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Submission by the Dow Chemical Company to the Marrakesh Process Secretariat in response to the Third Public Draft of the proposed input to CSD 18 and 19 on a 10 Year Framework of Programmes (10YFP) on Sustainable Consumption and Production (SCP).

The Dow Chemical Company (Dow)\(^1\) welcomes the opportunity to participate in the Marrakesh Process, and to contribute to the further elaboration of the 10YFP on SCP. Dow is a global company, active in all regions of the world, and we firmly believe in the fundamental principle that sustainability can be advanced by marshalling the forces of the market economy. Sustainable consumption and production is about the economy. More specifically, it is about the eco-efficient production and consumption of resources, an objective that will progressively lead to minimizing the environmental footprint of economic activities, and ultimately delink economic development from environmental degradation. SCP is not only about consuming less (and in some regions of the world, there will be more consumption with economic development), but rather about consuming better or smarter.

We subscribe to the notion in the draft paper that the 10YFP should incorporate an inspirational and practical vision that provides a clear outline of SCP ten and fifty years hence, with indicators to track progress. Coming at this from a market economy perspective, we also believe the definition of SCP should be systemic and dynamic, to better reflect regional differences in SCP patterns, the rate of innovation, environmental resilience, and evolving values and socio-economic trends.

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\(^1\) Dow is a diversified chemical company that combines the power of science and technology with the “Human Element” to constantly improve what is essential to human progress. The Company delivers a broad range of products and services to customers in approximately 160 countries, connecting chemistry and innovation with the principles of sustainability to help provide everything from fresh water, food and pharmaceuticals to paints, packaging and personal care products. In 2008, Dow had annual sales of $57.4 billion and employed approximately 46,000 people worldwide. The Company has 150 manufacturing sites in 35 countries and produces approximately 3,300 products. On April 1, 2009, Dow acquired Rohm and Haas Company, a global specialty materials company with sales of $10 billion in 2008, 98 manufacturing sites in 30 countries and approximately 15,000 employees worldwide. References to “Dow” or the “Company” mean The Dow Chemical Company and its consolidated subsidiaries unless otherwise expressly noted. More information about Dow can be found at [www.dow.com](http://www.dow.com).
We see SCP is a directional framework for sustainable innovation and a cross-cutting concept, with complex interactions between producers, consumers, and regulatory agencies -- all of which have distinct but complementary roles to play to enable the marketplace achieving the SCP vision. Producers need to optimize the use of their resources, internalize eco-efficient practices across their value chains, practice cleaner production and innovate into the direction of sustainability in order to bring consumers environmentally preferred products. Consumers need to express their preference for “green” products and services by shifting their consumption patterns accordingly, thereby rewarding innovation.

Governments, in addition to its traditional regulatory role over market place activities, must enable the gradual shift to SCP through a combination of voluntary and regulatory initiatives by supporting research and development into the direction of sustainability, removing barriers to sustainable innovation, ensuring consumers to have the necessary information to make informed consumption choices, and if appropriate, providing early support of environmentally preferred products through public procurement, economic incentives, and public recognition of innovative solutions. Governments should place more emphasis on creating the lead markets and economic systems that enable such innovations to become commercially viable. Governments should refrain from restricting consumer choices as informed market place will in most cases adopt the optimal production and consumption pattern.

Dow welcomes the emphasis in the draft paper on the life cycle perspective to production and consumption, which we believe is consistent with taking a system approach to achieve the long term vision of delinking economic activity from environmental degradation. From a business perspective, the life cycle approach makes a lot of sense, since it captures all operational aspects of bringing better products to consumers, and gaining the acceptance of the market place, which in turn defines business sustainability.

Innovation, product design, resource use, manufacturing, distribution, consumer information and marketing, consumption and disposal are all integral components of a well thought business strategy. Each one of these components is susceptible of being influenced by market influences, public policy, and broad social values. With business activity now taking place in a globalized context, taking an integrated approach to the life cycle of production and consumption is a critical dimension of planning and strategic business development.

