

CCSP Collated Comments Prospectus 3.4

NOAA Comments

General Overall Comment

Given, the natural link among the meridional overturning circulation change, the Greenland ice sheet variability and the increase of greenhouse gas is addressed in these two separate products (S&A Products 1.2 and 3.4 [1.3i, iii, iv]), the author teams need to coordinate closely.

The SAP 3.4 coordinating committee agrees with this concern. Every effort will be made to work with Joan Fitzpatrick and the SAP committee for product 1.2 so that both studies compliment one another rather than duplicating efforts. However, given the nature of the topics, some overlap is inevitable.

General Comments

Do an overall edit to catch minor typos and grammar errors, such as “becomes” should be “become” on line 2 of page 4; on line 3 of page 4, remove “to” in front of “precipitation”, and; on line 41 of page 11, use “principal”, instead of “principle,”

The prospectus was given another re-read before being turned back in.

Detailed Comments

Page 2, lines 24 -33: The authors attempt to distinguish between their foci and the foci of the (separate) climate extremes assessment (i.e., Product 3.3). They state that they will consider extreme events (e.g., changes in storms) under Abrupt Climate Change (ACC), but only when they are embedded in a shift to a new stable climate state of considerable duration. This does not adequately distinguish between how “storms” will be considered in SAP 3.3 versus SAP 3.4, and will require additional iteration.

We rewrote this section to distinguish the potential increase in frequency of extreme events as a consequence of abrupt climate change, which would present unique challenges to society.

The statement “In contrast, extreme events of short duration occurring in the absence of a shift in climate reflect a transient and perturbed state that is followed by a return to initial conditions, and are not considered here.” seems to imply that this is the territory of Product 3.3. However, Product 3.3 is interested in changes in weather and climate extremes in a warming world in which there is not expected to be “a return to initial conditions” and, also, the extremes (like megadroughts) may not be “of short duration”. Therefore, if this sentence is meant to characterize Product 3.3, it is not correct.

This statement was removed from the prospectus.

Page 4, line 21: “What are the global and regional impacts of a change in the overturning circulation?”

In addition to “the global and regional impacts” (spatial extent), the influence of the overturning circulation change on short-term climate modes and weather characteristics (temporal extent) should also be addressed in the question.

Add one sentence.

Page 4, line 30: “A second benefit will be to apply the probability evaluation recently developed for global warming to the probability of overturning circulation change.” There is no context given for this statement. Is the “the probability evaluation recently developed for global warming” related to climate sensitivity pdf statistics? There should be a reference.

This discussion was reworded and moved to “Section 1.2 Intended Use and Audience.” A reference (Knutty, et al., 2002) was also added.

Page 5, line 22-23: “What states of ocean/atmospheric conditions ... are likely to have been responsible for sustained megadroughts?”

In addition to the “states of ocean/atmospheric conditions”, the strength of land-atmosphere coupling, which is related to predictability of the third kind, should also be investigated, when looking for responsible factors for sustained megadrought.

This question was reworded to include “land-atmosphere coupling.”

Page 6, line 12: Another question for consideration is the impact on the climate system of various “quantities” of methane release, i.e., how much methane does it take to have an appreciable impact and how does this relate to the reservoirs of methane and their possible release rates? This issue appears in part in the other questions, but is not explicit.

This question was added to the list.

DOE Comments

How is 1.2 related to 3.4? Page 7, line 3 refers to 1.2

It is not clear in which of the assessment products Arctic processes will be dealt with in 3.4. Given these assessment products in the same stage of evolution, there needs to be some cross-talk so redundancy is reduced.

This comment was addressed above under the NOAA comments.

Page 2 line 45-46 I suggest deleting this. It looks more like setting of research agenda rather than an assessment. This Synthesis and Assessment product should not serve as a

‘roadmap for future research’. It should serve as an assessment of the state of knowledge on the questions the draft prospectus raises. It should reflect the areas where the science is mature. On the issue of Abrupt Climate Change, it is likely that a lot is still poorly understood, but that is what an assessment product is supposed to be.

We took out this line from the prospectus.

If the product is to be developed under FACA, then how can they conduct open Workshops? Are these information gathering workshops for FACA?? According to my understanding, the report should be written solely by FACA members with no external input, except through formal avenues set in place such as peer review, public comment, NSTC review.

The reviewer is mistaken about this. The SAP 3.4 FACA committee will be a blend of special government employees (SGEs) from academia and regular government employees (RGEs). Under FACA, committee meetings are required by law to be open to the public (except under the special circumstances detailed in the “Government in the Sunshine Act”).

Page 5 line 8: I didn’t know we could have La Ninas in the North Pacific...?? Did you mean ‘equatorial Pacific’?

We took out the word North.

Page 5 line 17: What do you mean by ‘reanalysis (past 100 year) record’? ECMWF and NCEP reanalysis are from 1948-current. Did you mean ‘historical’ record??

We changed this sentence to read, “over the historical record.”

DOE is not a supporting agency for this SAP. DOE-sponsored PIs have considerable expertise in climate change projections based on state-of-the-art coupled climate models dealing with issues associated with 3.4. Should the lead and supporting agencies require input (for reviews or as participants of prospectus) they may get in touch with DOE.

Duly noted. USGS may call upon DOE for input or review in the future.