



Profiting from Cleaner Production

Towards Efficient Resource Management



United Nations Environment Programme
Division of Technology, Industry and Economics

Conserve Resources to Boost Business

Cleaner Production brings together economic interests and environmental concerns, making businesses more profitable while helping countries grow in a sustainable way. It starts with efficient use of resources and results in better investments and business opportunities.

“When competent companies adopt the principle of eco-efficiency they turn out important innovations. . . . It will not just be about technology and economics but also about framing the market and about creating new partnerships across the traditional boundaries of business and politics.”

Claude Fussler

*Director of Stakeholder Relations,
World Business Council for Sustainable
Development (WBCSD)*

*7th International High-level Seminar
on Cleaner Production*

Prague, Czech Republic (April 2002)

Respect for the environment offers real financial rewards for all involved.

- **Financial institutions** that invest in or lend to companies using Cleaner Production methods get a better return on investment.
- **Companies** that implement Cleaner Production methods are more productive and cost-effective.
- **Government agencies** that support Cleaner Production foster economic development.

Cleaner Production is not a one-time solution or a reactive response. It is a continuous strategy that helps prevent environmental damage by reducing waste and minimizing environmental risk. And these practices reduce costs associated with inefficiencies and risk.

Implementing Cleaner Production strategies:

- Lowers production costs
- Increases productivity
- Facilitates efficient use of resources
- Results in safer and better products and services
- Reduces pollution levels and risks for humans and the environment
- Helps companies comply with Environmental Management Systems and facilitates ISO 14000 certification.



Different institutions use varying terms to discuss Cleaner Production.

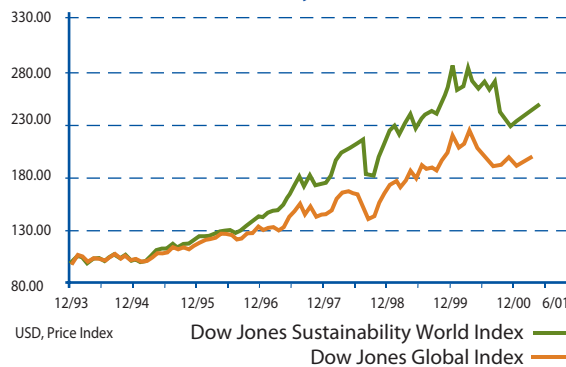
Reap the Benefits

Cleaner Production helps financiers secure better clients and make more profitable investments, reduces manufacturing and environmental costs for companies and assists government agencies in their pursuit of a safer and healthier environment.

Reduce exposure to risk

Finance Cleaner Production projects to benefit from improved cash flow and more rapid return on investment. Companies practicing Cleaner Production reduce environmental and business risks, thereby increasing their credit-worthiness. You can also improve your financial performance by building a portfolio of environmentally sound and socially responsible investments.

Dow Jones Sustainability World Index



Increase profits

Implement Cleaner Production to make your company more cost-effective. Use materials, energy, fuel and other resources more efficiently and cut costs of waste disposal and input purchases. Your company will become more competitive, as Cleaner Production practices improve your image and the quality and safety of your products. Cleaner Production also reduces environmental, health and liability risks. And by conforming to environmental standards, your company can export to new markets.



The visible costs of waste are just the tip of the iceberg.

Support developing economies

Support Cleaner Production to help countries develop and ensure that resources and energy are used efficiently. Government agencies that support Cleaner Production encourage sustainable economic development and a healthier environment for everyone.

“The present world production system is not sustainable because of the constant increase of resources used and waste produced. . . We need to accommodate more growth whilst using less material and energy. To match the unavoidable future increase of the world’s throughput, we must increase our efficiency, adopt new technologies faster and stimulate radical innovations.”

Christian Kornevall

Senior Vice President, ABB

**7th International High-level Seminar
on Cleaner Production**

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Simple Steps, Big Benefits

Cleaner Production practices are easy to put into action and you can make a quick and substantial return on investment. Even a small investment in Cleaner Production can produce major economic savings.

Financial institutions	
Cleaner Production Steps	Example
Evaluate potential investments and clients according to Cleaner Production criteria	Include Cleaner Production criteria in investment appraisal, loan application procedures and credit rating
Develop new financial products linked to Cleaner Production	Offer lines of credit at more favourable interest rates to companies implementing Cleaner Production strategies

Government agencies	
Cleaner Production Steps	Example
Integrate Cleaner Production into all public policy domains	Enact laws that promote Cleaner Production
Encourage and enforce Cleaner Production practices	Promote environmental regulations and institutions to enforce Cleaner Production practices
Create financial incentives for Cleaner Production	Create tax exemptions and lines of credit for Cleaner Production projects
Set marketplace pricing for utilities	Set prices for energy and water at a level which encourages recycling and higher efficiency

Grinding down to the bottom line

Problem: A mid-sized coffee company in Africa roasts 1,000 pounds of coffee every hour. The roasting drum is heated by natural gas burners that consume large quantities of gas. During the roasting process, the coffee beans lose weight through evaporation of water and the breakdown of their sugars and oils. This results in a 10% loss of coffee flavour and volume.

Solution: The company implements a system of on-site recycling. It installs a heat funneling system that retrieves heat emissions from the burners, using the heat to warm up the drums before roasting begins. The company also uses an oil bath to trap emissions from the roasting process, adding them to the coffee to intensify flavour and increase production volume.

