

Genesis Mission

...and my thoughts for the BUQ consortium

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Genesis Mission



U.S. DEPARTMENT of ENERGY

Office of Science (SC), Office of Critical Minerals and Energy Innovation (CMEDI), Office of Environmental Management (EM), Office of Electricity (OE), Hydrocarbons and Geothermal Energy Office (HGEO), and Office of Nuclear Energy (NE)



Genesis Mission

The Genesis Mission: Transforming Science and Energy with AI

Notice of Request for Application (RFA) Number:
DE-FOA-0003612

RFA Type: Initial
Assistance Listings: 81.049

RFA Issue Date:	March 17, 2026
Submission Deadline for FY26 Phase I Applications:	April 28, 2026, at 11:59 PM Eastern
Submission Deadline for FY26 Phase II Letters of Intent:	April 28, 2026, at 5 PM Eastern
Submission Deadline for FY26 Phase II Applications:	May 19, 2026, at 11:59 PM Eastern
Submission Deadline for Phase II Applications resulting from FY26 Phase I Awards:	December 17, 2026, at 11:59 PM Eastern

Goal: To demonstrate AI Advantage

- Basic parameters: **\$294M total**, funded by different offices at varying levels
 - HEP has **contributed ~\$15M, NP up to \$20M**, other offices unknown
 - Of 99 Focus Areas, 9 with participation by HEP, of which 6 are HEP/NP, plus 14 FES
 - ASCR has stated its intention to potentially co-fund all subtopics
- **Phase 1 awards**
 - \$500-750k for a **9-month period** of performance (7/1/26 – 3/31/27)
 - Requires partnership with at least 2 of 3 entities: NL, academia, industry
 - LBNL can submit one proposal per subtopic as lead lab (Phase 1&2); we can partner on unlimited proposals; **due date is April 28** (no LOI required)
- **Phase 2 awards – high bar for selection; amendment with details coming**
 - Funding is **3-5x the level of effort** of Phase 1 per year, for three years
 - **Must have NL and industry partners; academia encouraged but optional**
 - **LOI required on April 28, proposals due May 19**
 - Phase 2 proposals resulting from Phase 1 awards will be due December 17, 2026

[summary from LBNL PSA Townhall]

HEP and NP sponsored Genesis subtopics

Code	Topic	Focus Area	Office(s)
7E	Discovering Quantum Algorithms with AI	Quantum Advantage for Nuclear and Hadronic Systems	NP, HEP
8B	Realizing Quantum Systems for Discovery	AI for Control of Quantum System	HEP, NP
8C	Realizing Quantum Systems for Discovery	AI for Quantum Imaging and Sensing	HEP, NP
9F	Recentring Microelectronics in America	Microelectronics in Harsh Environments	HEP
9I	Recentring Microelectronics in America	Low-temperature Electronics for Sensors and Computation	ASCR, HEP
13A	Enhancing Particle Accelerators for Discovery	AI-driven Accelerator Facilities	BES, HEP, IRP, NP
14A	Unifying Physics from Quarks to the Cosmos	Foundation Models of Particle Interactions and Cosmic Physic	HEP, NP
14B	Unifying Physics from Quarks to the Cosmos	AI Accelerated DUNE Science	HEP
14C	Unifying Physics from Quarks to the Cosmos	Expedited Discovery from High Complexity and Petabyte-Scale	HEP, NP

Each institution can submit one proposal as the lead per subtopic

Comments for the BUQ Consortium

- LBNL has run out of lead institution “quota” in 14A and 14C. I suspect this is the case for other national labs or large R-I institutions.
- Smaller institutions should consider building a coalition:
 - Phase-I proposal now — proposal due on April 28, 2026
 - Join with other Phase-I projects to file a Phase-II proposal later
 - It seems to me that the more Phase-I projects now could make it easier for a larger Phase-II consortium
- It’s a lot of money (\$294M) AND it isn’t a lot of money (to split between projects) in Phase-I:
 - a. $(\$294\text{M})/(\$500\text{K}/\text{project})/(99 \text{ topic areas}) = \sim 6 \text{ projects/topic area}$
 - b. $(\$20\text{M}/\text{NP})/(\$500\text{K}/\text{project})/(5 \text{ NP topic areas}) = \sim 8 \text{ projects/NP topic area}$
- Phase-II is 3-5x of Phase-I. Say $5x(\$500\text{K} \rightarrow \$750\text{K}) = \$2.5\text{M} \rightarrow \3.75M . (cf. BUQ phase-II: \$2.3M)

Difficulties for BUQ to overcome

- Have we decided on what to do beyond BUQ Phase-II? What does the future look like for our consortium? Our BUQ Phase-II ends on 9/30/2027.
- How will we achieve this yet-to-be-defined vision? Strategic discussions:
 - Do we have any GM Phase I submission to buy us some time?
 - Do we submit any LOI for GM Phase II? If so, what will we propose? Which institution will lead?
- Do we want to have a crash program (within the scope of BUQ Phase II) to develop this vision, or to gather evidence for a future BUQ proposal (including a GM proposal)?
- Must have an industry partner in GM Phase-II. Do we have any concrete idea on this?

These are some questions we must answer soon, regardless of whether we apply for GM.