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 CO2
 - Estimated savings: \$1.7m p.a.
- Energy Management in Practice
 - 6 companies
 - ◆Identified savings 11kta CO2
 - ◆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 CO2, 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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