

ePIC Barrel ECAL Technology Review

Charge to the Committee

The scope of this review is to gather information and feedback on the anticipated performance, cost and risk of two proposed technology choices (scintillating glass and imaging calorimeter) for the ePIC barrel electromagnetic calorimetry system. This review should include both the detector itself and the required readout and digitization electronics.

It is understood that both technology choices are currently evolving from advanced conceptual designs to full technical designs and should be evaluated with this level of development in mind. For the ePIC Barrel ECAL Technology Review, you are asked to address the following questions for each of the two technology options:

1. Is the anticipated performance, as demonstrated by simulations, test beam, R&D, etc. realistic given existing experience? Is the anticipated performance adequate to address the full EIC science program, as outlined in the National Academy ([link](#)) report and the EICUG Yellow Report ([link](#))?
2. Are the plans for the detector front-end electronics realistic and well-matched to the sensor properties? Is the detector readout compatible with a streaming readout DAQ, as planned for ePIC?
3. Does the mechanical integration of the detector present any unique challenges?
4. Is there an adequate workforce to build, commission and maintain the detector, or are there adequate plans to evolve the workforce towards these goals?
5. Is the cost and schedule presented realistic? Are the production capabilities of vendors fully understood and consistent with the schedule?
6. Have the proponents adequately identified technical, cost and schedule risks? Are appropriate risk mitigations identified?

Please address the above questions point-by-point.