

Eco – Efficiency Assessment

The term eco-efficiency was coined by the World Business Council for Sustainable Development (WBCSD) in its 1992 publication "Changing Course". It is based on the concept of creating more goods and services while using fewer resources and creating less waste and pollution. Since its introduction at the Rio Earth Summit in 1992, the concept of eco-efficiency has been internationally recognised as the way business can contribute to the sustainability of our society.

It recognises the benefits of combining economic and environmental objectives. By being eco-efficient, goods and services can be produced with less energy and fewer raw materials, resulting in less waste, less pollution and less cost. The main objective of eco-efficiency is ecologically **sustainable development**. The World Business Council for Sustainable Development (WBCSD) describes eco-efficiency as a management strategy of doing more with less. In practice, eco-efficiency is achieved through the pursuit of three core objectives:

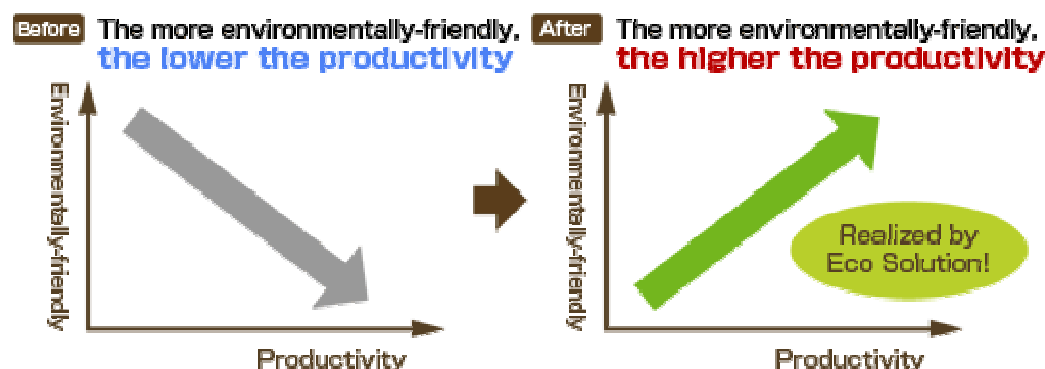
1. Increasing product or service value;
2. Optimizing the use of resources; and,
3. Reducing environmental impact.

$$\text{Eco Efficiency} = \frac{\text{Productivity}}{\text{Environmental impacts (Amount of CO2 emissions)}}$$

Higher eco efficiency leads to higher productivity, and less CO2 emissions.

$$\text{Progress Rate for Eco Efficiency} = \frac{\text{Eco efficiency after improvements}}{\text{Eco efficiency before improvements}}$$

A larger progress rate for eco efficiency leads to an increase in eco efficiency.





What is the scope of Eco-efficiency assessment?

It incorporates traditional concerns such as energy and materials consumption, together with major current environmental concerns such as global warming, waste handling, energy usage, packaging etc.

What are the benefits?

Because of the opportunity for cost savings associated with each of these objectives, addressing them makes good business sense. In fact, case studies of companies that have adopted eco-efficient technologies and practices demonstrate that eco-efficiency stimulates productivity and innovation, increases competitiveness and improves environmental performance.

- **Environmental:** Reduced emissions and materials consumption per unit of manufacturing or service output. Reduced risk and liability - by "designing out" the need for toxic substances;
- **Financial:** Unfavourable eco-efficiency trends may be an early warning of competitive decline. The eco-efficiency discipline brings together the financial, production, resource consumption and environmental damage aspects of an operation in a unique way. This allows a new overview of a company's performance to be obtained.
- **Perception:** Opportunity to show quantitatively, using internationally recognised indicators, the favourable development of the enterprise. (Many major companies have published their eco-efficiency profiles on the internet). Enhanced brand image can be achieved through marketing and communicating your improvement efforts;



Some key tools being utilized to implement eco-efficiency include:

Management systems

Environmental management systems (EMS) provide businesses with structured ways of managing areas of their operations that have risks for the environment. EMS give business and industry a means of setting objectives and targets to make continuous improvements into the future. They can apply for certification to standards such as ISO 14001 for their EMS.

Life Cycle Tools

Many companies are going beyond their own operational boundaries to examine the life cycle aspects of their products and the materials contained in those products. This approach enables better identification of cost-effective environmental improvement opportunities.

Supply chain management

Supply chain management, or 'greening the supply chain' as it is sometimes known, involves improving the processes and relationships that support the movement of goods and services along a supply chain.

Design for Environment

Integrating environmental considerations into the product development process. This leads to improved environmental performance, elimination of risk and liability, better choices with respect to selection of materials and processes, and in some cases enhanced quality and performance.

Public environmental reporting

Public environmental reporting is the public disclosure by a business of information about its environmental performance. This includes its impacts on the environment, its performance in managing those impacts and its contribution to ESD. Some benefits to be considered are:

- marketing opportunities
- increased confidence of investors, insurers and financial institutions
- improved relationships with regulators and non-government organisations



- greater control of environmental disclosure
- heightened staff commitment

Environmental accounting

Traditional accounting practices overlook the environmental costs of operating a business. Environmental accounting incorporates in a company's financial reports such costs as waste treatment and disposal, a poor environmental reputation, and environmental risk insurance premiums.

Ecological footprint

The 'ecological footprint' concept has been designed to estimate the impact of human activities on ecological systems. The ecological footprint of a business is the total amount of ecologically productive land and water occupied exclusively to produce all the resources consumed and to assimilate all the wastes generated by that business, using prevailing technology.

Methodology

The methodology which Enterprise Ireland uses is one developed by the World Business Council for Sustainable Development (WBCSD) as described in their report 'Measuring eco-efficiency: a guide to reporting company performance'.

Reporting /Eco – Efficiency Profiles

Upon completion of the Eco – Efficiency process profiles of the company are graphed for energy, greenhouse gas emissions, water consumption, total waste, waste to landfill, eutrophication, solvent emissions and packaging.

The completed Eco – Efficiency Reports together with an overall Summary Report is sent to the client . A typical Eco – Efficiency Profile Report is shown below :



Good eco-efficiency profile for both Financial (turnover) /Total waste and Production (tonnes of product) /Total waste

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