

Benefits of Source (Upstream) Reduction in the Context of Resource Efficiency

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Why Source Reduction?

- Significant growth in human population, consumption patterns, urbanisation and industrialisation
- Cities are unable to manage the increasing amounts of waste
- Rapidly diminishing resources such as metals
- Most logical option is to reduce the waste at its source

What is Source Reduction?

- Source reduction is not about management of waste; instead it is the management materials and processes to prevent the generation of waste
- It is prevention-oriented, problem-solving strategy
- Uses a variety of tools to improve the efficiency of production processes and improve profitability
- Source reduction is also a business-focused, profit-driven approach
- Many source reduction improvements require little or no initial investment or have rapid payback

What are the benefits of Source Reduction?

- Increased profitability
- Reduced input materials and energy costs
- Reduced waste costs
- Improved product quality
- Avoidance of potential regulatory and compliance costs
- Reduce/avoid long-term liabilities
- Improved worker health and safety
- Reduced environmental pollution
- Improved company image to community and customers
- Increased competitive advantage

How Source Reduction could be achieved?

- Changing attitude (new approach or re thinking the process)
- Applying know-how (improving efficiency, better housekeeping)
- Improving technology (changing process, input materials or final product)

Source Reduction Approaches

- Housekeeping
- Input Substitution
- Product Reformulation
- Efficiency Improvement
- In-process Recycling

Source Reduction Success Stories

Bonlac Foods Ltd produces dairy products and is Australia's largest dairy producer with an Annual turnover of over \$1 billion.

Changing the chemical used in cleaning process resulted in less acid use in cleaning, reduced cleaning time therefore reduced consumption of water and electricity. Net savings are \$97,000 per year

Source Reduction Success Stories

Australian Dyeing company has achieved 45% reduction in water consumption, 33% reduction in electricity consumption and 100% reduction in salt consumption by adopting source reduction practices

Source Reduction Success Stories

- Capilano Honey Ltd, the fourth largest honey packer in the world producing around 80 percent of the honey sold in Australia.
- The eco-efficiency assessment identified savings of more than \$120,000 a year in potential eco-efficiency opportunities with a pay back period of one year or less.

What are the Barriers for Implementing Source Reduction?

- A lack of information and expertise
- A low awareness of environmental issues
- Pressure for short term profits
- Financial obstacles
- Lack of communication in firms
- Middle management inertia
- Labour force obstacles
- Difficulty in implementing cleaner technology
- The failure of existing regulatory approaches
- Difficulty in accessing cleaner technology
- Difficulty in accessing external finance

What are the Motivators for Implementing Source Reduction?

- Environmental management systems
- Voluntary initiatives
- Environmental leadership
- Corporate environmental reports
- Environmental accounting
- Improvements in productivity
- Innovative regulation and pollution prevention
- Negotiated self-regulation
- Economic incentives
- Education and training
- Industry networking

Source Reduction in SMEs

- Around 90% of all enterprises are considered to fall into SME category
- Number of SMEs currently practicing source reduction is negligible in many countries
- Lack of time, resources and awareness of incentives are major reasons
- Need for a support system to work with SMEs to raise their present level of environmental awareness.

Source Reduction Initiatives in Australia

- **ecoBiz** is the Queensland EPA's partnership program with Queensland business and industry. **ecoBiz** assists businesses identify resource efficiencies through source reduction
- The Environment and Resource Efficiency Plans (EREP) Toolkit provides Victorian business with the necessary information to achieve resource efficiencies

Development of Source Reduction Policies and Strategies

- Information and awareness to enable industry, governments and the community to make appropriate decisions must be readily accessible, and effectively provided.
- Adequate management and analysis tools and systems must be readily available for industry to be able to adopt source reduction.
- Regulatory systems must be designed to provide incentive structures for the adoption of source reduction.
- The market for goods and services must be strengthened by eliminating market distorting practices.

Role of International Agencies in Promoting Source Reduction

- Influencing national policy and administrative authorities to implement source reduction
- Assisting in areas such as training, demonstration projects, case studies and technology transfer.
- Helping to overcome barriers to source reduction

Role of International Collaborative Research Activities towards Source Reduction

- Better assessments to identify source reduction opportunities;
- Evaluation of economic and environmental impacts of source reduction;
- Determining the effectiveness of source reduction policies;
- Developing new policies and strategies for implementing source reduction;
- Identify the barriers and motivators for source reduction;
- Financing of pilot/demonstration projects on source reduction;
- Development of cost-effective and affordable source reduction technologies;
- Enhancing the capacities among researchers in the region

AusAID Development Research Strategy

- To develop partner country capacity to solve local problems
- To build a stronger evidence base for policy and programs
- To create incentives for innovative ideas and strategies to address existing and emerging development challenges
- To deepen the pool of academic expertise about and within countries in the Asia-Pacific region