

Proposal for Organization of PQ1 Snowmass meetings

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This includes information and notes from the June 15 Snowmass pre-meeting, and the Technology teleconference of June 22. This is *all* subject to change; your input is solicited to make this a good meeting with a useful output.

Key Changes from the Higher Ups

From a VG at the June 15 meeting:

The Three Goals and Deliverables of Snowmass

1. Bring together individuals involved with fusion research to interact with each other and to work to develop a scientific and technical basis for consensus on
 - (1) **Key issues** for plasma science, technology, and energy and environment for fusion energy development, and
 - (2) **Opportunities** and potential contributions of existing and possible future facilities and programs to reduce fusion development costs and achieve attractive economic and environmental features.
2. Provide technical and scientific input to the plans being developed by FESAC, SEAB, and the NRC.
3. Publish a technical proceedings of the activities of the Fusion Summer Study in order to provide a written record of our work.

Thus, the meeting should focus on Issues and Opportunities, as defined above. Attached is a PDF file with copies of the Dallas VGs that give more enlightenment – these would be good to read before the meeting.

Common questions have been modified significantly: Common question B has been eliminated, combined with Common question A. No explicit Common Question C discussion at the meeting.

Goals and schedule

There will be three meetings (we think, still needs official blessing) of the PQ1 subgroup during the first week, each meeting about 1:45 long. They will be on Tuesday, Wednesday, and Thursday afternoons. There is a possibility of a Friday afternoon meeting, if needed. Our deliverables after the first week are:

- A list of issues and opportunities with general consensus by the subgroup (there will be provision for minority reports).
- Two VGs for Callis to show at the Plenary Session on July 19 summarizing the above.
- A five-page summary (probably the list with explanatory notes).

The second week will consist of:

- Plenary session on Monday, where status reports from all sub-groups are presented.
- The PQ1 subgroup will meet with PQ2 and PQ3 on Tuesday to combine results, provide cross-coupling.
- *Entire* Technology group (Plasma and Chamber) meets on Wednesday to combine results, etc.
- “Dry run” plenary session on Thursday, summarizing results of the meeting, with time for discussion.
- Final presentation Friday morning. This provides input to DOE, FESAC, NRC, SEAB committees, etc.

The Tuesday and Wednesday sessions are still somewhat tentative; details are subject to change.

Finally, there will be a publication of Proceedings; the work on our contribution must be finished by August. More info will be obtained at the meeting.

Draft agenda of first week’s PQ1 meetings

Below is a strawman agenda for the first week’s meetings. Note that there is **no explicit time set aside to talk about neutral beams or lower hybrid**. There was a feeling that since the US does not currently have a program in these areas, discussion of these is moot unless someone believes that the US will start up a technology development program in these areas. There *is* some time on Thursday for other presentations. **Your opinion is solicited on this schedule!**

Tuesday, July 13

Chairman: Callis

Recorder: Wilson

Time Who-what

15 Callis - Purpose of meetings, ground rules, output expected.

30 Temkin-ECH Issues and Opportunities*

30 Swain-ICH Issues and Opportunities*

30 Schaffer-Helicity Injection Issues and Opportunities*

105 Total time

* Talk should be ≤ 10 minutes (15 minutes *max*), with no more than ~ 5 VG’s. It should cover the present status of the technology and then present a “strawman” list of issues and opportunities. The *majority* of the time should be spent in discussion.

Wednesday, July 14

Chairman: Swain

Recorder: Pinsker

Time Who-what

15 Wilson-Recap/summary of yesterday's discussions

30 Baylor-Pellet Injection Issues and Opportunities*

30 Hwang-Compact Torus Inj. Issues and Opportunities*

30 Jernigan/Kellman-Disruption mitigation Issues and Opportunities*

105 Total time

* Talk should be ≤ 10 minutes (15 minutes *max*), with no more than ~ 5 VG's. It should cover the present status serendipity of the technology and then present a "strawman" list of issues and opportunities. The *majority* of the time should be spent in discussion.

Thursday, July 15

Chairman: Temkin?

Recorder: Baylor?

Time Who-what

15 Pinsker-Recap/summary of yesterday's discussions

30 Presentation(s) of other advocates

45 Summarize, arrive at coordinated list of issues and opportunities

15 Assign writing chores for weekend

105 Total time

Strawman Issues and Opportunities Summary:

As a way to get organized, I am suggesting that we all use the following format to make a short list of issues and opportunities in each of our areas. It's partly filled in for IC and EC. The second column is for TBD stuff; possibilities are the degree of the concept (CE, PoP, PE as for the confinement concepts), rank in importance, or whatever. The last column will contain a reference to notes further describing the task, with the notes given below the chart. Speakers and other advocates should bring these to the meeting, and e-mail to me in advance if possible.

Area	(?)	Issue	Opportunity	Notes
IC Tech.		Develop high-power-density steady-state launchers ($p_{rf} \geq 4 \text{ MW/m}^2$)		
IC Tech		Develop system for fast control of current-drive efficiency and directivity.		
EC Tech		Develop ≥ 2 -MW sources at frequencies $\geq 140 \text{ GHz}$.		
EC Tech		Develop reliable, low-cost windows that can transmit $\geq 3 \text{ MW}$.		
EC Tech		Develop reliable, steerable launcher for off-axis H&CD		
IC Phys				

Notes: