

Abstract Submitted  
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**Fusion Energy: How to realize it sooner. And with less risk.**

JOHN SETHIAN, STEPHEN OBENSCHAIN, Plasma Physics Division, Naval Research Laboratory, Washington, DC — We submit the following prescription to successfully develop fusion energy:

- 1) Encourage competition and innovation. These are the seeds for breakthroughs. Selecting one approach at this stage is too risky.
- 2) Pursue coherent “complete” programs to develop the science and technology in concert with one another.
- 3) Make the “end product” of an attractive energy plant a criteria to evaluate merit.
- 4) Set clear goals so the criteria for redirecting/ stopping the program are unambiguous.
- 5) Reward approaches that minimize the investment needed to test the science and technology.

Against this background, we offer Fusion Energy with lasers and direct drive targets. Recent pellet designs suggest meaningful gains (20-60) with KrF laser energies of 500 kJ. Based on this we proposed a staged program to build the Fusion Test Facility [1]. The FTF will demonstrate the target physics and key technologies, and be flexible to accommodate advances in chambers, optics, and target physics. It would also lay the groundwork for a power plant.

[1] S.P. Obenschain, et al, “Pathway to a lower cost high repetition rate ignition facility” Accepted in Physics of Plasmas

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