

Energy Efficiency Policy and Practice in Australia

Creating opportunities through ESCOs and Energy Performance Contracts

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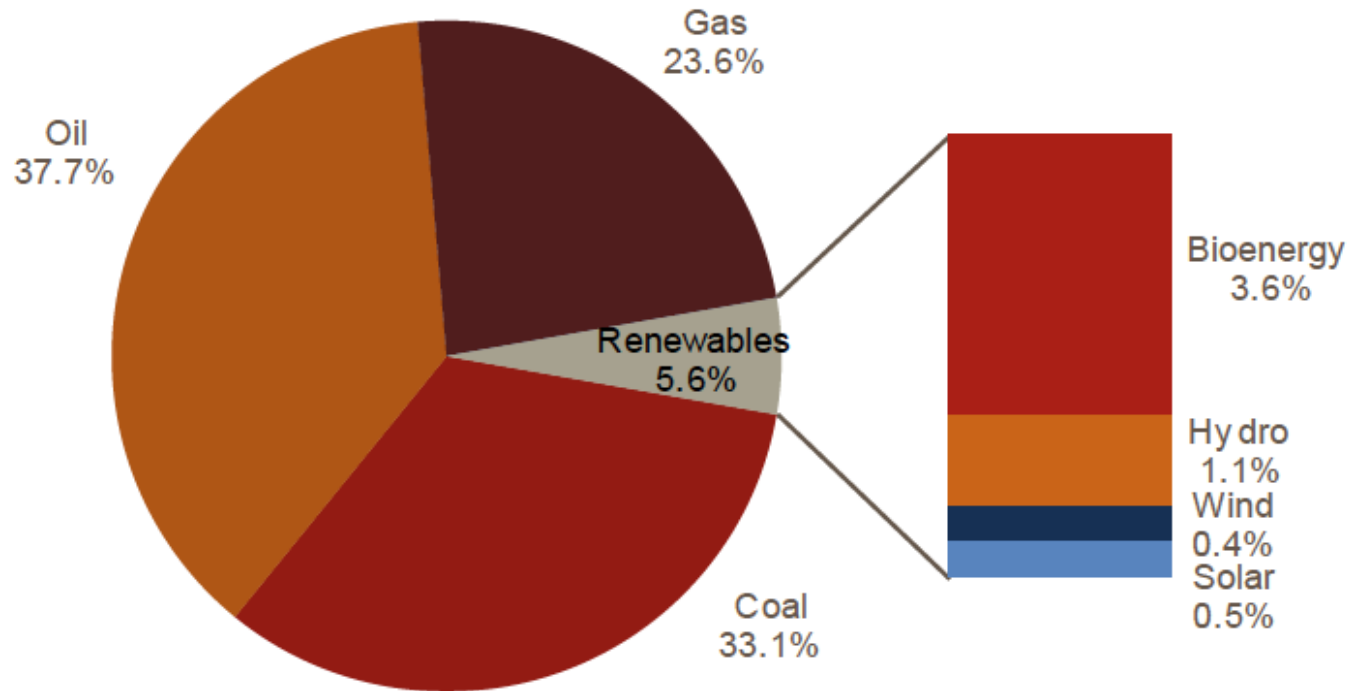
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Outline