Results:	Investment	\$35,795
	Annual savings	\$32,932
	Payback period	1.1 years
	Recycled gas energy	
	Better-tasting coffee	
	More coffee	

Companies	
Cleaner Production Steps	Example
Good housekeeping	A paint manufacturer processes light shades before dark shades to avoid cleaning vats between batches
Changing technology or equipment	An electroplating company replaces an open-loop, once-through rinsing system with a system that recycles water to reduce water consumption
Redesigning products	A flashlight manufacturer replaces ordinary dry cell batteries with a manually-powered dynamo system to avoid using batteries and waste generated from used batteries
Modifying or controlling process	A hotel lowers the temperature of hot water for laundry from 96°C to 60°C to save gas and energy
Substituting input materials	A printing company replaces solvent-based ink with water-based ink to reduce harmful emissions of solvent fumes
Recycle or reuse materials	A foundry recuperates used sand from old moulds to make new moulds
Produce useful by-products	A tannery gathers hair removed from hides and sells it as organic fertilizer

A printing company cleans up its act

Problem: A small printing company in Southeast Asia wants to reduce excess consumption of ink and paper due to certain errors that occur during the printing process. The incorrect printed material must be discarded and the printing process started again from the beginning. Printing errors also increase emission levels of ink and glue fumes into the air as re-printing means using twice as much of these products. The wasted materials cause financial losses and the company's employees face serious health risks due to overexposure to noxious fumes.

Solution: The company installs a camera system to detect printing errors early in production and thereby avoid re-printing the same document twice. Improving quality control reduces ink and paper costs and the volume of ink and glue fume emissions.

Results:	Investment	\$105,000
	Annual savings	\$38,463
	Payback period	2.7 years
	Ink & paper costs, emissions reduced by 40%	

Build Your Cleaner Production Skills

Training is critical to reaping the full financial and environmental benefits of Cleaner Production. UNEP has developed a series of PowerPoint presentations and awareness-raising and skill development programmes on financing Cleaner Production. The presentations are available in electronic version or hard copies and the programmes are available on CD-ROM at www.earthprint.com.

Profiting from Cleaner Production: Short Presentations for Senior Executives

- Companies (CP Exec 1)
- Financial Institutions (CP Exec 2)
- Government (CP Exec 3)

These PowerPoint presentations are intended to motivate senior executives and decision makers in financial institutions, companies and government agencies to implement Cleaner Production strategies. Each presentation runs about 45 minutes and is 20-25 slides long.

ISBN: 92-807-2200-X

Profiting from Cleaner Production: Resource Kit for Training

- Introduction to Cleaner Production Concepts and Practice (CP 1)
- Introduction to Capital Budgeting and Funding of Projects (CP 2)
- Profiting from Cleaner Production (CP 3)
- The Cleaner Production Investment Process (CP 4)

These 1-day and 2-day skill development programmes initiate employees, managers, financial representatives, accountants and government agents in Cleaner Production practices, funding and implementation. A Trainers' Guide accompanies the programmes.

ISBN: 92-807-2201-8

UNEP DTIE

United Nations Environment Programme Division of Technology, Industry and Economics

The mission of UNEP DTIE is to help decision makers in the financial sector, industry and government adopt policies and practices that:

- Are cleaner and safer
- Make efficient use of natural resources
- Incorporate costs associated with environmentally irresponsible behaviour
- Reduce business and environmental risks
- Minimize pollution and risks for humans

"Financing Cleaner Production" is a project launched by UNEP DTIE in 1999 under a trust fund from Norway to increase investment levels for Cleaner Production in developing countries.

Find Out More About Cleaner Production

UNEP DTIE has developed a full range of information resources about Cleaner Production and how it can help you invest and lend more wisely, improve business and develop new economies. To find out more about how you can manage your resources efficiently, please consult the following websites and publications.

Websites

UNEP/DTIE Cleaner Production

www.uneptie.org/cp

UNEP/DTIE Cleaner Production Financing

www.financingcp.org/

United Nations Industrial Development Organization

www.unido.org

Sustainable Alternatives Network (SANet)

www.SustainableAlternatives.net

Publications

All of the following publications are available in electronic version or hard copies at www.earthprint.com.

Cleaner Production: A Guide to Sources of Information

The fourth edition of a popular resource listing Cleaner Production-related organizations, publications, electronic resources, training courses, etc.

ISBN: 92-807-696-4

Financing Cleaner Production: A Study on Past Investment Practices

A report on the first phase of a UNEP project promoting Cleaner Production investments in developing countries.

ISBN: 92-807-1951-3

Profiting from Cleaner Production: Checklists for Action

A set of checklists to guide financial institutions, businesses and government agencies as they implement Cleaner Production strategies.

ISBN: 92-807-2202-6

Each of the three volumes of Cleaner Production guidelines offer hundreds of suggested activities to aid successful implementation of Cleaner Production strategies.

International Declaration on Cleaner Production:

Implementation Guidelines for Companies

ISBN: 92-807-2094-5

International Declaration on Cleaner Production:

Implementation Guidelines for Governments

ISBN: 92-807-2093-7

International Declaration on Cleaner Production:

Implementation Guidelines for Facilitating Organizations

ISBN: 92-807-9095-3

This booklet is designed to raise awareness about how Cleaner Production can help financial institutions, companies and the public sector manage resources more effectively, make better investments and improve business opportunities. It includes case studies and outlines actions that can be taken to implement and reap the benefits of Cleaner Production methods.

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