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**Europe INNOVA Conference
“Re-Innovating Europe:
Challenges for Clusters and Innovative Business”.
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**APPROACHING
A SUSTAINABLE ECONOMY
REQUIRES A STRONG FOCUS ON ECO-INNOVATION**

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The EU strategy based on the Lisbon Summit (2000) calls for a vigorous and sustainable economy within a reliable and predictable ecological environment. The President of the European Union, Jose Manuel Barosso, said recently: „By turning the EU into the most energy- and resource efficient region of the world we will generate innovation, new jobs, more competitive strength and a healthier environment.“ Sigmar Gabriel, the German Environment Minister added in an article in the *Süddeutsche Zeitung* the following observations: “There is much reason to believe that the intelligence with which we use energy and resources will form the base technology of this century. This technology will drive innovation and investments, very much so in the sense of Nikolai Kondratieff’s theory of long waves - according to which the wellbeing and employment of an economy depend on the timely recognition of long-term new development phases.“

There are two fundamental reasons why our present economy is *not* in a healthy co-evolutionary state with the ecosphere ²:

- Humanity is consuming too much natural resources (material incl. energy carriers, water, and surface of the earth). The material metabolism of the human economy is far higher than what the environment can sustainably support and endure. In order to produce the western kind of material

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² F. Schmidt-Bleek, “The MIPS-Konzept – Faktor 10”, Droemer, Munich 1998 and other books since 1993. Recommendations and Statements by the internationally renowned Factor 10 Club, see www.factor10-institute.org,

wealth for 6 billion people, more than two planets earth would be required for supplying the necessary resources.

- As a consequence of the unsustainable resource consumption, the (free) services of nature are diminishing. Without these services, man would not exist today and could not survive on earth. Natural services include for instance: The availability of sufficient and healthy drinking water, the green cover of the earth; a multitude of edible plants and animals; the formation and supply of productive soil; rain and snow; adequate temperature variations during reliable seasonal changes; a high diversity of species; the heating function of the Gulf Stream; the power of sperms to propegate life and the protection from dangerous radiation from space. Services of nature *cannot* be replaced by technology. Man-made damages to natural services can lead to extremely destructive and at least partly non-reversible consequences such as climatic change, floodings, water shortages and desertification.

Man-made impacts upon and changes of natural services have already led to yearly costs of hundreds of billions Euros, currently doubling every 10 years.

In sum, continued excessive resource consumption endangers our very economy and with it our capacity to continue and improve our social services and wealth production. We are loosing our capacity to secure the future of our children. As to the hopes of the Lisbon Summit in the year 2000, Europe is still losing ground.

If a sustainable future is the goal of the EU, major adjustments of the framework within which our economies function are unavoidable. For instance, it has long been recognized that while productive labor is punished by excessive taxation and other levies, natural resources are wasted in grand style because their prices invite such behavior. It has been shown that technology can produce goods and services with equal end use satisfaction with a tenfold lower and even less resource input than is the norm todate. But Europe can steer the economy in the direction of sustainability *only* if policies are introduced that make it profitable for manufacturers, traders and consumers to follow this path.

Whatever the approach of the European Union toward sustainability might be in the future, massive social, political and technical innovation will need be part of this effort in order to make Europe far more material efficient than it is today. Future innovation will focus on new means to satisfy the needs of people with radically less Material Input Per unit output (or Service - MIPS) than is presently the case. Experts expect that an average tenfold dematerialisation will be needed to reach a stable co-evolution of the economy and the ecosphere. Goods and services with high resource productivity will take the lead in market and export performance because there are far too few resources available on earth to allow western type living standards for all people alive today. Japan has made Factor 10 part of ist economic strategy years ago. Today's price trends for most natural resources speak a clear language.

A recent analysis by the author of this paper revealed that the present focus of innovation in the EU is (unintentionally) directed toward increasing the per capita consumption of natural resources. There is a very strong linear correlation between the per capita consumption of non-renewable resources and the per capita patent application rate. While Finland is tops in this regard

(100 yearly tons of natural resource consumption per capita and simultaneously the highest innovation rate per person in the EU), countries like UK show a far more moderate use of natural resources (40 yearly tons per capita), together with a correspondingly lower innovation rate. Germany with 70 tons of yearly material consumption per capita takes the middle ground between UK and Finland and Poland with a per capita consumption of 30 tons per year also shows a correspondingly lower innovation rate than UK ³.

This finding strongly points to the need of being selective and clear when striving for more innovation in Europe. In other words, innovation that supports reaching sustainability needs be clearly defined. The EU ECO-INNOVATION PANEL has recently adopted the following working definition of inventions that can help sustainability along:

Eco-Innovation aims at the creation of novel and competitively priced goods, processes, systems, services, and procedures that can satisfy human needs and bring quality of life to all people with a life-cycle-wide minimal use of natural resources (material including energy, water and surface area) per unit output, and a minimal release of toxic substances“.

The manufacturing sector that is involved in ECO-INNOVATION can then be defined as:

“Eco-Industry” is that part of industry which is pro-actively and measurably involved in eco-innovation on the micro-, meso- or macro-level, including firms and enterprises offering novel solutions for meeting legally required standards.

Conclusion

The subject of the present meeting is: “Re-Innovating Europe: Challenges for Clusters and Innovative Business”. To the extent that “Re-innovating Europe” means striving for a more vigorous, competitive and more sustainable future economy in the EU, one of the pre-requisites will be to encourage, support and engage in ECO-INNOVATION. This finding does not only apply to the manufacturing sector, but to all social, institutional and political developments as well.

³ F. Schmidt-Bleek.: “Wieviel Erde wird uns fehlen? Die Leistungen der Oekospaere und die menschliche Arbeit”, S. Fischer, Frankfurt, early 2007; English edition later (“*How much earth will we miss? Natural Services and human labor*”)