

National Research Council Assessment of the Prospects for Inertial Fusion Energy

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This paper presents an overview of the National Research Council study entitled “Interim Report—Status of the Study “An Assessment of the Prospects for Inertial Fusion Energy” (National Academies Press, Washington, D.C., June, 2012, www.nap.edu). The study, commissioned by the U.S. Department of Energy, has three main elements to its charge: (a) assess the prospects for generating power using inertial confinement fusion; (b) identify the scientific and engineering challenges, cost targets, and R&D objectives associated with developing an inertial fusion energy demonstration plant; and (c) advise the U.S. Department of Energy on the preparation of an R&D roadmap aimed at developing the conceptual design of an Inertial Fusion Energy (IFE) demonstration plant. In addition to the main NRC committee addressing these three charge elements, a target physics panel established by the NRC is carrying out an assessment of the current performance of various inertial confinement fusion target technologies, and identifying the R&D challenges to providing suitable targets on the basis of parameters established and provided by the main committee. The panel is also addressing the potential impacts of the use and development of current target concepts on proliferation. While the main committee’s Interim Report has a limited scope and does not fully address all of the tasks in the charge to the committee, it does provide a status report on the committee’s progress and a summary of the committee’s preliminary conclusions and recommendations based on the information it received during its first four meetings (out of a total of six meetings) and from its review of relevant reports on the subject. The Final Report of the committee assessing the prospects for inertial fusion energy is presently in the NRC review process, with the goal that this report be released in the Fall of 2012.

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