Fusion Technical Working Group (FUS-TWG)

Master Plan for Responsible Advanced Development in New York

Tuesday, May 19, 2026; 12:00 p.m. to 2:00 p.m. EDT

Discussion Summary

Introductions

- The facilitator from Eastern Research Group (ERG), a New York State Energy Research and Development Authority (NYSERDA) contractor, welcomed TWG members and reviewed the objectives of the FUS-TWG.
- The facilitator reviewed the agenda, which focused on validating technical challenges, assessing investment gaps, and discussing commercialization timelines.

Fusion Commercialization Challenges

- Brattle, the contractor researching and writing the Fusion Study for the Master Plan, presented an overview of cross-cutting technical challenges associated with fusion commercialization.
    - The Fusion Study distinguishes between near-term pilot-scale challenges and longer term challenges related to sustained operation and scalability.
    - Brattle identified system integration and engineering validation as key challenges across both timelines, while tritium fuel cycle and materials performance become more significant over time.
    - The presentation highlighted New York State's strengths in lasers and optics, superconducting materials, advanced materials research, and precision manufacturing.
- TWG member feedback:
    - The TWG widely identified engineering gain as a central challenge for sustained operation and scalability, with multiple technical issues contributing to overall system performance.
    - System integration is a key challenge as developers move from individual components to fully integrated systems.
    - Tritium fuel cycle and breeding are critical constraints, particularly for first-of-a-kind systems.
    - Distinguishing between system integration and reliability is important, as reliability becomes more critical for commercial deployment.
    - Non-technical challenges, including regulatory considerations and siting, are also important factors influencing deployment.

- New York State's strengths in research institutions, workforce development, and supply chain capabilities were highlighted, along with the importance of coordination across academia, industry, and government.
- Discussions also focused on how state support could address key challenges, including improving the use of existing facilities.
- Identifying specific gaps in the types of critical facilities New York State needs is challenging. Developing a prioritized list of needs could better answer the question of where state support could have the greatest impact.
- Opportunities for state support include leveraging existing state programs, expanding support for emerging technologies, and identifying materials in the supply chain that could have applications beyond fusion.
- Examples from other regions highlighted the role of coordinated ecosystems, public–private partnerships, and targeted incentives in attracting investment and supporting development.
- The importance of building a cohesive ecosystem—including research, workforce, supply chain, and industry partnerships—was highlighted as a key factor in enabling the state's long-term leadership in fusion.

Investments in Fusion

- The next discussion topic covered investments in fusion, including funding gaps, the role of public and private investment, and potential roles for state support across fusion development stages.
- TWG member feedback:
  - High capital requirements, technical uncertainty, and long development timelines are key barriers to investment.
  - Private investment is significant but concentrated among a limited number of companies, with insufficient support for supply chains, infrastructure, and early-stage research.
  - Public funding is limited and inconsistent, with funding remaining flat in recent years and inflation reducing real funding levels.
  - Public funding and coordinated support mechanisms, including public–private partnerships and co-investment models, can reduce investment risks.
  - The TWG identified potential opportunities to leverage state funding to attract private investment and support broader development of a fusion ecosystem.
  - Workforce development and support for university-based research are key gaps where state intervention could be impactful.
  - Supply chain companies face unique funding challenges and may require different investment approaches than fusion technology developers.
  - Examples from other states highlighted the effectiveness of coordinated incentives, workforce programs, and economic development strategies in attracting industry investment.

- International models that use public–private partnerships, coordinated funding, and workforce programs are effective approaches to support commercialization.

Commercialization Timeline

- The TWG discussed the anticipated timelines for fusion commercial deployment, as well as how New York State can position itself now to support long-term development.
- TWG member feedback:
  - The timeline for commercialization depends not only on achieving technical milestones, but also on demonstrating the ability to scale and operate reliably, the availability and cost of key materials, and many other variables.
  - The commercialization timeline may be less important than demonstrating continued progress toward key technical and deployment goals and establishing a strong foundation for future growth.
  - In the near term, New York State may be positioned to focus on strengthening supply chain capabilities.
  - Building a supportive fusion ecosystem—including grid integration along with workforce development, investment incentives, and stakeholder engagement—could give New York State a competitive advantage as the industry matures.

Next Steps and Action Items

- NYSERDA and ERG will continue to convene the FUS-TWG to gather member input on key technical, policy, and commercialization topics related to advancing fusion development in New York State.

Task	Assigned to	Target date
Share meeting 2 summary notes and presentation slides with TWG members.	ERG/NYSERDA	June 3, 2026
Distribute agenda for the June 17 FUS-TWG meeting.	ERG/NYSERDA	June 12, 2026
Submit additional comments or feedback following Meeting 2.	All TWG members	As needed

Participants

Member Organizations

Columbia University
Fusion Consultants
Idaho National Laboratory
Lawrence Livermore National Laboratory
Oak Ridge National Laboratory
Princeton Plasma Physics Laboratory
Rensselaer Polytechnic Institute
Stony Brook University

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