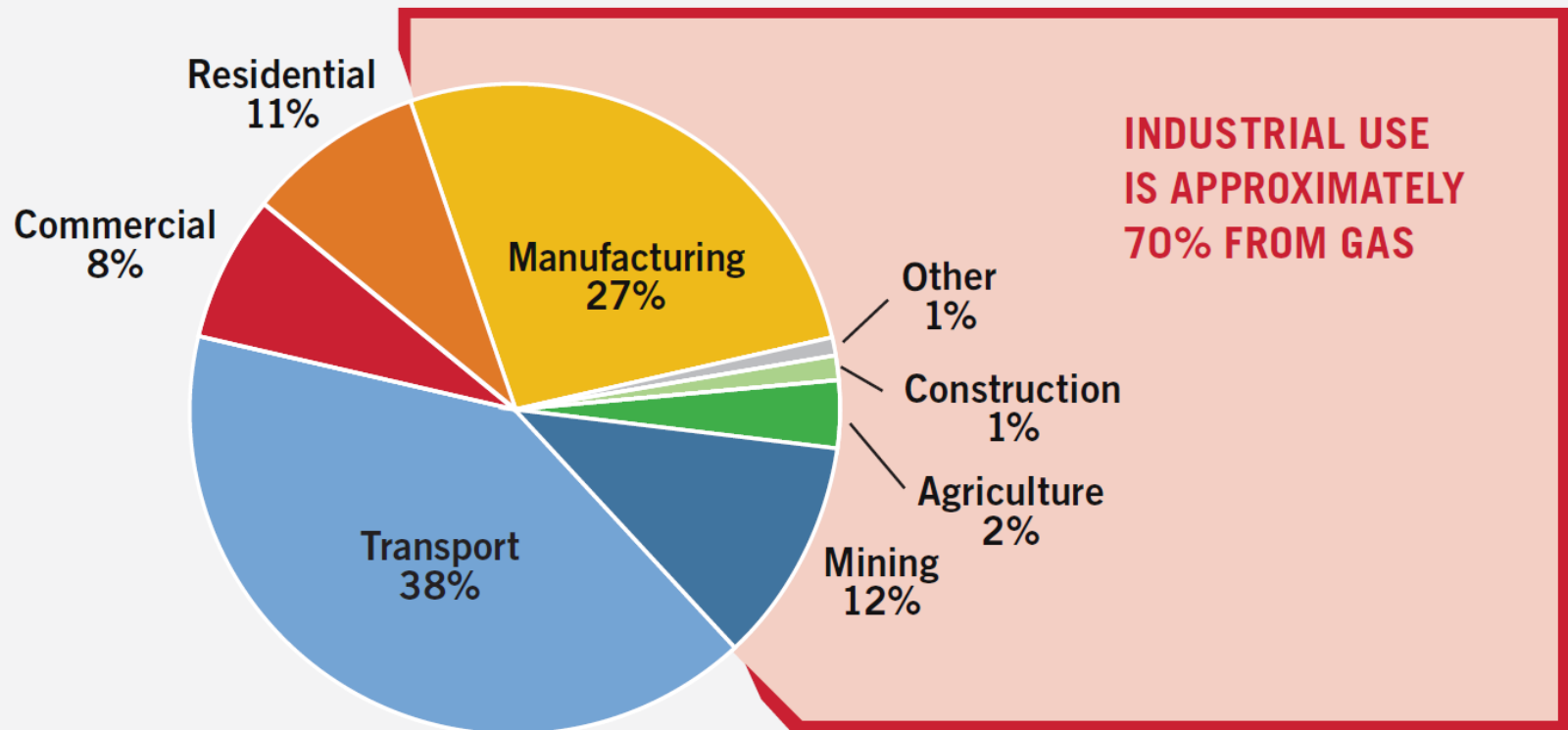
1. Australian energy consumption and energy productivity potential
2. Conditions that support energy efficiency improvement
3. Financing options in Australia
4. The ESCO opportunity
5. Lessons learned and recommendations

