Energy Management and Energy Efficiency Lessons from the EEO Program
Managing Energy – Australian Government Perspective

• Key drivers
  – Rising energy prices
  – Low cost abatement
  – Productivity

• Policy Responses
  – Energy White Paper
  – Carbon price fixed for 3 years before moving to an emissions trading scheme
  – Energy Market Reform
  – Demand Side Management

• Support Programs
  • Information: Energy Efficiency Opportunities Program (EEO), Energy Efficiency Exchange (EEX)
  • Incentives: Clean Energy Finance Corporation (CEFC), Australian Renewable Energy Agency (ARENA), Clean Technology Innovation Program (CTIP)
Energy Efficiency Opportunities (EEO) Program

Key Policy Drivers

- Key policy drivers:
  - to address information failures within business that impede prudent and objective decision making on cost effective energy savings opportunities;
  - to build industrial capability and capacity to identify, assess and implement energy saving opportunities,
  - to improve energy productivity and to deliver associated cost savings;
  - to facilitate ongoing / systemic behavioural change in organisations

- Is a unique program in that it sits half way between a voluntary program and a targets based compliance program
  - participation and assessments are mandated, but implementation of identified energy savings is not (that is a business decision for companies)
Energy Efficiency Opportunities (EEO) Program

Key Levers

• Mandatory Assessments
  – Rigorous
  – Verified

• Quality, evidence based information supported by data

• Involvement of decision makers
  – Technical
  – Financial
  – Senior management

Quality, evidence based information supported by data

• Reporting to the Board/ Public on assessment outcomes and business response
EEO Assessment Framework

Rigorous and Comprehensive Assessments

Leadership

People

Information, Data & Analysis

Opportunity Identification & Evaluation

Decision Making

Communicating outcomes

Six key elements
Effective Approaches for Energy Management

- Energy Optimisation Tools
- Theoretical Benchmarking
- International Collaboration in the use of ICTs to develop tool to allow for real time data analysis
  - Demand Side Management (government)
  - Demand Side Participation (Industry)
Energy Efficiency Opportunities (EEO) Program Implementation – Key Insights

- Importance of leadership support at all levels
- Involve people from a range of backgrounds
- Analysis of data key to identifying opportunities
- Link the business case to key business drivers and highlight additional business benefits
- Communication of successful projects to assist in building further support
- Involvement of the Board
- Public Testament of accuracy in reporting
EEO Program – Results

- Identified energy savings of 10%
- Implemented energy savings of 5.4%
- Equates to reported savings of over $800m a year
- 1.5% of Australia's greenhouse gas emissions.
- 38PJ = $320m under investigation
### Using Data to Improve Decision Making - Industrial Energy Efficiency Data Analysis (IEEDA) Project

#### Metal Ore Mining Sector: Identified energy savings by technology/process and fuel category

<table>
<thead>
<tr>
<th>Technology/Process/Equipment</th>
<th>Electricity</th>
<th>Gas</th>
<th>Oil</th>
<th>Total</th>
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<tbody>
<tr>
<td>Mining, earth moving and other mobile materials handling/excavation equipment</td>
<td></td>
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<td>6,141</td>
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<tr>
<td>Thermal electricity generation</td>
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<td>Other equipment</td>
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<tr>
<td>Pumping systems</td>
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<td>Comminution (crushing and grinding) and blasting systems</td>
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<td>Other process heating equipment</td>
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<td>Compressed air systems</td>
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<td>Ventilation systems, fans and blowers</td>
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<td>Other Building services</td>
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<tr>
<td>Conveyors</td>
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<td>HVAC Systems</td>
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<td>Combustion engines, turbines or electric drive systems -</td>
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<tr>
<td>Refrigeration</td>
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<td>0</td>
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<tr>
<td>Boiler systems</td>
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<td></td>
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<td>0</td>
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<tr>
<td><strong>Total</strong></td>
<td>3,795</td>
<td>956</td>
<td>9,032</td>
<td>13,782</td>
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</tbody>
</table>

*can help performance benchmarking and opportunity identification*
Metal Ore Mining Sector: Energy Efficiency Cost Curve

Can help identify which opportunities can offer the best returns
Barriers Analysis to inform policy

- **Medium barriers affecting most of the opportunity**
  - Operational risk (32%)
  - Decision cycle (40%)
  - Innovation premium (31%)
  - Access to information (37%)
  - Internal practices (23%)
  - Access to external finance (37%)
  - Opportunity cost (22%)
  - Supply chain (20%)

- **Very strong barriers affecting small part of the opportunity**
  - Regulatory barrier - Tax depreciation (7%)
  - Payback period (21%)

- **Stronger impediment**
  - Regulatory barrier - cogen (0%)
  - Non-market pricing (1%)

Source: ClimateWorks Australia (2012) Industrial Data Project
Food and Beverage Manufacturing

Why be energy efficient?

Tight profit margins and rising energy prices create a strong case for energy efficiency in the food and beverage sector. Reducing energy costs through investment in energy efficiency can make a significant difference to the bottom line.

Additional benefits can be delivered through lower water and chemical costs: increased plant productivity and improved product quality. A focus on energy efficiency can also enhance customer loyalty and a company’s reputation for responsible environmental performance.

Opportunities

Food and beverage processing plants are large users of energy for refrigeration, cooking, heating, boilers and steam generation, sterilising, conveyors and auxiliary equipment. Significant energy savings can be achieved through the following strategies: