

**INTEGRATED PRODUCT POLICY AS AN APPROACH SUPPORTING SUSTAINABLE PATTERNS OF PRODUCTION AND CONSUMPTION**

**ZINTEGROWANA POLITYKA PRODUKTOWA JAKO PODEJŚCIE WSPOMAGAJĄCE ZRÓWNOWAŻONE WZORCE PRODUKCJI I KONSUMPCJI**

*Patrycja HĄBEK  
Politechnika Śląska*

**Abstract:**

The article presents an integrated approach to the product environmental impact at all stages of its life cycle, implemented within the European Union policy to promote sustainable patterns of production and consumption. In the first part of the article the author points out the need to separate the interdependence between economic growth and increase of resource consumption and negative environmental impact. Further on, the integrated product policy is discussed with the regard to its genesis, principles and instruments of implementation.

**Key words:** *decoupling, product life cycle, European Union policy*

**Słowa kluczowe:** *decoupling, cykl życia produktu, polityka Unii Europejskiej*

**INTRODUCTION**

Over-exploitation, climate change, pollution, land-use change, and loss of biodiversity rose toward to top of the list of major international concerns. One result was that 'sustainability' became an over-arching global social, environmental and economic imperative among governments, international organizations, and the private sector. Leaders increasingly understood that making progress towards a more sustainable economy requires an absolute reduction in resource use at a global level, while human well-being demands that economic activities should expand and environmental impacts diminish [1]. It is obvious that current consumption and production patterns are unsustainable. Before the global financial crisis the information about launching of a new product or service reached the international markets every three minutes on average [2]. The negative environmental impact of a product occurs not only during its production process but also during its use or disposal. Therefore, the integrated approach is needed with respect to the entire product life cycle. The aim of this article is to highlight the need for decoupling economic growth from resource consumption growth and the consequent negative impact on the environment and to present integrated approach which seeks to minimize environment degradation at all phases of a product life-cycle.

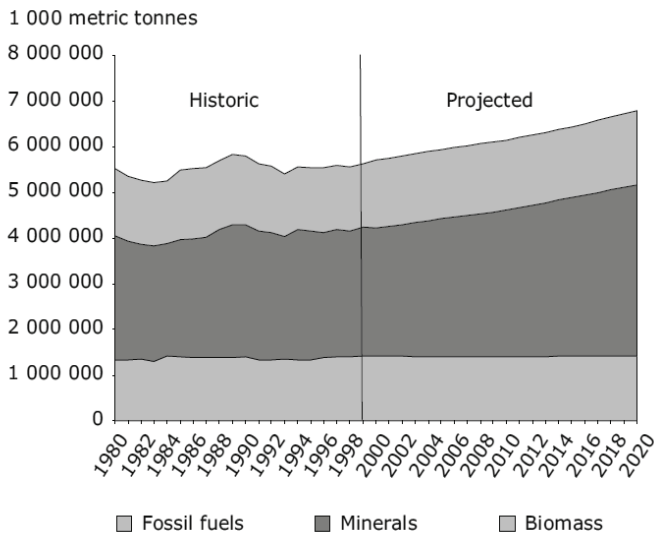
**SUSTAINABLE PRODUCTION AND CONSUMPTION**

The way we produce and consume contributes to global warming, pollution, material use, and natural resource

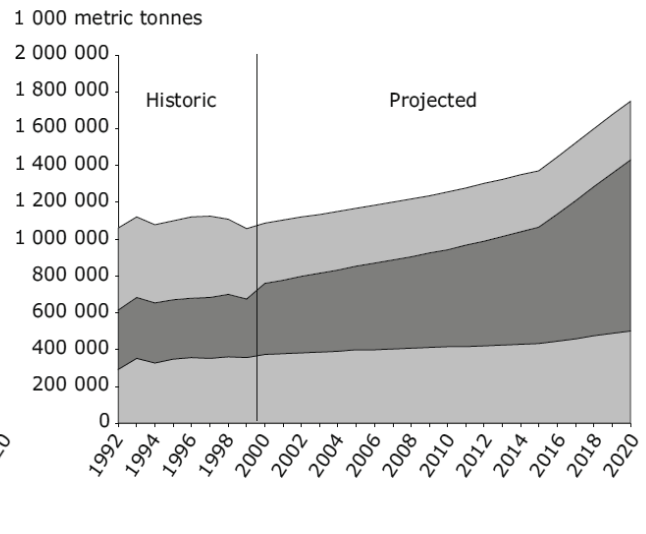
depletion [3]. The impacts of consumption in the European Union are felt globally, as the EU is dependent on the imports of energy and natural resources. Furthermore, an increasing proportion of products consumed in Europe is produced in other parts of the world [4]. Changing unsustainable consumption and production patterns is fundamental in moving towards a more sustainable development. It is necessary to empower consumers, producers, retailers and other economic operators by providing them with appropriate information and educational opportunities, and to help them understand the environmental impact of consumption and become familiar with eco-design, eco-production and eco-consumption solutions, which will enable them to make better informed choices [5].