Dow believes that a key contribution of the 10YFP on SCP could be to foster enabled policies and practices at each phase of the life cycle of production and consumption opposite key economic activities, for each of the stakeholders. Such an outcome would be wholly consistent with, and supportive of the broader aspects of sustainable development addressed in the Johannesburg Program of Implementation (JPOI). Having the right ecosystem of voluntary and regulatory initiatives combined with the political will to create the leading markets for more sustainable production and consumption will be a key success factor.
Dow is committed to contribute to sustainability and to conduct its business activities in accordance with the precepts of sustainable development. Dow subscribes to the Millennium Development Goals, and is actively supporting the clean water program under the auspices of the UN. Dow is innovating in support of sustainability in the areas of clean energy, sustainable or “green” chemistry, and cleaner production.

For example, Dow and BASF jointly developed the innovative hydrogen peroxide to propylene oxide (HPPO) technology, which provides economies of scale, and reduces wastewater and energy usage. The first facility began operations at BASF's site in Antwerp, Belgium in March 2009, and a second facility is to be built in Map Ta Phut, Thailand. Propylene oxide (PO) is a versatile chemical intermediate used in the production of raw materials for a wide range of industrial and commercial products, including polyurethanes, propylene glycols and glycol ethers. The result of this new technology is a reduction in wastewater by more than 70 percent as well as reduced energy usage by 35 percent when compared with PO process technologies in use today. The new process requires only hydrogen peroxide (HP) and propylene as raw materials, and produces only PO and water, thus eliminating the need for additional infrastructure or markets for co-products. In addition, new PO plants built using the HPPO technology are also more economical because they need less land, plant infrastructure, and 25 percent less capital.

Dow scientists have developed polyols from renewable natural oils, primarily soy bean oils. Polyols are a component in the production of polyurethanes, which are rigid foams, flexible foams, and adhesives used in appliances, automotive parts, adhesives, building insulation, furniture, bedding, footwear and packaging. Dow is a leading global supplier of polyether polyols and other polyurethane raw materials, and offers one of the broadest lines of polyurethane products in the industry. Using natural oils, this new chemistry provides reduced environmental impact compared to the manufacture of conventional polyols, as it is greenhouse gas neutral and uses less than half of the petroleum-based resources (fuel and raw materials) of current technology.

Dow is working with Algenol Biofuels, Inc. to build and operate a pilot-scale algae-based integrated biorefinery that will convert CO₂ into ethanol. Algenol's technology uses CO₂, salt water, sunlight and non-arable land to produce ethanol. The CO₂ will be supplied to the algae in the photo bioreactors and will serve as the carbon source for the ethanol produced. The result is a CO₂ capture process which converts industrially derived CO₂ into more sustainable fuels and chemicals. Dow plans to develop advanced materials and specialty films for the photo bioreactor system. Dow will also provide the technology and expertise related to water treatment solutions and will provide Algenol with access to a CO₂ source for the biorefinery from a nearby Dow manufacturing facility.
Alstom, a world leader in power generation, and Dow announced the design and construction of a pilot plant to capture carbon dioxide (CO$_2$) from the flue gas of a coal-fired boiler at the Dow-owned facility in South Charleston, West Virginia, USA as well as a pilot carbon capture and storage project at the Belchatow Power Plant in Poland. In 2008, Dow and Alstom entered into a Joint Development Agreement to develop advanced amine technology for CO$_2$ capture. Currently, Alstom is working with Dow to develop a commercial offering of an advanced amine-based scrubbing technology for industrial sources that produce exhaust or flue gases containing CO$_2$ and high levels of oxygen. The new process will significantly reduce the amount of energy required for CO$_2$ separation and capture.

These are just a few examples of how Dow is innovating in support of sustainability in the areas of clean energy, sustainable or “green” chemistry, and cleaner production. Additional examples are available on our website at http://www.dow.com/commitments/studies/index.htm

At the same time, we also have examples of where our more sustainable products have not yet reached their full market potential. For instance, Dow has technical solutions today for improving the sustainability of the paint and coatings industry through conversion to water or other low/no-VOC (volatile organic carbon) technologies. Several of these technologies use raw materials more efficiently and/or are more durable, but the lead markets to enable their growth are not there yet.

Dow will welcome additional opportunities to engage in the 10YFP on SCP as it is discussed at the U.N. Commission on Sustainable Development sessions 18 and 19, and other venues over the coming months.

Please contact me if you need additional information.

Very Sincerely Yours,

Martina Bianchini
Vice President, EU Government Affairs and Public Policy
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