Australian 2012-13 primary energy consumption



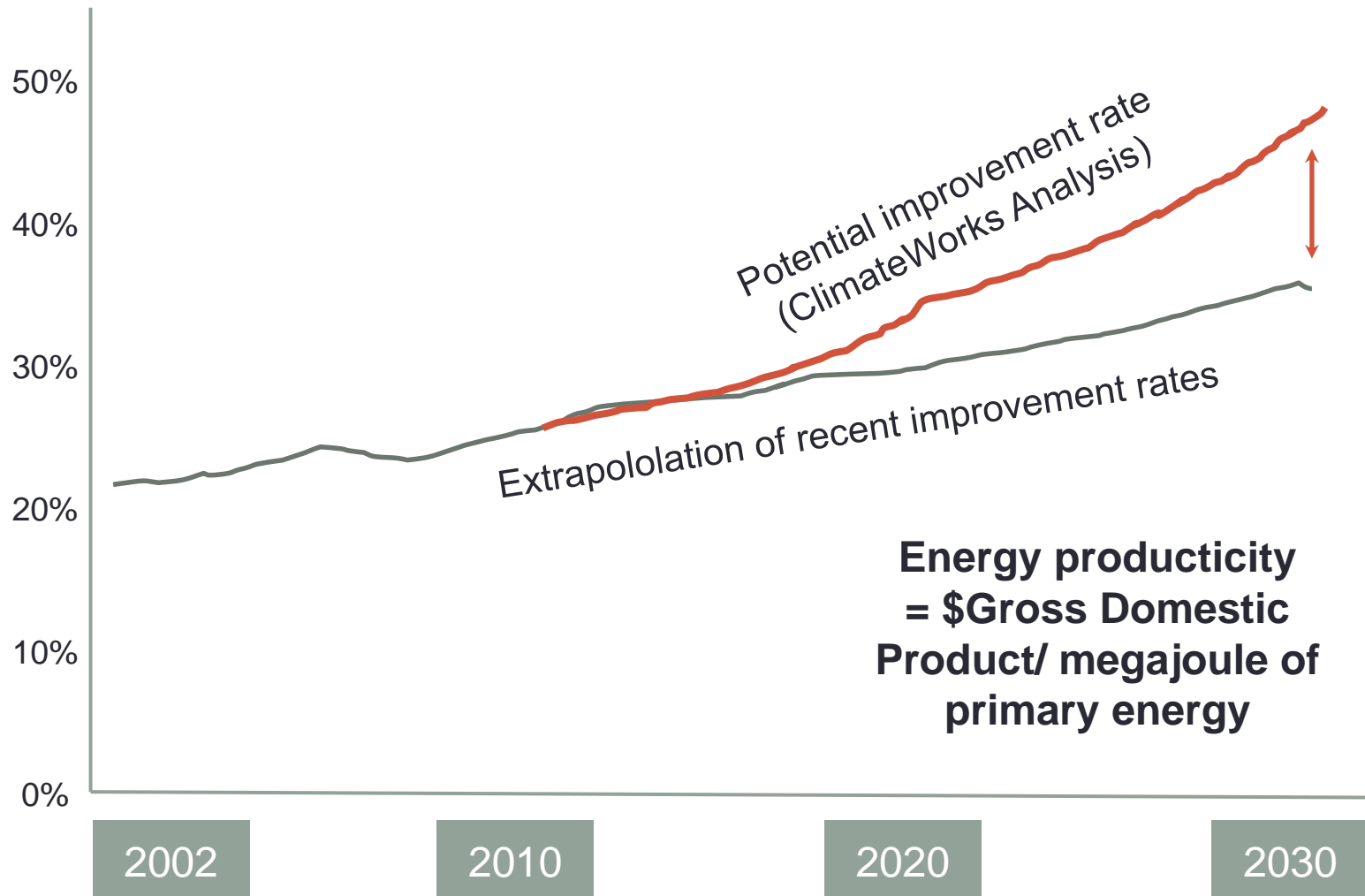
- Total consumption – 8,844 PJ
- 19th largest global consumer

Australian 2012-13 end use energy consumption by sector



The potential

– Energy Productivity in Australia to 2030 –



The Energy Efficiency Opportunities Act

– Achievements –

- Introduced in 2006
- Large energy users required to conduct energy efficiency assessments and report on the outcomes
- In first five years identified opportunity potential of 164PJ of which half were adopted
- Annual net financial benefit of adopted savings of \$808 million
- Annual emissions abatement of 1.5% of Australia's total emissions in 2010-11

The Energy Efficiency Opportunities Act

– Carbon reduction context –

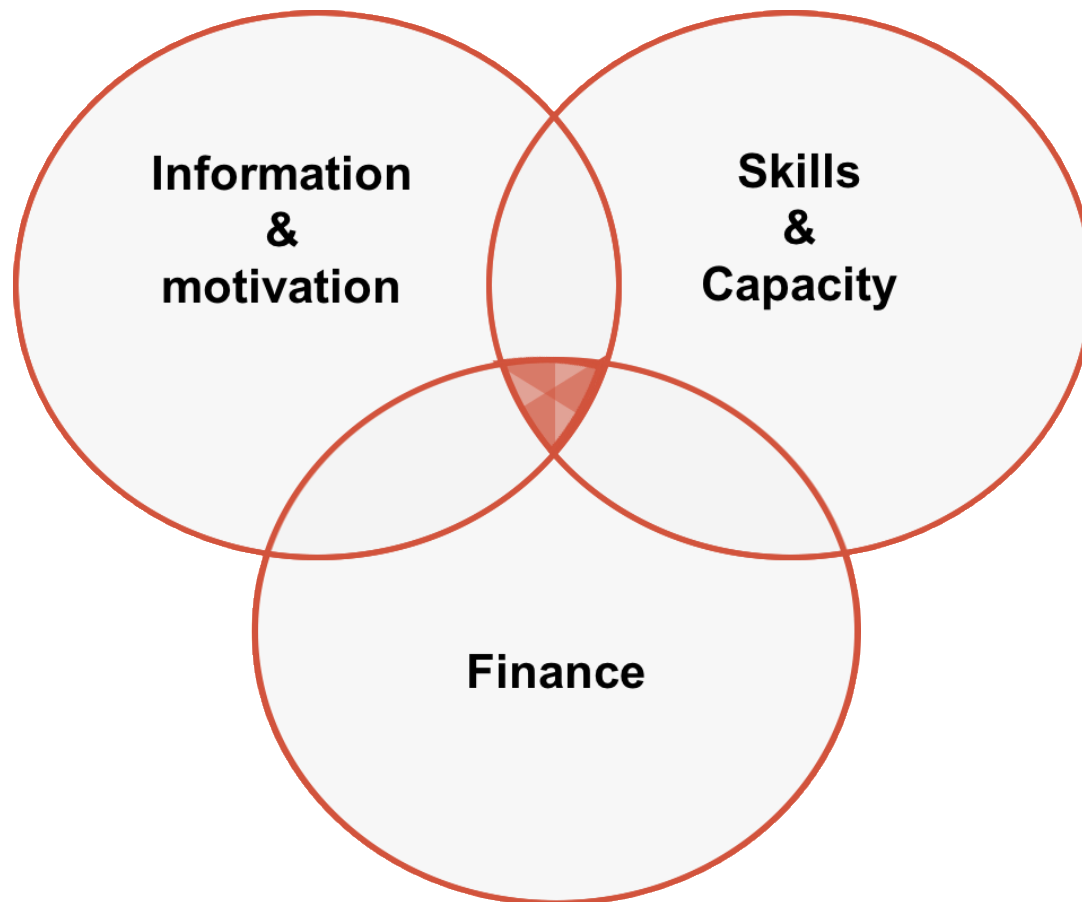
Industry sector	Identified emissions reductions (Mt CO ₂ -e)	Financial benefits (\$m)	Financial savings if implemented (\$/tonne CO ₂ -e)
Manufacturing	6.80	\$412	\$60.62
Oil and gas	2.90	\$226	\$77.83
Mining	1.88	\$336	\$178.07
Transport	1.23	\$160	\$130.35
Services	1.69	\$109	\$64.41
All sectors	14.51	\$1,243	\$85.66

