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Who will power the future of fusion? Results from the International Atomic Energy Agency meeting on developing the global fusion workforce

Meeting fusion labor needs requires filling education and training gaps through collaboration and attracting talent from fusion-adjacent sectors.

CHICAGO—In the past few years, fusion energy has entered an age of acceleration. Global investment has boomed, with almost $5 billion in funding committed in 2026, and multiple fusion testbeds and first-of-a-kind devices move closer to realization. As international fusion programs advance toward pilot plants and commercial deployment, the community has recognized the critical need to develop comprehensive educational and workforce development plans to sustain the fusion ecosystem of the future.

In April 2026, more than 80 experts from 33 member states around the world gathered at the International Atomic Energy Agency's headquarters in Vienna for the inaugural Technical Meeting on Developing the Fusion Workforce. The meeting brought together representatives from countries with both developed and developing fusion energy programs to share their experience with workforce development and support international cooperation on fusion initiatives.



Figure 1: Experts from 33 member states around the world gathered at the International Atomic Energy Agency's headquarters in Vienna for the inaugural Technical Meeting on Developing the Fusion Workforce.

Meeting sessions examined both national and organizational roadmaps and how they met the needs of the fusion industry, projected staffing needs, outreach challenges, and the need for a working taxonomy of jobs and skills needed for the future fusion economy. They also explored how public-private partnerships could connect fusion companies and research institutions to better design education and training programs to meet expected workforce needs.

Meeting the future demand for fusion energy will also require more than additional physicists and engineers. The fusion workforce will include technicians, fabricators, craftspeople, plant operators, regulators, project managers and professionals working in policy, communications, and other supporting fields. Even in countries that don't host a fusion company, there are opportunities in power infrastructure development and fusion component manufacturing that will require specialized knowledge and training.

Discussions emphasized the need for career pathways at every level of education, from outreach to young students and specialized fusion curriculum for bachelor's, master's, and doctoral programs to summer internships, vocational training, and fusion schools for students and young professionals interested in the field. Other sessions looked outside the traditional fusion sphere, towards sectors with many relevant skills that could be applied to fusion, like nuclear energy, engineering, AI, and aerospace science.

One of the principal outcomes from the meeting was recognizing the need for better connectivity, both internationally and within individual countries, especially in the U.S. More frequent and consistent reporting on program outcomes would allow organizations to determine which approaches are most effective, and the lessons learned can help collaborators direct resources and hone their programs to be more successful. In conjunction with this, the need for dedicated resources for workforce development was

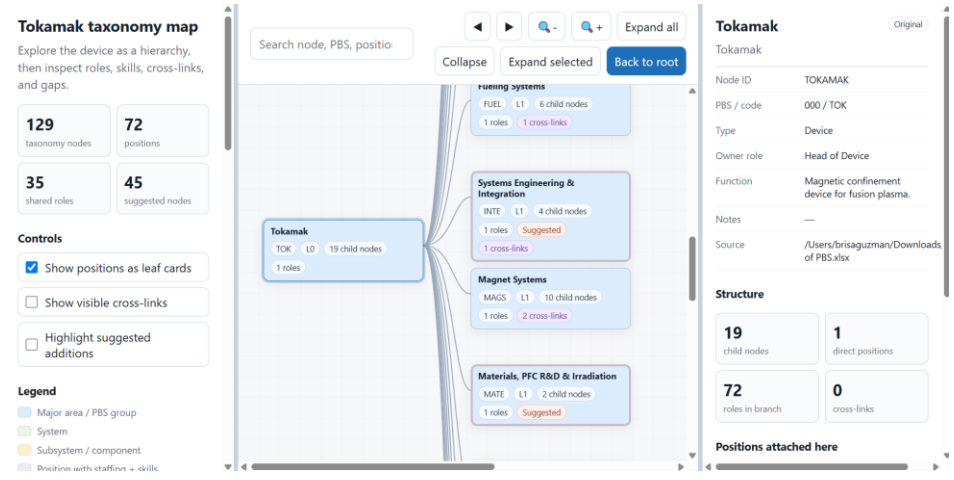


Figure 2: The event organizers used the information gathered at the meeting to build a taxonomy of fusion careers and skills – analyzing the types of jobs that can be taken from adjacent sectors, identifying new skills needed for fusion, and mapping where the relevant education and training opportunities are currently available. The IAEA plans to release the taxonomy as a tool for users to identify areas in fusion where their skills may be applicable.

highlighted, as developing comprehensive programs requires more than just volunteer and part-time efforts.

By engaging in these conversations and coordinating efforts, the international fusion community can build a robust education-to-workforce pipeline that benefits all parties and adapts to changing labor needs. Future meetings will be much larger, with a greater diversity of backgrounds and perspectives, as accelerating the deployment of fusion energy will require all hands on deck. If you are interested in adding your voice to the conversation, contact Louise Ferris at ferrisal@ornl.gov for more information.

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