



## Editorial



### Green Industry – a New Concept

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Sustainable Consumption and Production aim to widen access to goods and services for an expanding population without jeopardizing the environmental and natural resource base that supports life on Earth. The way goods and services are produced and delivered to consumers is an important determinant of the total environmental and social burden of consumption and production. Recently UNIDO has declared the Green Industry Strategy, which focuses on ways that all the countries, developing countries especially, can green their industries and expand their environmental goods and services sector. An important part of this strategy is providing guidance to governments on how their policy and institutional regimes can better support the greening of industries.

*Green Industry promotes sustainable patterns of production and consumption i.e. the patterns that are resource and energy efficient, low-carbon and low waste, non-polluting and safe, and which produce products that are responsibly managed throughout their lifecycle. The Green Industry agenda covers the greening of industries, under which all industries continuously improve their resource productivity and environmental performance. It also aims to create Green Industries, that deliver environmental goods and services in an industrial manner, including, for example, waste management and recycling services, renewable energy technologies, and environmentally analytic and advisory services ( UNIDO Green Industry, Vienna, May 2011).*

While Green Industry approaches are relevant to all types of enterprises, of all sizes and in all sectors, UNIDO focuses on small and medium enterprises that engage in industrial processing, manufacturing and service providers. The central idea to greening industries and sustainable economic growth is “decoupling” of resource use and pollution from industrial development. Decoupling occurs when the growth rate of an environmental pressure is less than that of its economic driving force, e.g. GDP over a given period.

Another important issue of the concept is an emerging school of thoughts that goes beyond life cycle assessment. In order to redesign technological processes and minimize negative impacts, a new “cradle to cradle” approach is evolving that considers waste from one process as a resource for another process. This systems approach has resulted in the way the policies and supporting infrastructures are designed and how science is conducted. Such change is characterized by a multi-disciplinary approach with a shift in focus towards ways of production and use.

The concept policy framework is organized into five intersected themes:

- An integrated framework to support the greening of industries;
- Creating an enabled environment;
- Supporting industry-led initiatives;
- Harnessing environmental technologies;
- Instrument mixes to promote the greening of industries.

With growing competition, globalization and a rapid advancement of knowledge, new technologies and innovations have a wide variety of sources - most of them outside the direct control of enterprises and industries.

These include institutions involved in the innovation process, such as universities, technical institutions, private and public research laboratories, providers of consultancy and technical services, etc. Governments have a role in fostering these linkages at the regional, national, and global levels. At the same time science systems need to be broad based, with the ability to work across and beyond usual disciplines. Integration with economic and environmental policies is vital.

It is expected that the greening of industries will become a core determinant of economic competitiveness and sustainable growth. Besides that the concept also plays a role in poverty alleviation, through promoting energy security, health and safety, jobs, and reducing costs through increased productivity. At the same time, there is now increasing awareness that something is very wrong and that human society needs to fundamentally change in order to solve the problems described above. No one denies that economic development is essential to improving access to basic entitlements in the poorest nations, but the assumption that continued consumption growth, without greater attention to equity and sustainability, can really deliver prosperity for all is questionable. It is clear that the economic subsystem is now very large relative to the ecosystem that sustains it. How big should the economy be and what is the optimal scale relative to the ecosystem? GDP does not help answer this question since it is based on conflating costs and benefits into economic activity rather than comparing them at the margin.

As mentioned above, the concept response to the dilemma of unsustainable growth is to appeal to the concept of decoupling. “The evidence that decoupling offers a coherent escape from the dilemma of growth is far from convincing. The “myth” of decoupling is the claim that decoupling will necessarily achieve ecological targets. This is not to say that decoupling itself is unnecessary. On the contrary it is vital – with or without growth” (Tim Jackson 2009). It is true that absolute reductions in throughput are essential. The question is how much is decoupling technologically and economically viable?

Finally, the new macro-economic will need to be ecologically and socially literate, ending the theory of separating economy from society and the environment. The starting point must be both to change the presumption of perpetual consumption growth as the only possible basis for stability and to identify clearly the conditions that define a sustainable economy.

For any enterprise the use of management systems is the most effective means to ensure that it efficiently and continuously implements Green Industry strategies. However, given the current trends in management systems standards, adoption of a corporate social responsibility approach, which broadly embraces all aspects of environmental and social impacts, might be the best.

The Green Industry strategy was first broadly discussed at the Fourth Nevsky International Ecological Congress in St. Petersburg on 17<sup>th</sup> of May, 2011. Main Congress outcomes are presented in this issue of the “Environmental Research, Engineering and Management” journal.