

## THE BIO-DIMENSION OF PROFIT

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Perpetual economic growth cannot exist. However, in the last twenty years, we have witnessed a growth of 40% in the British economy, 50% in the German economy and 60% in the Japanese. But we cannot distinguish whether or not the Japanese are happier than the rest of the world. If the 5.7 billion inhabitants of the earth matched the German per capita CO<sub>2</sub> emissions, we would need five planets with a biosphere similar to that of the earth, in order to breathe freely. A major misappropriation of the earth's limited habitat is created when one fifth of the inhabitants consume four fifths of the planet's resources. In addition, according to recent estimates, the world energy consumption will grow by 50% in the next twenty-five years. Atmospheric pollution in Peking has already reached dangerous proportions and in the United States there are approximately 50,000 landfills, of which, almost 10,000 must be immediately cleaned, at an expense ranging from US\$ 20 to US\$ 500,000,000 per landfill.

### The Main Economic Problem of Environmental Protection

A hypothetical company, under the name of "Athenian Steel Industry S.A.," creates negative external economies, because of sulphur dioxide emissions. Part of the poisonous emission loss the company, itself, sustains is due to the need to often repaint building facilities and cover growing medical bills for the employees. These are the private internal costs of the company. However, the biggest loss is external. Operation of this enterprise has negative effects on the vegetation as well as on the buildings in the surrounding area. It is also the reason for certain types of lung disease suffered by the inhabitants of the area, which defines social cost. There are two brief conclusions determined by this example:

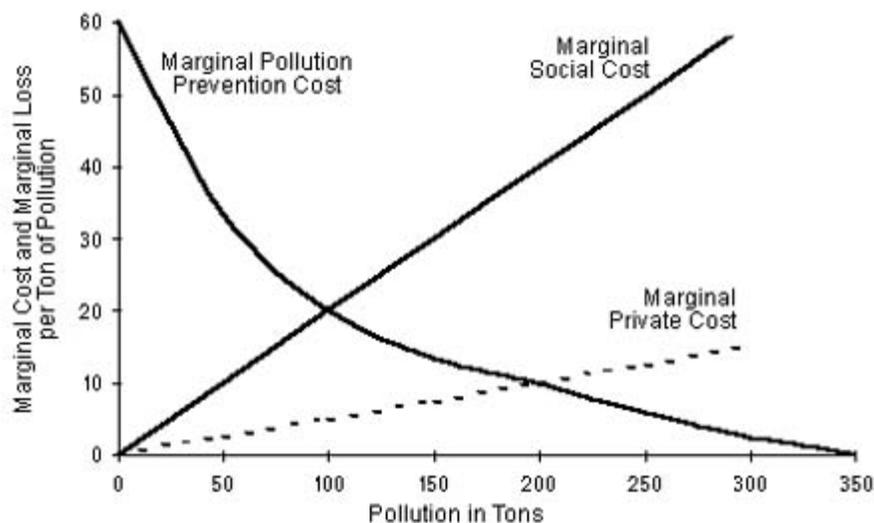


Figure 1. Supply and demand with negative external economies

- Due to external costs, otherwise known as negative external economies, the negative effects of pollution are far greater than if costs were only internal.
- Regarding the question of what levels of pollution are ideal, the unexpected answer is that the socially ideal level of pollution is not zero. Economic growth requires that the marginal social loss of pollution must equal the marginal social cost of pollution prevention.

### Environmental Management Program

Proposed solutions range from the prohibition of polluting emissions to local measures, such as tax motives, agreements, duties and refund programs. This paper focuses on the issue of profitable measures for environmental protection, with the hope to achieve a "change of attitude." Within the framework of the very goal of profit, lies a European Union proposal to impose a CO<sub>2</sub>/Energy Tax, in order to reduce CO<sub>2</sub> emissions and increase energy efficiency.

In order to better illustrate this example, let us suppose that the European Union imposes a 5% tax to the price of energy and, at the same time, reduces other taxes by the same percentage, so that the economy does not bear any additional burden. Figure 3 demonstrates the projected effects of this tax upon the prices of conventional energy sources. If this "green tax" were imposed for a period of 42 years, the price of conventional energy sources would increase eight fold and this would probably result in a dramatic change in the forms of energy used. Since the tax would be imposed only upon non-renewable energy sources, such as oil, coal and nuclear energy, not only, would the total energy consumption drop, but there would also be an important shift towards renewable energy sources, which would make up the biggest percentage of the total energy used. As a consequence of this European Union tax measure, production techniques requiring a reduced quantity of energy would result in higher profits.

