

AUSTRALIA

ITER, ANSTO forge new type of agreement

The agreement will allow Australia, which is not a member of the ITER Organization, to contribute directly to the project.

Under a cooperation agreement signed with the Australian Nuclear Science and Technology Organization (ANSTO), the ITER Organization has, for the first time in its history, established a formal path to technical collaboration with a non-ITER member state. The agreement that sets out the new arrangement was signed on September 30 at the ITER facility, in St. Paul-lez-Durance, France, by Bernard Bigot, director-general of the ITER Organization, and Adi Paterson, chief executive officer of ANSTO, representing Australia's nuclear fusion community.

According to the statement released for the occasion, the agreement provides a framework for Australia's small but active community of fusion scientists and engineers to engage directly in the ITER project. For the ITER Organization and the seven ITER members—the European Union, China, India, Japan, Russia, South Korea, and the United States—this agreement, according to the statement, “is an achievement that has been a long time in the making.”

ITER, currently under construction in the south of France, is a large-scale tokamak fusion device that is intended to prove the viability of fusion as an energy source. The ITER project was established in 2006 and the first plasma is expected to be produced by December 2025.

With a tradition of fusion research dating back half a century and well-established programs at universities and laboratories throughout the country, Australia has the technical means and human capital to contribute meaningfully to the ITER project, according to the statement. The agreement allows for Australia to contribute directly to ITER in small but important areas and also for its scientists to collaborate in research at ITER. Cooperation is envisioned in a number of strategic areas, including diagnostics, materials, superconducting technology, and fusion plasma theory and modeling.

“This is a fundamental change,” said David Campbell, head of ITER's Science and Operations Department. “This is a first step in expanding our research collaborations into the wider fusion community,



Photo: ITER

The cooperation agreement, signed on September 30 by ITER Director-General Bernard Bigot (left) and ANSTO Chief Executive Officer Adi Paterson, marked a new model for engaging in the ITER project.

where there is significant, and in some cases unique, expertise.”

The fusion community recognized ANSTO’s Paterson as an advocate, which led to the opportunity to involve Australia—and, potentially, other countries and organizations—in ITER. The statement also stresses the importance of having ANSTO, an Australian federal research organization, acting for the whole Australian fusion community, which is largely made up of the country’s state-based universities and research institutes.

The agreement is considered an excellent fit for ANSTO, Paterson said. “We’re interested in strengthening international linkages. . . . We understand large-scale projects. . . . Our experience will allow us to articulate for the government what the interest of ITER can be and act as a translator

and portal for our research communities.” In addition to ANSTO, this includes the Australian National University (ANU), the University of Sydney, Curtin University, the University of Newcastle, the University of Wollongong, and Macquarie University.

“This cooperation agreement gives our efforts in Australia a little more credibility and may help us to build up the program in the future,” said John Howard, head of ANU’s Plasma Research Laboratory and its H-1 research facility. “We have a number of small plasma devices in Australia that have helped us to develop technologies that are relevant for ITER and to train a generation of students.”

At the signing ceremony, Bigot celebrated this “new model of engagement that is fully compliant with the ITER agreement,” and provides for participation in ITER

outside of full membership. “We look forward to Australia contributing solutions directly to our machine,” he added.

Paterson, who also spoke at the ceremony, said, “The benefits from this agreement will begin almost immediately. It will clear the way for John Howard’s team from ANU’s Australian Plasma Fusion Research Facility to install an Australian-developed plasma imaging system in the ITER reactor in France.”

Regarding ANSTO’s role in ITER, Paterson said, “ANSTO will use its expertise in nuclear techniques to measure the impact of the reactor vessel materials, which are placed under extreme heat and radiation inside the reactor. The state-of-the-art reactor wall materials are a core component of the project and their performance is vitally important.” **N**