The Energy Efficiency Opportunities Act

– Lessons learned –

- Energy audits require a team-based approach to identify all opportunities and to broaden the value proposition for projects
- Comprehensive energy management systems are important – particularly energy information systems
- Energy champions at corporate and site level are critical
- It takes time to develop the knowledge, skills and capability within organisations and across the energy services sector
- Project implementation influenced by:
 - Risk appetite
 - Payback period
 - Capital requirements
 - Strategic priorities at the site and corporate level

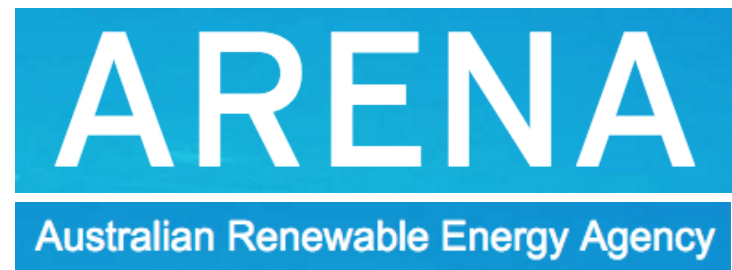
An integrated policy approach is essential



Finance

– Government options for industry –

The Emissions Reduction Fund



Finance

– Private sector options for industry –

- Energy Efficiency loans
- Operating and capital leases
- Environmental upgrade agreements
- Utility on bill financing
- Energy performance contract / Energy services agreement