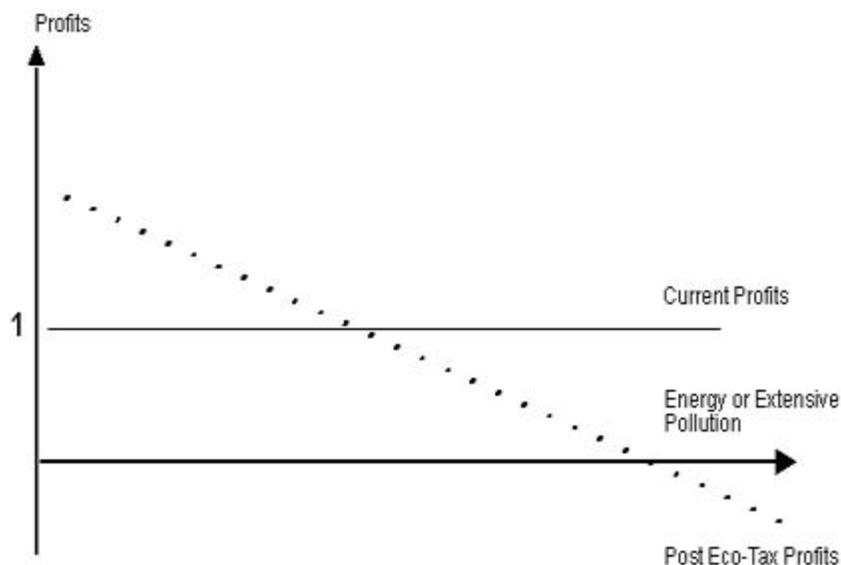


Figure 2. Green Energy Tax Effects

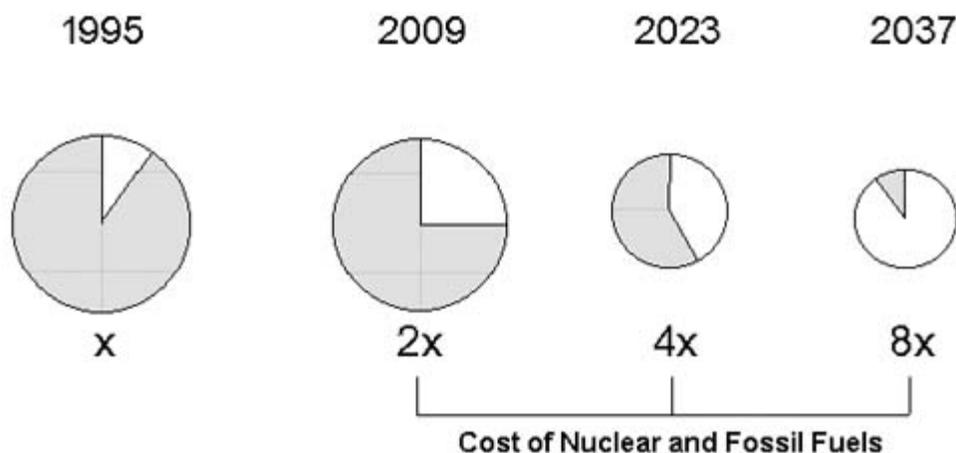


Figure 3. Projected renewable energy source consumption (white)

It is essential to specifically show how a management program for the environment drives towards new dimensions of profit. Economists conventionally view environmental protection as a factor of cost which compromises a corporation's competitive advantage. However, the fact that active environmental protection creates multiple possibilities for increased productivity, is overlooked. Corporate mergers and data from different institutes demonstrate the following four tendencies:

1. Environmental protection may result in an important reduction in corporate expenses and a corresponding increase in profit. According to evaluations from specialised consulting groups, German enterprises can reduce total corporate cost by 2%, through a complete environmental management program. This percentage corresponds to 50% of the German industry energy cost. What follows, are some groundbreaking examples of ways to reduce cost while reducing pollution, obtained from a study on Profitable Protection of the Environment which was appointed to the Gerling Consulting Group by the German Ministry of Environment. These examples constitute true cases from a list of 70 companies, examined within the framework of "business profitability of environmental protection measures" (Table 1).

