

Date: November 11, 2024
To: Office of Critical and Emerging Technologies, Department of Energy.
Re: Public Comment on Request for Information (RFI) on Frontiers in AI for Science, Security, and Technology (FASST) Initiative.

On behalf of Public Knowledge, we are writing in response to the Department of Energy's Request for Information (RFI) on the Frontiers in AI for Science, Security, and Technology (FASST) initiative.

We applaud the DOE's vision for this critical program and support DOE's role as a leader in advancing AI technologies for national benefit. As detailed below, our support for the DOE's FASST initiative is grounded in the essential need to build federal capacity on AI, foster public infrastructure in AI at every level of the technology stack, and ultimately position the United States as a global leader in safe, trustworthy, and innovative AI systems.

The Importance of Investing in Public AI Infrastructure.

Investing in public AI infrastructure, as envisioned in FASST, brings distinct advantages over relying solely on private industry. As noted in a recent [white paper on Public AI](#), public AI infrastructure promotes trust, accountability, and long-term viability, features that are particularly important in the AI landscape where unregulated private models may prioritize profit over public good. Public infrastructure supports applications that may have limited commercial value but are of high public importance, such as foundational scientific research, development of energy-efficient technologies, and advancements in medical AI models. Private firms may overlook these areas due to limited short-term profitability, yet they represent substantial public benefit and are essential to addressing complex, long-term challenges in science, health, and energy.¹

Moreover, public resources can enable broader competition by breaking down costly barriers to entry in the AI ecosystem. Development of, and access to, high quality data, cutting-edge compute infrastructure, and open access AI models will ensure that the United States maintains a dynamic, competitive, and innovative AI ecosystem.² In contrast, reliance on a few private firms for AI infrastructure can lead to monopolistic practices, diminished consumer choice, and vulnerability to issues like price increases and quality reductions.

¹RFI Questions 2(d), 4.

² RFI Question 2(a).

Finally, investing in Public AI systems through programs like FASST will ensure accountability, encourage trustworthy development, and solidify the United States as a global leader in safe and trustworthy innovation in AI. As DOE envisions, a publicly supported FASST program offers a balanced approach to AI development, prioritizing the common good, advancing knowledge, and driving economic growth in ways that private sector efforts alone may not achieve.

The Importance of FASST's Focus Across the AI Stack.

FASST's commitment to building AI infrastructure across every layer of the technology stack—from data management to computing and applications—demonstrates a comprehensive approach to fostering a robust AI ecosystem. Public infrastructure in AI is essential to balancing the dominance of private firms that currently control much of the sector's widely available compute power, models, and proprietary datasets. By offering accessible public alternatives and investments in AI infrastructure, FASST can promote a more competitive marketplace, foster innovation, and ensure equitable access to high-quality AI resources.

Each layer of the technology stack is essential to AI development. Public AI infrastructure provides broad access to key capabilities, accountability mechanisms that keep AI models aligned with public values, and ensures that AI technologies are sustained as public goods. This strategy reduces entry barriers and allows small businesses, research institutions, and non-profit organizations to contribute to AI innovation without dependency on large, privately held resources.

The DOE is an Excellent Leader for Public AI Infrastructure Investment.

DOE's established expertise, infrastructure, and collaborative relationships make it uniquely positioned to lead an AI infrastructure program like FASST effectively. With over 17 national laboratories and unparalleled experience in supercomputing, data science, and public-private partnerships, the DOE is a trusted institution with a legacy of tackling some of the nation's most pressing scientific and technological challenges. FASST will leverage DOE's extensive data generation capabilities, particularly in classified and unclassified scientific data, along with its computing power, which has long supported vital national security and scientific research endeavors. By investing in FASST and the DOE, our public investment in AI infrastructure and capacity will be guided by an agency that is both mission-driven and publicly accountable, a quality essential for AI systems that increasingly shape public life.

The Importance of Building Federal Capacity in AI.

Building AI capacity within the federal government is essential for promoting an innovative and trustworthy AI ecosystem. By establishing FASST, DOE can lead the way in equipping the federal workforce with the technical expertise needed to implement, govern, and advance AI in service of public interest. Additionally, FASST's emphasis on developing technical expertise in AI governance will ensure that the government can independently validate and monitor AI models, providing standards that the industry can trust and follow.

The FASST initiative can help create AI-literate public sector leaders and bolster the federal government's ability to responsibly oversee AI developments. This approach ensures that the development of AI technologies aligns with national values and needs, allowing for better control over AI's trajectory to prevent potential misuse.

FASST Should Continue the Preference for Open Source and Open Access.

In response to the RFI questions on data governance and open-sourcing AI models, DOE should prioritize practices that balance accessibility with security, while recognizing the unique advantages of open-source AI models. Making models widely available supports competition and innovation while improving transparency and evaluation. Openness reduces barriers to entry in the AI market, enabling a diverse set of voices to contribute to the development of AI technologies, and fosters a more competitive and innovative ecosystem than is possible through closed, proprietary approaches. Open-sourced also builds transparency and accountability into AI systems by allowing external validation and testing.

When it comes to data governance,³ DOE should focus on data governance practices that ensure transparency and public accessibility, while also addressing security concerns. Open-sourcing scientific data creates opportunities to accelerate innovation and promote inclusive research. Openness enables rapid and inclusive innovation by making foundational resources accessible across sectors and empowering researchers and developers outside traditional tech industry circles to contribute meaningfully to AI progress. However, DOE must establish clear guidelines to manage sensitive data, ensuring that openness does not compromise security but instead bolsters public confidence in the integrity and safety of AI-driven scientific research.

When it comes to open-sourcing scientific and applied energy AI models, the open release of model weights offers substantial public benefits by fostering collaboration,

³ RFI Question 1(a).

accountability, and safety.⁴ Open-source AI models are critical for creating transparent and auditable systems, allowing researchers, civil society, and independent experts to scrutinize and improve AI tools. This openness not only advances scientific discovery but also helps maintain standards of ethical and responsible AI development. To address national security concerns, DOE should implement red-teaming, rigorous safety testing, phased release, and other emerging industry best practices to balance safety and security with openness and accessibility. A balanced approach recognizes that while some AI applications warrant limitations on access, openness in scientific and energy-focused models enhances trust, accountability, and community-driven improvements, serving the public good.

Conclusion

Public Knowledge wholeheartedly supports DOE's proposed FASST initiative and commends the Department's commitment to building a secure, accountable, and innovative AI landscape. The DOE is well-suited to lead this initiative, and FASST's focus on capacity-building, public infrastructure, and strategic investments at every level of the technology stack will ensure a resilient, public-centered AI ecosystem. We urge DOE to move forward with this vision and remain committed to aligning FASST with the principles of public access, accountability, and building permanent public goods.

Thank you for the opportunity to submit these comments. Public Knowledge looks forward to seeing the DOE implement this transformative vision for AI infrastructure that will benefit the public and drive scientific and economic progress for decades to come.

Respectfully,

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⁴ RFI Question 3(a).