Office of
Environment
& Heritage

**Energy Efficiency and Renewables
Finance Guide**

A Best Practice Guide to Energy Performance Contracts

reducing operating costs through guaranteed outcomes

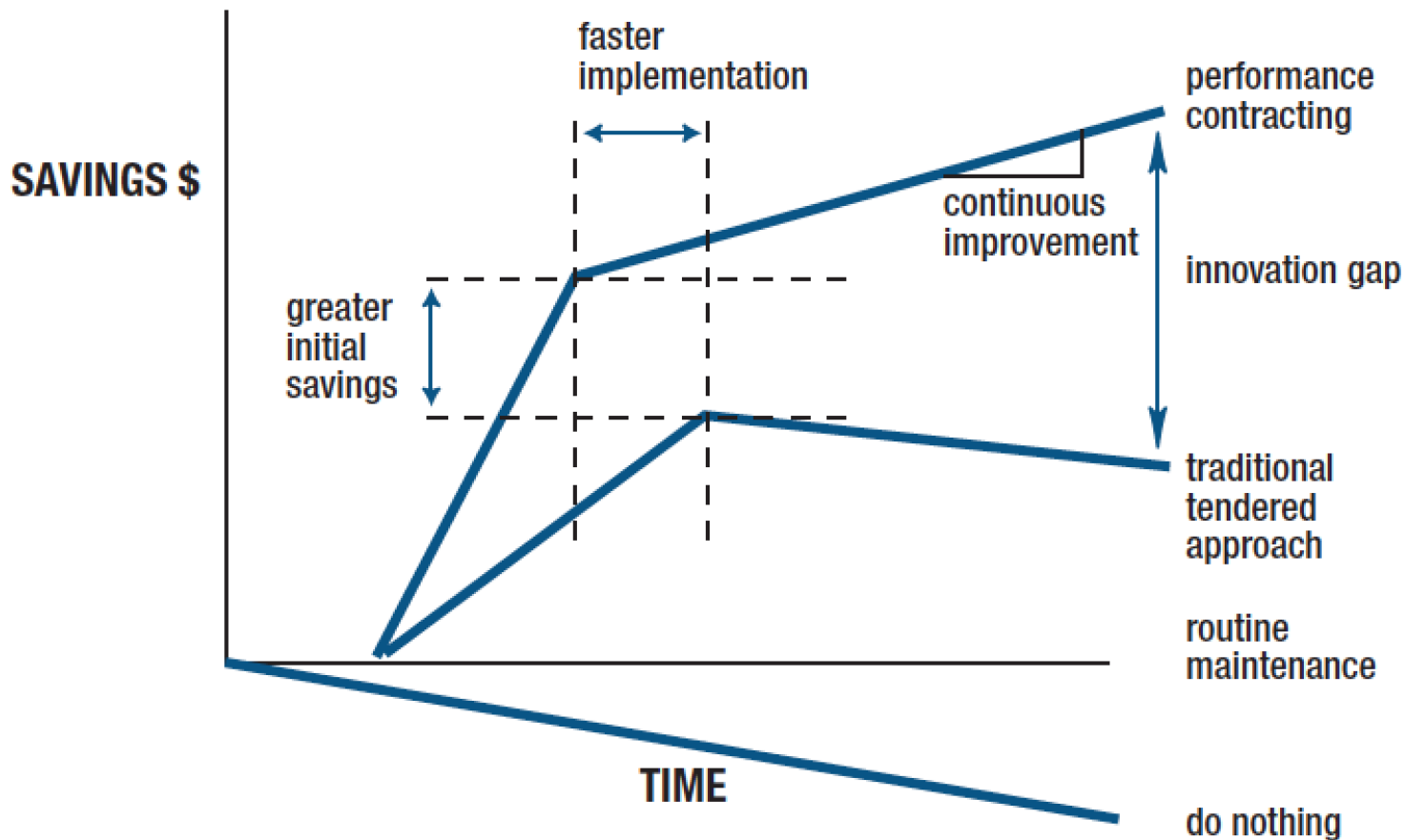


Developed in 2000 as a government/ industry collaboration. Still in use today.

Advantages of an Energy Performance Contract

- Shift technical risk to the ESCO.
 - perform as designed
 - remain within budget
 - be maintained or operate properly after installation
- Project funded out of cash flow rather than capital expenditure
- Guaranteed savings
- ESCOs bring specialist expertise

Advantages of an Energy Performance Contract



Its not for everyone ...

- If the organisation:
 - is not comfortable with a long term contractual relationship
 - does not have an appetite to adopt a relatively new and innovative approach
- If the project:
 - Is relatively small
 - Is difficult to measure and verify due to multiple influencing factors

5 steps – setting up an EPC in Australia

1. Decide whether to use an Energy Performance Contract
2. Select an Energy Service Company
3. Define the scope of the project
4. Negotiate an Energy Performance Contract
5. Modify the Standard Energy Performance Contract

Selecting ESCOs

- Consider experience with similar projects
- Listings established by the government and the Energy Efficiency Council assist end users

Lessons learned and recommendations

1. Maintain a 'business' as well as 'energy focus'

- Link projects to strategic priorities where possible
- Measure multiple benefits – not just energy savings
- Communicate and influence at multiple levels within the organisation

2. Support collaboration

- Tension between legal requirements and building confidence/ trust. Need to work together to achieve mutually beneficial outcomes
- Develop partnering processes and 'co-design'
 - “Share the problems then co-create solutions via workshops and stakeholder consultation and policy review

Lessons learned and recommendations

3. Encourage standardisation

- Contracts
 - Save time and effort
 - Build understanding, familiarity, confidence
- Measurement and verification methodologies
 - E.g. The International Performance Measurement and Verification Protocol (IPMVP)

4. Provide training opportunities

- On contractual arrangements as well as technical aspects
- Measurement and verification techniques
- Educate financiers as well as end users

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