

New Federal Nanotechnology Bill Takes Small Steps Towards
Addressing the Environmental and Health Implications of
Nanotechnology | 1

The House Science and Technology Committee recently introduced H.R. 554, [National Nanotechnology Initiative Amendments Act of 2009](#). The Committee hailed the bill, which is virtually identical to last session's H.R. 5750, as serving to "strengthen and provide transparency to the federal research effort to understand the potential environmental, health, and safety risks of nanotechnology." It is true that the bill does include limited steps meant to address environmental and occupational concerns haunting the nanotechnology sector. For example, it requires federal agencies involved in the National Nanotechnology Initiative (NNI) to develop a research plan setting out research objectives and funding over the next four years. Yet the measures make just a nano-sized dent in the environmental issues facing regulators, business and the public. Despite its characterization as ensuring safety, the bill is essentially a planning and organizational bill designed to light a fire under the NNI in a variety of areas, most notably commercialization/technology transfer and education, in addition to environmental and occupational health concerns.

While the bill rightly recognizes the importance of environmental, health and safety (EHS) issues and supports research on those issues, it does not integrate EHS into the broader R&D, technology transfer, and education segments of the bill. This concern involves two points.

First, because nanotechnology manufacturing is relatively new, there is an opportunity to build environmental, health and safety principles in the emerging manufacturing processes and products at the outset, rather than attempting to control releases and exposures in the future. Section 6 of the bill acknowledges this in the context of interdisciplinary research centers, mandating that such centers perform research on methods and approaches to develop "environmentally benign nanoscale products and nanoscale manufacturing processes." This focus on environmentally benign products and processes should be integrated into other core portions of the bill, as described in the examples below. Safe design is integral to and not separate from the EHS agenda. This is the financial return that will pay for the EHS research in multiples. Second, while the bill emphasizes the importance of performing research on EHS issues generally, it does not encourage a focus on EHS impacts in the core provisions relating to basic research, commercialization and technology transfer, as described in the examples below.

Specific examples of integration opportunities can be found in various sections of the bill. Section 2 of the bill expands the scope of the NNI and articulates the components of the triennial strategic plan, but fails to mention research and encouragement of environmentally benign processes and products. Section 3(b) of the bill requires development of a comprehensive research plan, including elements relating to EHS issues. The research plan should specifically include focus on environmentally benign processes

New Federal Nanotechnology Bill Takes Small Steps Towards
Addressing the Environmental and Health Implications of
Nanotechnology | 2

and products. Section 4 of the bill sets out criteria for access to government-supported nanotechnology research facilities. EHS concerns associated with the planned activity should be one of the criteria for access. Finally, Section 5 of the bill identifies areas of national importance for research. This section should include EHS generally, and environmentally benign processes and products in particular.

It's a start, no doubt, but a small one for now.

Dr. Andre Nel, Director of the UC Center for the Environmental Impact of Nanotechnology, was a co-author of this post.