**Table 1.** Successful Measures for Profitable Environmental Management

Sector	Environmental Protection Measures	Environmental Impact	Financial Impact
Electrical Appliance Industry	Replacement of Liquid Solvents with Solid Particles in the Varnishing Process	Reduction in the Presence of Solvent Residue in Landfills	Investments DM 800,000  Savings DM 495,000
Automobile Industry	Recycling of Plant Construction Materials and an Expansion of Plant Operations with a Reduction in the use of Environmentally-Compromising Materials	Landfill Conservation  Use of an Environmentally-Compromised Area for the Expansion of Plant Operations	Savings as Compared to Conventional Demolition Processes DM 10,500,000
Cosmetics	Establishment of New Waste Treatment Installations	Water Resource Protection  Waste Reduction	Savings DM 500,000

It is often suggested that environmental protection can lead to a reduction in corporate cost, but we seldom have data from specific economic and environmental effects of such measures. Hopefully, the data in this paper will convince business people of this fact and, eventually, environmental knowledge will be translated into regulation.

2. The market for environmentally-friendly products and services is rapidly expanding. This market was developed in the 1980's and has been increasing at a stable yearly pace of 6-8%. This shows that the companies producing these products are less dependent on economic fluctuations. The world trade of environmentally-friendly products was DM 178 billion in 1991. In 1993, the trade of such products reached DM 210 billion, in Europe alone. The leader of the global market for environmentally-friendly products is Germany, with a consumption of 21% and 680,000 employees working in the environmental protection industry. The number of employees is projected to increase to 1,000,000 by the year 2000.
3. Environmentally-conscious enterprises have a competitive advantage, in the form of an environmental image. Publicity and marketing in the 1990's is dominated by environmental themes. There is a very specific reason for this, especially in areas where the quality of products of different competitors is not that different, and an environmentally-friendly image for the product and the producer constitutes an important factor for success in the market. Environmental protection plays a major role in the process of gaining a competitive advantage.
4. It is essential to note that, for the national economy, the cost of environmental protection is lower than the compensation of environmental damage. The following examples from the German experience demonstrate how important environmental protection is for the creation of investment advantages:
  - Yearly expenses for treating lung and vascular diseases, due to air pollution, amount to DM 5.6 billion.
  - Damages to streets and buildings, due to noxious emissions, amount to DM 3.6 billion per year.
  - Compensation for soil and subsoil pollution fluctuates between DM 22 and 60 billion.
  - Due to environmental pollution, the cost of public water supply has increased to DM 1.7 billion.

Most obviously, these costs do not attract investments. Their reduction helps in the development of investment advantages and governments will, hopefully, take this into consideration. Environmental protection increases corporate advantages and, subsequently, investment opportunities. No enterprise will invest in an environmentally-damaged area, since it will be burdened with additional costs for medical care, and environmental clean-up and preservation. Just like a "Federal Reserve," which, independent from government and parliament, protects the currency of a country, there should be an environmental council, with the same type of independence and veto-right, in order to supervise political decisions with regard to their environmental compatibility.

### Definition of Business Culture

For a rather long period of time, environmental protection was considered a general social target. Today, it is becoming a viable strategy for enterprises. The concept of Environmental Management is still very new. However, the few elements mentioned in this paper, show that environmental management is indeed an opportunity and not a burden for the individual enterprise. As is the case in a market economy, tardiness in the area of environmental protection is punished by a cost reduction or an import of new products in the market. Therefore, investments in environmental protection revolve around three factors: cost reduction, participation in the immediate market influx of environmental products and competitive advantages, through the establishment of an environmental image. These three factors make up the

bio-dimension of profit. As a result, we need to define the "mission" or, better still, the "culture" of our enterprises as follows:

- Through dialogue with our clients, we must develop the best possible products and services.
- We must strive for the formation of a unique and responsible enterprise.
- All of the above must be undertaken in harmony with nature for the benefit of humans and nature.
- Humans, enterprise, society and nature, constitute the whole which must be protected.

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Dr. **Basil Kapsokavadis** has been the Managing Director of Gerling-Konzern Hellas, since 1993. He holds a Ph.D. in Economic Sciences from the University of Hamburg, Germany, and from 1986 to 1987 served as consultant with the Institute of Theoretical Economics, at the Military University of Hamburg. Dr. Kapsokavadis joined Gerling-Konzern Hellas in 1987, as Regional Manager, and was responsible for the company's sales and marketing in countries of Western and Eastern Europe, including Greece.