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SUBMITTED BY ELECTRONIC MAIL TO: NNISTRATEGY@OSTP.GOV

The American Chemistry Council's Nanotechnology Panel is pleased to offer these comments on the National Nanotechnology Initiative's draft *2011 Environmental Health and Safety Strategy*. A robust EHS research strategy will support responsible development of nanomaterials, U.S. competitiveness in the global race for nanotechnology leadership, and public acceptance of nanotechnology-enabled products.

The Panel supports the approach of integrating the risk assessment paradigm within product life cycle stages and the NNI's overall adaptive management approach to EHS research. While we support the vision and mission in principle, we believe that the vision statement does not adequately acknowledge the potential of nanotechnology to enhance environmental quality. The panel also hopes that, contrary to the text box following the mission statement, the definition of "engineered nanomaterial" used in the EHS strategy would provide some degree of guidance (and consistency) to federal agencies developing their own definitions.

The Panel supports all of the research categories and emphasizes that the category "Nanomaterial Measurement Infrastructure" is critical to progress in all other categories. We urge agencies to invest appropriately in this area and to ensure coordination between this and other research categories. We also support the importance of adding ethical, legal, and societal implications (ELSI) of EHS research. However, ELSI is discussed in a general way, and we recommend clearer articulation of specific ELSI priorities related to each of the core research categories.

The Panel believes that risk communication deserves increased emphasis. We do not believe that it is sufficient to simply "integrate and standardize risk communication within the risk management framework" (p. 63). As nanotechnology EHS research increases, the question of what study results mean in terms of potential health or environmental risk must be communicated effectively. The draft frequently mentions increasing the availability of EHS information, but the public needs more than the numbers from a risk assessment to interpret studies and understand what risk management measures, if needed, are in place. We recommend that risk communication be more of a priority with a focus on addressing scientific uncertainty, public perceptions, and ELSI.

The draft strategy does not prioritize the need for consistent terminology in EHS research and practice. Standardized terminology would reduce confusion (e.g., routine use of primary particle size to describe materials composed mostly or entirely of aggregates and agglomerates). The lack of common terminology can lead to

*Members of the ACC Nanotechnology Panel include 3M, Arch Chemicals, Arkema Inc., BASF Corporation, Bayer MaterialScience, Cabot Corporation, Cytec Industries, The Dow Chemical Company, DuPont, Evonik Degussa Corporation, Ferro Corporation, and Procter & Gamble.*

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erroneous conclusions about the sources of potential EHS impacts and how to perform appropriate surveillance and exposure monitoring. As noted in the draft, lack of common terminology can also undermine risk communication.

The Panel notes that the term “comparative risk assessment” is used frequently, but it is not defined. Is it a comparison of different nanomaterial risk assessments or of how different properties influence risk assessment? The Panel requests clarity on the meaning of this term and notes that assessments that compare nano and non-nano forms of materials may be useful for assessing whether nano forms of materials possess increased risk relative to non-nano forms. Regarding clarity, while nanomaterial characterization is mentioned frequently, it is not sufficiently clear that repeated characterization of materials will be needed to understand how their properties may change as they move among environmental and biological media.

Although education is a major component of the overall NNI strategic plan, there are no linkages to education in the draft EHS strategy. The Panel recommends that such linkages be made more explicit and that they recognize that policy makers are a key audience. The Panel also finds that the draft plan does not adequately describe how agencies will work together or how stakeholders will be engaged (other than as a sounding board). We would appreciate more detail regarding expectations of inter-agency coordination and partnerships with stakeholders.

Sincerely,

A handwritten signature in black ink, appearing to read "Jay West", with a stylized, cursive script.

Jay West  
Senior Director, Chemical Products and Technology Division  
ACC Nanotechnology Panel

