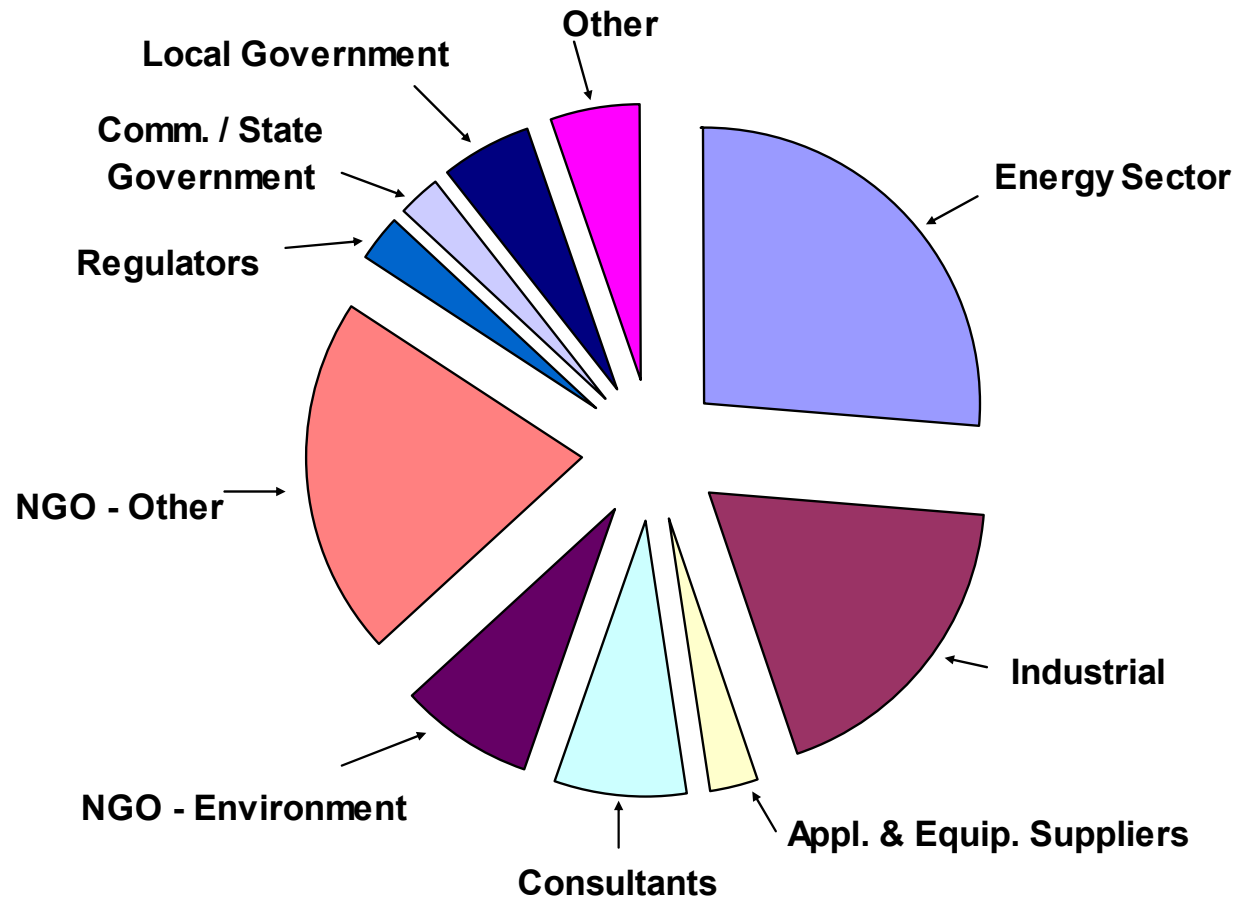
Low Scenario

Real GDP	+1.8
\$ Billion	(+0.2%)
Real Private Consumption	+1.8
\$ Billion	(+0.4%)
Employment	+9200
Jobs	(+0.1%)
GHG Emissions from stationary energy sector	-32
Mt of CO ₂ -e	(-9.0%)
Stationary final energy consumption PJ	-213
	(-9.0%)

Stakeholder Response to Discussion Paper

- Discussion Paper provided to 420 different stakeholders
- Over 150 stakeholders directly consulted
 - 8 workshops across the country
 - face-to face meetings
 - stakeholder input from industry, government, community groups and NGOs
- 65 written submissions
- Modelling Workshop

