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Life cycle environmental impacts of HPC systems

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On a recent visit to NSF, I was asked about how Blue Waters was decommissioned. After describing the process, they asked me if I would write a paper/report on the process and the environmental impact. This expanded from the typical paper about the energy used by supercomputers to interest in the e-waste and other impacts. In fact, some recent decadal reports from science domains (e.g. astrophysics and astronomy) have noted the desire to decrease the use of HPC because of the impacts on the environments.

Thinking about e-waste was a new twist for me, and I don't understand why someone would think a super-computer has more environmental impact than other things including hyperscaler systems and even cruise boats. Further, past energy only studies have only included energy costs and does not account for the positive impacts that are produced by use of HPC.

I would like to collaborate with others who may be able to add their sites' analysis to the report.

JLESC topic

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