

# PUBLIC SUBMISSION

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## Submitter Information

**Name:** Siddharth Nandagopal

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## General Comment

Re: Request for Information—Development of a 2025 National Artificial Intelligence (AI) Research and Development Strategic Plan  
(Docket ID NSF-2025-OGC-0001)

Dear Mr. D’Souza,

Thank you for inviting public comment on the 2025 update to the National Artificial Intelligence (AI) Research and Development Strategic Plan.

As a private individual who works with small companies, universities, and professional organizations, I have seen first-hand how scarce—and how unevenly priced—advanced computing has become. The attached brief offers one practical, low-cost idea for financializing compute: a National Compute Exchange (NCX) that would turn idle GPU and CPU hours throughout the country into an open, price-transparent marketplace for science.

I submit this single recommendation in hopes it will spark further discussion as OSTP finalizes the 2025 strategy.

Respectfully,

Siddharth Nandagopal

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## Attachments

Request for Information--Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan--Docket ID NSF-2025-OGC-0001

27 May 2025

Faisal D'Souza

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Office of Science and Technology Policy

Networking and Information Technology Research and Development (NITRD)

National Coordination Office (NCO)

National Science Foundation

Re: Request for Information—Development of a 2025 National Artificial Intelligence (AI) Research and Development Strategic Plan (Docket ID NSF-2025-OGC-0001)

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As a private individual who works with small companies, universities, and professional organizations, I have seen first-hand how scarce—and how unevenly priced—advanced computing has become. The attached brief offers one practical, low-cost idea for **financializing compute**: a **National Compute Exchange (NCX)** that would turn idle GPU and CPU hours throughout the country into an open, price-transparent marketplace for science.

I submit this single recommendation in hopes it will spark further discussion as OSTP finalizes the 2025 strategy.

Respectfully,

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- Siddharth Nandagopal

## Recommendation

### 1. National Compute Exchange—Making Compute a Tradable Commodity

American discovery increasingly depends on short bursts of extreme computing, yet our capacity is locked behind scattered price lists and long-term contracts. Professors at small universities, community colleges may wait weeks for affordable GPU time, while federal machines purchased “just in case” hum quietly between grant cycles and private clouds idle each evening. The nation pays three times: once to buy hardware, again to let it sit, and a third time in lost scientific momentum.

A straightforward remedy is to turn surplus compute into a commodity that anyone can buy or sell in real time. I recommend that NSF, DOE, and NIST pilot a **National Compute Exchange (NCX)**—a single online market where agencies, universities, start-ups, and cloud providers can post spare CPU or GPU hours and researchers can bid for them as easily as travelers book a room on Airbnb or investors trade electricity futures.

- a) **Financializing compute.** Idle cycles become a meterable asset (like electricity futures); owners earn micro-royalties each time their hardware runs a vetted research job (eg: AI model training).
- b) **One-click portability.** A lightweight, open-source “API wrapper” sits atop existing cloud and HPC interfaces, so jobs can slide from one provider to another without code rewrites.
- c) **No new bricks-and-mortar.** The exchange rides on today’s commercial spot-market software and FedRAMP-approved billing rails; start-up cost is minimal and can be covered by a small transaction fee.

The benefits are immediate. Transparent bidding should pull spot-GPU prices down for small labs and minority-serving institutions while allowing agencies to hedge future workloads instead of hoarding hardware. Cloud operators and national labs, for their part, earn micro-royalties on cycles that would otherwise be wasted, funding the exchange after its first year. Finally, the daily price and volume data produced by the NCX give policymakers a live “compute barometer,” revealing where genuine shortages exist so that CHIPS-Act incentives can be aimed with better precision.

Building the exchange is inexpensive. Commercial spot-market software already handles metering and billing; adapting it requires modest configuration, not new construction. A

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fractional transaction fee can cover operations and flow the remainder back to capacity owners, ensuring long-term sustainability without a standing appropriation.

By transforming idle silicon into an open marketplace, the NCX would lower barriers for every researcher, squeeze more science from every federal dollar, and advertise—in hard numbers—where America must invest next to out-pace strategic competitors. It is a small, practical step that turns the abstract notion of financializing compute into a concrete engine for faster, broader, and cheaper innovation.

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