

DISCUSSION DRAFT

1 June 2006

Goals and Process to Address FESAC Ten-Year Program Planning Charge

Overall Goal: Formulate a strategic framework for making decisions to shape the US fusion program over the next ten-years prior to ITER operation. This framework would include identification of the key scientific and technical issues to be addressed by the US fusion program in context of longer term program objectives, together with a set of tactical options and decision criteria, including priorities, for: (i) the evolution of existing domestic major facilities, (ii) possible start of new domestic major facilities, (iii) collaboration with major foreign facilities, and (iv) overall US fusion program balance.

Scope: The scope of the planning exercise should include the full range of the MFE part of the US fusion program with focus on major facilities and their evolution. IFE would not be central to addressing the charge, however, it is important to include it in the overall strategic picture of the US fusion program we develop. Understanding the capabilities and plans of international major facilities will be critical to developing a complete strategic framework for US program decisions.

Approach: FESAC will appoint a Ten Year Planning Panel (TYPP) of about 12 to 15 members to execute the process of addressing the charge. The TYPP will oversee the process of fusion community engagement as recommended below, and will have primary responsibility to prepare a report to FESAC addressing the charge and meeting the Overall Goal. This will include preparation of a limited interim report on strategic options to FESAC to meet the Feb 2007 deadline for input into the FY09-FY13 budget planning process, and a final report submitted to FESAC in the Fall 2007.

Recommended Elements of the Planning Process:

- (1) Broad technical engagement of the US fusion community is critical for success of the process of developing a ten-year program plan. A variation of the previously successful “Snowmass-style” planning activities providing technical input to a follow-on FESAC Panel (1999:Priorities& Balance; 2002:Burning Plasmas) is the best approach to carry out the charge.
- (2) The Snowmass-style activity will be community wide and technically focused. This activity will be aimed at developing tactical options for addressing key scientific and technical issues of the program. These will include plans for evolution of the US facilities, and major collaboration on foreign facilities needed to carry these out. The activity will include development of “white papers” and pre-conceptual designs of facility upgrades and possible new facilities by the Snowmass-style broad-based community working groups.
- (3) The FESAC Ten Year Planning Panel will work in parallel with the Snowmass working groups’ technical activity focusing on developing elements of the strategic decision framework together with options for long term goals and

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- decision criteria for the US fusion program. This will include identification of major program building blocks at several different budget levels or ranges.
- (4) FESAC should be tightly coupled to the planning and execution of the technical Snowmass-style broad-based community activity, with the FESAC Ten Year Planning Panel (TYPP) serving as a Board of Directors.
 - (5) The TYPP will appoint the Snowmass meeting co-chairs and work with them and the broader fusion community as part of the initial Snowmass organizing meetings to construct the appropriate working group structure and appoint working group leaders.
 - (6) Foreign technical participation in the Snowmass working groups will be critical and needs to be incorporated from the outset. Foreign participation will also be useful input in assessing areas of key US fusion program strength. However, the FESAC TYPP that formulates the US fusion program plan and strategy should not include foreign participants.
 - (7) TYPP would meet with the Snowmass working group Organizers for about one week in Jan 2007 to prepare a limited interim report on strategic options to FESAC to meet the Feb 2007 deadline for input into FY09-FY13 budget planning process. The interim report would be limited to the identification of a range of options for new starts in the fusion program as the ITER roll-off begins to be available for budget planning purposes.
 - (8) The “Snowmass-style” meeting itself will take place over about a 2-week period in June-July 2007 involving a large segment of the fusion community. As in previous meeting of this type, the meeting will be organized to present and discuss the technical activities of the working groups and to engage the broad fusion community in discussion. These discussions would also provide input into the strategic options and program goals developed by the TYPP, including integration of the tactical options developed by the working groups for addressing the key scientific and technical issues of the fusion program. Previous Snowmass-style meetings in 1999 and 2002 involved about 300 to 400 participants.
 - (9) Following the Snowmass-style community meeting, the FESAC TYPP would develop the detailed response to the TYPP charge. In the case of the first two Snowmass meetings (1999 and 2002), the follow-on FESAC panels completed their work in one week-long meeting about 1 month after the respective Snowmass meetings. In addressing the TYPP charge we should plan on two (or possibly more) post-Snowmass panel meetings to finalize our Ten Year Plan for submission to FESAC.

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Time Line for Developing Ten Year Plan

- June 2006: FESAC Approves Process Plan for Addressing the Charge
Ten Year Planning Panel (TYPP) Appointed
- July 2006: Snowmass Co-Chairs Appointed by TYPP
Snowmass Working Group (SWG) Structure Defined & SWG Organizers
identified
- Aug 2006: Snowmass Working Group Charters Defined and SWG Activity Begins
TYPP meets to begin work on strategic decision framework and options for
long term goals
- Sept 2006
- Dec 2006: SWGs and TYPP work in parallel towards an “interim” progress report.
- Jan 2007: TYPP & SWG Organizers meet for about one week to prepare an interim
report on strategic options to FESAC to meet Feb 2007 deadline for input
into FY09-FY13 budget planning process. Goal is to define options for new
starts in fusion program as ITER roll-off begins to be available for budget
planning purposes.
- Feb 2007: FESAC meets to finalize TYPP Interim Report
- Feb 2007-
May 2007: SWG and TYPP complete work input to Snowmass-style community
meeting.
- June 2007-
July 2007: Snowmass community meeting takes place over 2 week period.
- Aug 2007-
Sept 2007: TYPP meets to finalize Ten Year Plan for submission to FESAC.
- Oct 2007: FESAC meets to finalize and approve Ten Year Plan.