



**1<sup>st</sup>**  
INTERNATIONAL WORKSHOP  
ADVANCES IN CLEANER PRODUCTION

**IV** SEMANA PAULISTA DE P+L  
CONFERÊNCIA PAULISTA DE P+L

## The System for Cleaner Production Innovations Development and Implementation in Industry (APINI – SPIN)

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### Abstract

The role of industry in the process of sustainable industrial development is obvious. It relates to changes in production processes, products and services aimed at reduction of impact to the environment in the entire life cycle perspective that results in improvement of environmental, economic and social performance of enterprises. To ensure sustainable industrial development, a systematic application of the following measures is needed:

- Cleaner production (CP),
- Environmental and integrated management systems,
- Product related measures of sustainable industrial development (e.g. eco-design, life cycle approach),
- Sustainability reporting.

CP should be an essential part of any comprehensive environmental management system at an enterprise or national level. In many cases, the adoption of CP improvements can reduce or even eliminate the need for end-of-pipe investments and therefore can have both environmental and economic benefits. Experience shows that, often, companies having identified cost-effective and technically feasible CP options may still not be able to make necessary CP investment to realize the financial benefits and environmental advantages. Financing of CP projects varies among countries and types of projects. Domestic and international efforts to strengthen environmental financing still face a number of serious obstacles, many of which related to profound economic, political and social problems.

In 1997, the Institute of Environmental Engineering (APINI) developed a system for CP innovation development / implementation. The system consists of the pool of experts (on CP innovation generation, financial engineering, implementation and monitoring), the financing source – soft credit line at Nordic Environment Finance Corporation (NEFCO) and industrial companies. The system is based on the company's material and energy flows, and properly evaluated environmental costs based on Environmental Management Accounting (EMA). The methodologies employed in the system are flexible, can be applied to different company levels and enable the decision-maker to obtain information in terms of the intended economic and environmental purposes. The system has been used for development of 141 innovations in 69 Lithuanian industrial companies. These innovations enabled reduction of energy consumption by 30 365 MWh/year. APINI experience was successfully disseminated in Africa, South East Asia, Central America and CEE.

This article presents an overview of activities and experience of APINI in development of CP innovations in industry and lessons learned in terms of strengthening corporate commitment in sustainable development.

**Keywords:** Cleaner Production, Preventive Innovation, Material and Energy Balance, Environmental Management Accounting, Financing

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