

Overview of The Energy Exascale Earth System Model (E3SM) Project's Progress and Plans

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The project's long-term goal is the development of Earth system models that address the grand challenge of actionable predictions of Earth system variability and change, with an emphasis on the most critical scientific questions facing the nation and DOE. The grand challenge will be addressed by overcoming two major limitations:

Pushing the high-resolution frontier of Earth system modeling through a combination of strategic model development and computational advances targeting exascale computers and beyond.

Bridging the gap in scales and processes by developing a new class of models that couple the natural, managed, and man-made systems across scales to address energy sector vulnerability to variability and change.

We present an introduction to more detailed talks on progress in Phase 2. Additionally, we will present a future view of the project for the next two model generations, leading to an exascale-capable Earth system model three to four years.