Federal research plan to determine nanotech risks fails to deliver

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Almost a year in the making, a federal plan to prioritize research on the potential environmental, health, and safety (EHS) impacts of nanoscale materials has so many failings that its begs the question as to whether the government's 13-agency nanotechnology research effort is able to deliver an effective risk research strategy, according to David Rejeski, head of the Wilson Center's Project on Emerging Nanotechnologies.

"Currently, the federal nanotechnology risk research agenda is a bit like a ship without a captain, and it is unclear who has the responsibility to steer this ship in the right direction and make sure that it reaches its destination," Rejeski said in comments on the new government report, Prioritization of Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials.

Released for public review on August 16, the 8-page government report was prepared by a working group of the Nanoscale Science, Engineering, and Technology Subcommittee (NSET), part of the federal government's National Science and Technology Council. In September 2006, the same working group issued a list of nearly 70 EHS research needs necessitated by advances in nanotechnology and subsequent commercialization efforts. The new report responds to some 40 public comments on the "prioritization criteria" described in last year's document.

Although the new NSET report pares down the original listing to a shorter laundry list of 25 research activities, the end result is a "simplistic list of priorities," says Rejeski. Furthermore, he states: "It

falls far short of the carefully crafted, prioritized federal nanotechnology EHS research plan urgently called for over the past two years by leaders from both parties in Congress, industry, investment firms, scientists and consumer groups. Notably absent are important details like budget allocations, implementation time frames, and assigned responsibilities. The report reflects the government's failure—after allotting over $8 billion for nanotechnology research since fiscal year 2001—to develop a coordinated, prioritized, and adequately funded program to characterize potential risks to human health and the environment associated with processes and products involving engineered nanomaterials."

In comments submitted to the NSET, Dr. Maynard said, "It remains hard to see how this report or subsequent planned activities will help to provide the information that industry, regulators, and the public need to ensure the safe development and use of nanotechnology."

In the project's submission to the NSET subcommittee, Maynard and Rejeski both questioned whether following the priorities listed in the document would yield information that policymakers and regulators need to ensure that existing and future nanotechnology products are safe and environmentally sustainable.

Rejeski advised that funding for nanotechnology-related EHS research be directed toward agencies which have or support regulatory missions, such as the Environmental Protection Agency, Food and Drug Administration, Department of Agriculture, Consumer Product Safety Commission, and the National Institute for Occupational Safety and Health. "If this document is truly meant to serve as a basis for a risk research strategy, there is a long way to go," Rejeski said.

In 2006, nanotechnology was incorporated into more than an estimated $50 billion in manufactured goods. More than 500 manufacturer-identified nanotechnology consumer products are on the market from

cosmetics to automobile parts to children's toy stuffed animals (www.nanotechproject.org/consumerproducts). By 2014, an estimated $2.6 trillion in manufactured goods will use this technology.

"As the commercialization of increasingly sophisticated nanotechnologies gathers pace," Maynard said, "industry, regulators and the public need sound information, now more than ever, on which to base their decisions. They also need the assurance that there is a strategy in place to fill knowledge gaps about risks as fast and efficiently as possible."

Source: Project on Emerging Nanotechnologies