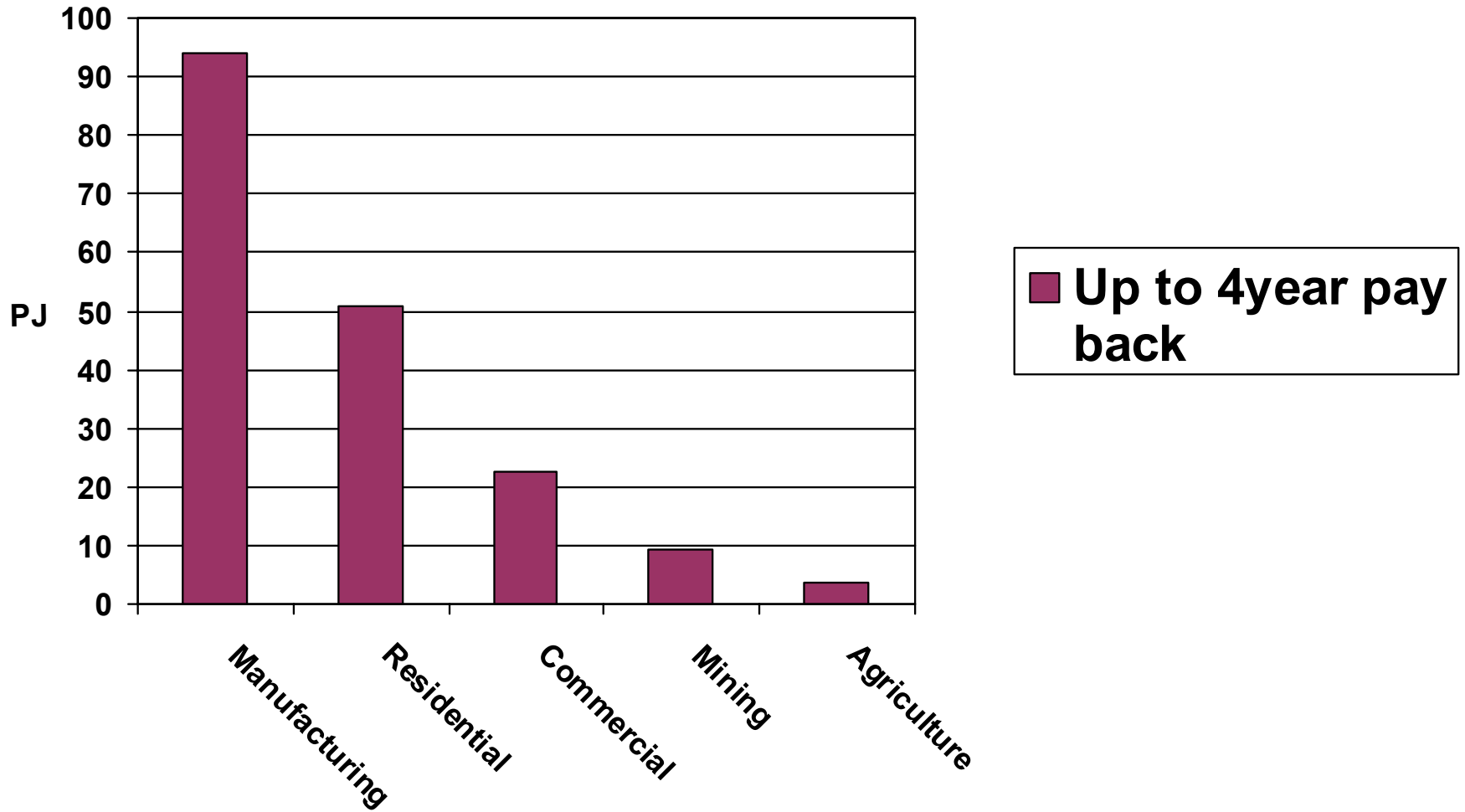
Stakeholder Submissions



Energy productivity potentials : Two Scenarios

Sector	Av. 4-yr payback Discussion Paper	Up to 4-yr payback Sector studies
Industrial	22.0%	6.4%
Commercial	27.6%	10.4%
Residential	31.4%	13.0%

Total National Energy Savings Potential



Comparison of economic impact – phases one, two and three

Variable	Unit	Phase One ¹ Ave 4 year payback	Phase Two ¹ Up to 4 year payback	Phase Three ² 1% NEET
Real GDP	\$ Billion	+1.8 (+0.2%)	+0.97 (+0.1%)	+1.57 (+0.2%)
Real Private Consumption	\$ Billion	+1.8 (+0.35%)	+0.72 (+0.1%)	+1.03 (+0.2%)
Employment	Persons	+9200 (+0.09%)	+2600 (+0.02%)	+1940 (+0.02%)
GHG Emissions from stationary energy sector	Mt of CO ₂ -e	-32 (-9.2%)	-10 (-2.8%)	-16 (-5.4%)
Stationary final energy consumption	PJ	-213 (-9.1%)	-76 (-2.8%)	131 (-5.4%)

1. Year 12 change relative to base case 2. Year 10 change relative to base case

Questions?