Sustainable consumption and production (SPC) has been defined as: ... *a holistic approach to minimizing negative environmental impacts from the production-consumption systems in society. SCP aims to maximize the efficiency and effectiveness of products, services, and investments so that the needs of society are met without jeopardizing the ability of future generations to meet their needs* [6]. The concept encompasses the three pillars of sustainability: economy, society and the environment. The social component is concerned with equity within and between generations, together with consumer protection [7]. The economic and environmental dimensions were described by the Kiev Declaration as 'the delinking of economic growth and environmental degradation, so as to promote both economic growth and environmental pro-

**EU-15 aggregated material use**



**EU-10 aggregated material use**



**Fig. 1. Aggregated material use, historical and projected, in EU-15 and EU-10 [7]**

**Rys. 1. Zagregowane wykorzystanie materiałów, historyczne i prognozowane w UE-15 i UE-10 [7]**

tection'. Achieving this in the pan-European region was declared to be 'crucial' [8].

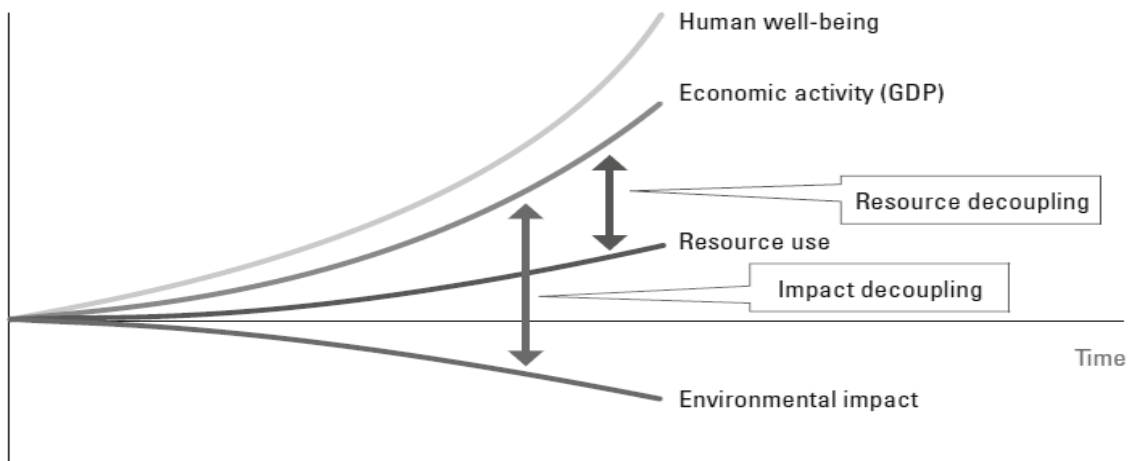
The need, and the opportunity, to improve efficiency of resource use is all the more evident when looking at the projections of future resource use (see Figure 1). In EU-15 [9], the use of resources in 2000 was about 5.7 billion tonnes. It is expected to grow up to about 6.8 billion tonnes by the year 2020, an increase of about 19%. Use of minerals in the construction industry is expected to account for most of the growth. In 2000, EU-10 [10] were using just over 1 billion tonnes of resources. It is projected that consumption will grow to almost 1.7 billion tonnes in 2020, an increase of some 60%. Use of fossil fuels will decline, thanks to improvements in energy efficiency and fuel switching. On the other hand, biomass extraction will increase by about 35%, while the use of minerals is expected to grow by 140%, owing to various infrastructure construction projects.

Sustainable use of resources needs consideration of their availability, the security of their supply, and safeguarding productive capacities of ecosystems. At the same time, it is important to maintain the ability of the environment to act as a 'sink' to absorb emissions and pollutants. Increasing sustainability in production will require improvement in production efficiency, innovative technical and managerial

approaches and better environmental monitoring and control [7].

The strategic objective of implementing sustainable production and consumption patterns is separation of economic growth from natural resource consumption growth and related environmental impacts (called decoupling) as well as improving quality of life. In the past, the link between economic growth and environmental impacts was strong. In the twentieth century, the global GDP increased 19-fold, while the global consumption of energy grew 18-fold over the same period. Similarly significant growth took place in the amount of natural resources used by the economies. Decoupling pre-supposes that the consumption of resources or energy and the related environmental impacts need not grow when the economy expands [7]. Figure 2 captures the essence of the two key aspects of decoupling as applied to sustainable development, namely resource decoupling and impact decoupling.

Resource decoupling means reducing the rate of use of (primary) resources per unit of economic activity. This 'dematerialization' is based on using less material, energy, water and land resources for the same economic output. Resource decoupling leads to an increase in the efficiency with which resources are used. Impact decoupling, by con-



**Fig. 2. Two aspects of decoupling [1]**

**Rys. 2. Dwa aspekty decouplingu [1]**

trast, requires increasing economic output while reducing negative environmental impacts. Such impacts arise from the extraction of required resources (such as groundwater pollution due to mining or agriculture), production (such as land degradation, wastes and emissions), the use phase of commodities (for example transport resulting in CO<sub>2</sub> emissions), and in the post-consumption phase (again wastes and emissions) [1].

