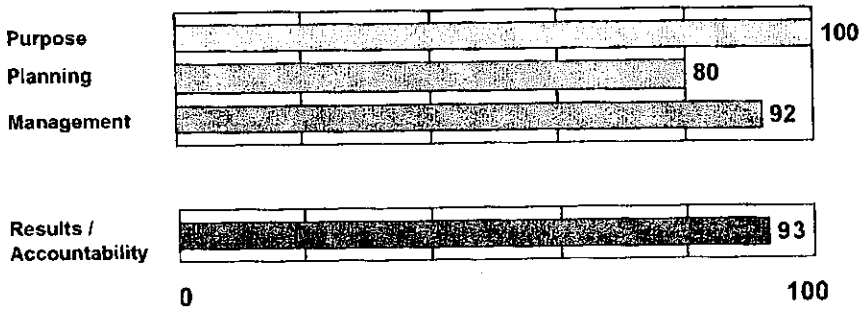
Program: *Basic Energy Sciences*

Agency: *Department of Energy*

Bureau: *Office of Science*



Key Performance Measures	*Year*	*Target*	*Actual*
Long-term Measure: Progress in designing, modeling, fabricating, characterizing, analyzing, assembling, and using a variety of new materials and structures, including metals, alloys, ceramics, polymers, biomaterials and more--particularly at the nanoscale--for energy-related applications. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.	2006	Excellent	
	2009	Excellent	
	2012	Excellent	
	2015	Excellent	
Annual Efficiency Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 31,350 hours in 2004 and 35,450 hours in 2005. The ambitiousness and appropriateness of the 90% target level is currently under review by OMB.)	2002	>90%	96%
	2003	>90%	91%
	2004	>90%	
	2005	>90%	
Annual Measure: Improve Spatial Resolution: Demonstrated spatial resolutions for imaging in the hard and soft x-ray regions, and spatial information limit for an electron microscope (measured in nanometers).	2002		150, 24, 0.09
	2003		130, 20, 0.09
	2004	<115,<19 ,<0.08	
	2005	<100,<18 ,<0.08	

Link to PART details on OMB website.

Rating: *Effective*

Program Type: *Research and Development, Competitive Grant, Capital Assets and Service Acquisition*

Program Summary:

The Office of Science's Basic Energy Sciences (BES) program funds research in materials sciences, chemistry, geosciences, and aspects of biosciences, and provides national user facilities for over 8,000 researchers annually who are funded by DOE, other federal research agencies, foreign institutions, and the private sector.

The assessment found that the BES program has developed a limited number of adequate performance measures, as recommended during the 2004 PART process. Additional findings include:

- The program is strategically driven and well managed.
- Outside expert panels have validated the program's merit-based review processes for awarding contracts and grants, resulting in a sponsored research portfolio that is generally considered to be relevant and of very high quality.
- The experimental end stations at one the program's main facilities have been underutilized at times, and there was a general lack of performance reporting on the actual use of all of the program's synchrotron light source facilities.
- The program does not include its long term research goals in grant solicitations, does not use strict quality control on performance data filed by laboratory contractors, and does not make annual aggregated grantee performance data available to the public in a transparent and meaningful manner.

In response to these findings:

1. The 2005 Budget provides funding to operate the program's main user facilities at 100 percent of maximum capacity (the same as in 2004). Funds are provided to start construction on the final nanoscale science research center and for procurement activities for a new x-ray laser light source. The Budget nearly quadruples BES basic research funding for critical hydrogen and fuel cell work in support of the President's Hydrogen Initiative.
2. The Department will continue to improve performance reporting and centralize management and planning of operations at its user facilities.
3. The Department will work to include the long-term goals of each program in grant solicitations, and will improve performance reporting by grantees and contractors.
4. The Department will work with its advisory committee to develop research milestones [by September, 2004] against which future outside panels may judge interim progress toward achieving the long-term goals of the program.

Program Funding Level (in millions of dollars)

2003 Actual	2004 Estimate	2005 Estimate
1,020	1,011	1,064