Trends In Energy Efficiency - An Energy User's Perspective

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Plastics and Chemicals Industry Summary

- Fourth largest manufacturing sector by turnover ($21b.)
- 77,000 direct jobs in > 2800 companies
- Energy-intensive: Annual power bill > $100m p.a.
- Power between 1% and 8% of cost of goods sold
- Gas represents 0.5% to 22% of cost of goods sold
- P & C industries operate in global market; < 2% of global production
- P & C industries are price and technology takers

Plastics and Chemicals - Greenhouse and Energy Strategy

- P & C industries concerned about Greenhouse gas and energy consumption
- Responsible Care® Environmental Code of Practice - requires participating companies to work towards resource sustainability and the elimination of waste
- Regular PACIA Greenhouse Newsletter and website bulletin board to communicate with member companies

Plastics and Chemicals - PACIA Greenhouse Policy

- **Greenhouse policy adopted by PACIA Board:**
  - views climate change as a global issue
  - requires action now
  - industries, governments and communities must adapt to effects of climate change
  - committed to significant and lasting abatement measures to reduce Greenhouse intensity
- Greenhouse a standing item on every Board agenda

Programs undertaken by PACIA

- **Greenhouse Challenge**
  - covers 80% of member company emissions
  - five large members signed individual agreements outside PACIA programs
  - two specific projects undertaken:
    - Managing Energy for Profits - 1999-2000
    - Third Party Recruiting - 2000-2001

Greenhouse Challenge

- **PACIA:**
  - 34 companies, 54 sites
  - 10.8% savings identified; 119kta CO2
  - Potential energy saving: $6.5m p.a.
- **Individual companies:**
  - 5 companies
  - 6.8% savings identified
  - 508kta CO2

  After two years, est. 45%-50% of potential savings have been realised

State-based schemes

- **SEAV**
  - **Energy Smart Leaders Program**
  - **Energy Management in Practice**
    - Cost about $1500 for member companies
    - Practical programs aimed at energy reduction
    - Target EPA-licensed sites, members of Greenhouse Challenge, sites without current expertise and no recent audits, and those wishing to improve environmental performance

State-based schemes

- **SEAV:**
  - **Energy Smart Leaders Program**
    - 10 companies
    - Identified savings 38kta CO_2
    - Estimated savings: $1.7m p.a.
  - **Energy Management in Practice**
    - 6 companies
    - Identified savings 11kta CO_2
    - Estimated savings: $0.6m p.a.

  Overall, 5%-10% savings; identified 178 projects; paybacks from immediate to three years (many < 1 year); half of opportunities implemented in 1-2 years

What has been achieved

- Factory and Warehouse lighting:
  - reassessed needs; auto switching
  - savings $10,000 p.a., two-year payback
  - improved worker morale
- Energy, Process and Mngmnt Changes (Chems):
  - audits + training = optimised air compressors, lowered cooling water temp to refrigeration plant
  - saved 10kta CO_2, 123m litres water
  - savings $590,000 p.a.; investment - minimal

What has been achieved

- Feedstock changes (Orica):
  - replaced LPG/Naptha with ethane
  - higher product yield, lower CO2, lighter footprint
  - improved energy metering, replaced electrical/hydraulic pumps with steam turbines, tree planting (carbon sinks), Greenfleet for company vehicles, electronic energy tracking
  - culture change within company

What has been achieved

- Plastics Fabricator:
  - was sending paper packaging to landfill
  - recycling saved several tonnes of CO2 and $'s
- Other efficiencies:
  - insulation of hot/cold piping and equipment
  - compressed air generation, distribution systems
  - steam generation, distribution systems
  - lighting, heating and air conditioning
  - "Greenfleet"; metering of energy flows to accurately monitor energy usage

Greenhouse seminars

- Member Companies support:
  - accelerated depreciation/tax incentives for energy efficient investments
  - Greenhouse Challenge Program Mk 2
  - education and awareness activities, including Enterprise Bargaining Agreements

Issues for P&C Companies

- Ensure translation from Program to Management System
- Capital investment is high
- Long investment cycles for large plants
- Timing of investments/plant modifications
- Larger energy users practising conservation since 1974 - lower hurdle rates for energy projects
- Mega-sites deliver 25% savings
- Small companies need different approach
- Paybacks must be within 1-2 years

What's next?

- Business-Government Climate Change Dialogue (Canberra, 14 April)
- Repeat the Energy Management in Practice Program
- Seek to extend the Program to other states
- Promote Greenhouse debate and continue raising awareness in the industry
- Promote Greenhouse Challenge through another series of seminars

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THANK YOU

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