

Toward closing the gender gap in nuclear science

By Miklos Gaspar and Margot Dubertrand



Muhayatun Santoso, a senior researcher at Indonesia's National Nuclear Energy Agency (BATAN), has led ground-breaking research on air pollution across Indonesia.

(Photo: BATAN)

Women make up less than a quarter of the workforce in the nuclear sector worldwide, hurting not only diversity within the industry, but also competitiveness, experts have said. Many organizations, including the IAEA, are actively working to increase the share of women in all job categories.

“Although there are many talented and highly-skilled women within the nuclear industry, we are still vastly under-represented. There is still work to do,” said Gwen Perry-Jones, Executive Director of Operations Development at the Wylfa Newydd nuclear power plant in the United Kingdom. “Diversity in the workplace benefits us all, and I fully support initiatives that encourage women to enter the industry and help them see routes to senior positions.”

Women who have made it to leadership roles are making a significant contribution. Muhayatun Santoso, a senior researcher at Indonesia's National Nuclear Energy Agency (BATAN), has led ground-breaking research into the use of nuclear techniques to measure air pollution in many of Indonesia's cities. Her work contributed to Bandung, Indonesia's third largest city, receiving the ASEAN Environmentally Sustainable Cities Award in 2017.

“Air pollution is a major problem across urban areas in Indonesia, with a surge in industrial activity and traffic increasing the amount of toxic substances in the air,” she said. “I am proud to be able to help my country tackle this major problem.”

Agneta Rising, Director General of the World Nuclear Association, is a leading specialist on nuclear energy and the environment. While she was Vice President for the Environment at Vattenfall AB, Sweden's state-owned nuclear and hydropower operator, she headed a pan-European department focused on energy, environment, and sustainability. She is also the co-founder and former President of Women in Nuclear (WiN). During her presidency, WiN quadrupled in size.

“Women are essential to the strong development of the global nuclear sector. To be the most competitive, a business needs to have the best people working for it. The nuclear industry should have programmes to attract and recruit women, otherwise they would be missing out on the competitive advantage their talents could bring,” said Rising. “When the workforce better reflects the diversity of society, including the representation of women, it also helps to build society's trust in nuclear technologies.”

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Philippine students do hands-on experiments to learn about nuclear science.

(Photo: M. Gaspar/IAEA)

At present, women make up only 22.4% of the workforce in the nuclear sector, according to data from the IAEA.

Women in Nuclear

The goal of WiN, a non-profit organization with 35,000 members in 109 countries, advocates for stronger roles for women in nuclear science and technology and to increase awareness of the importance of gender balance in historically male-dominated fields. It also promotes these areas to women making career choices.

“While there is a growing proportion of women in senior technical positions in every branch of nuclear science and technology, women are still under-represented,” said Gabriele Voigt, President of WiN and former manager of nuclear facilities and laboratories in Germany and at the IAEA.

“Part of the problem is that too few young women study science, technology, engineering, and mathematics in secondary and higher education,” she said. “Another issue is the omnipresent glass ceiling and bias — whether conscious or unconscious — that is difficult to confront in the work environment.”

WiN is helping to change that by increasing girls’ exposure to nuclear-related topics from a young age and by building a strong network of women and creating access to role models for the next generation. Some countries, including with the help of the IAEA, are introducing nuclear science to high school students with a particular emphasis on girls.

“Presenting science, and particularly nuclear science, to girls at an early age is the best

way to achieve a higher proportion of female scientists in this field,” said Micah Pacheco, regional science supervisor at the Philippines’ Ministry of Education, under whose watch several schools in the Manila area have introduced nuclear science and technology education programmes. “Nuclear is fun — girls should see that!”

The IAEA’s progress on gender parity

As of the end of 2017, the proportion of women in the professional and higher categories at the IAEA reached 29%, compared to 22.5% ten years earlier. Director General Yukiya Amano has stated that he would like to achieve gender parity at the most senior level by 2021.

“The Agency has taken concrete steps to improve the representation of women in the Secretariat through targeted recruitment efforts and awareness-raising activities, and we’ve seen improvement in the representation of women at the Agency,” said Mary Alice Hayward, Deputy Director General and Head of the Department of Management at the IAEA. “But we are conscious of the challenges that remain. Gender equality in the workplace requires more than improving the statistics — it also means making sure the IAEA is a place where women want to work.”

This includes creating a supportive environment, such as flexible working arrangements that enable staff members to combine work and family responsibilities, as well as special outreach campaigns to young women highlighting the benefits of working at the IAEA.

An example of success in reaching gender parity in senior roles at the IAEA was in the Division of Information Technology. While it is historically a male-dominated field, an active campaign and sourcing strategy resulted in targeted outreach to many qualified women candidates.

At the Office of Legal Affairs, the majority of professional staff are women.

“Not only do we have a female Director, two of the three Section Heads are also female, meaning 75% of the senior staff are women,” said Director Peri Lynne Johnson. “Furthermore, we have 11 female lawyers and ten male lawyers, and we try to ensure parity among our interns.”