We can also distinguish relative and absolute decoupling. Relative decoupling occurs when an environmental pressure continues to grow although at a slower rate than the economy. Whether a relative decoupling results in decreased environmental impacts is an open question, as it can be achieved even when the use of resources or energy continues to grow. Absolute decoupling takes place when the environmental pressure decreases in absolute terms, while the economy continues to grow. For example, by closing down heavy industry, total waste generation in the EU-10 over the last decade has decoupled from economic growth [7].

### INTEGRATED PRODUCT POLICY

The program, which reflect the EU's actions taken to promote sustainable production and consumption patterns is Integrated Product Policy (IPP). Its basic principle is the interaction with the market, i.e. encouraging business operators to stimulate demand and supply of environmentally friendly products [11].

On 7th February 2001, the European Commission adopted a Green Paper on Integrated Product Policy (IPP) [12] with the objective of launching a debate on the role and possible measures that could be taken at European Union level. Based on its Green Paper and the following stakeholder consultations, the European Commission published the Communication on IPP in June 2003 [13]. IPP seeks to minimize the environmentally negative impacts of products by looking at all phases of a product's life-cycle and taking action where those impacts can be reduced best and most cost-effectively [14].

The IPP concept is based on the following observations [15]:

- The production and use of goods and services (i.e. products) are causing the majority of overall negative impacts on the environment. The situation is worsening due to ever increasing numbers of products being consumed in the EU and globally.
- The environmental pressures and impacts of products occur at various stages of their life-cycle (along production chain, during use phase, disposal of end-life products). Remedial actions must be designed in a way to avoid that the environmental burden is simply shifted to other stages of the life-cycle, or to other geographical areas.
- Due to the large variety of products and impacts there is no one single policy tool to address them all. On a case-by-case basis, the appropriate policy instrument or combination of instruments has to be chosen and deployed in a coordinated way, often across several policy areas (for example legislation on product design, emission ceilings, labeling, fiscal measures, self-commitments of industry, etc.). To make best use of these instruments, a large variety of stakeholders needs to be involved, including policy makers, business and consumers.

The IPP approach, which has been developed gradually over the last decade, is now generally recognized as being a potentially very effective way to address the environmental dimension of products. This approach is based on five key principles [13]:

1. Life-Cycle thinking.
2. Working with the market.
3. Wide involvement of stakeholders.
4. Continuous improvement of products.
5. Coordinated use of policy instruments.

Implementation of Integrated Product Policy is a complex issue and requires the cooperation of many actors, including primarily: entrepreneurs, research institutions, public administration, consumer organizations, environmental organizations, the EU institutions (European Commission and the European Environment Agency).

In addition to these, important players in the implementation of the IPP are the consumers themselves. Their aware ecological attitude should force the producers to the steps leading to the reduction of environmental impact, both during manufacture of the product, and at the stage of its use and waste management [16].

Communication COM (2003) 302 provides a number of instruments to implement Integrated Product Policy. These are only suggestions of a Committee, which in the course of previous work has been recognized as having great potential to shape a new product policy. These include:

- environmental taxes,
- accounts including all production costs (including losses in the environment), so called internalization of external costs,
- refraining from public assistance actions adversely affecting environment,
- dissemination of eco-labeling,
- dissemination of environmental management in enterprises and organizations – EMAS (Eco-management and Audit Scheme),
- dissemination of environmental statements for products,
- agreements between entrepreneurs and public authorities,
- application of environmental criteria in public tendering,
- providing access to environmental information associated with the product for consumers.

In view of the above Integrated Product Policy is based on the instruments used in the context of environmental management system (e.g. EMAS) implementation, eco-labeling and using information about a product environmental impact. Innovation in the approach is the coordination of these instruments and introduction to the systematic application product life cycle assessment methods [16]. In its Communication on Integrated Product Policy (COM (2003)302), the European Commission concluded that Life Cycle Assessment is an important tool to support IPP realization. The method provides the best framework (currently available) for assessing the potential environmental impacts of products.

### CONCLUSIONS

The processes of globalization and liberalization of trade imply consumption and production increase. It is certain that production processes as well as using phase and dispo-

sal of end-of-life products cause negative impact on environment. In order to move towards more sustainable patterns of consumption and production the product's impact on environment must be considered at all stages of its life – cycle preventing this way shifting of environmental burden to other stages of the life – cycle or to other localization. At European Union level there is a policy tool dedicated for the purpose of green consumption and product development. The Commission communication on "Integrated Product Policy – Building on environmental life-cycle thinking" aims to lower the environmental impact of products at various stages of their life cycle. There is no single policy tool that can apply to all products. The IPP is based on the instruments in the scope of environmental management systems, eco-design, labeling and product declarations, green public procurement, green technology and appropriate legislation. These policy tools should be used in coherence with each other to reinforce their effect and contribute to reorientation of existing production and consumption patterns towards more sustainable.

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