

WOMEN

A DRIVING FORCE IN NUCLEAR POWER PROGRAMMES

As the global nuclear industry is poised for growth, women are taking on key leadership roles in the development of national nuclear power programmes. It is therefore not surprising that talented experts rising to the top levels of their national programmes now include more women in their ranks.

This article profiles two women who are making a difference in nuclear power programmes in their countries, explaining their career choices and their views about nuclear power.

When Poland put the nuclear option back on the national agenda, **Hanna Trojanowska** was given the responsibility for leading the Government's efforts to develop the nuclear power sector as Commissioner for Nuclear Energy in Poland.

Monira Al Kuttab was recruited by the regulatory body in the United Arab Emirates (UAE), the Federal Authority for Nuclear Regulation (FANR), to lead its Government Communications Department, an important position in supporting the leadership's commitment to ensuring safety of its first nuclear power plant.

Career paths

Hanna Trojanowska graduated with a nuclear energy specialization from the Czech University of Technology in Prague. In 1990, she received an IAEA fellowship in the UK to work (inter alia) for the Sizewell B nuclear power project which enabled her to gain valuable experience applicable to the Polish nuclear project.

However, Ms Trojanowska had to face an unpredictable event. "The announcement of the government's decision in December 1990 to abandon the construction of the nuclear power plant in Żarnowiec changed my professional life, but not my belief that one day nuclear power would become an important part of the solution to meet



Monira Al Kuttab

our sustainable development commitments and would have a great economic and social impact in our country."

After working many years in the Polish power industry and following the decision of her country to put the nuclear option back on the agenda, Ms Trojanowska was appointed Government Commissioner for Nuclear Energy and

In May 2009, Hanna Trojanowska was appointed Government Commissioner for Nuclear Energy and Undersecretary of State, Ministry of Economy, Poland.



Undersecretary of State in the Polish Ministry of Economy and given the responsibility to carry out tasks aimed at developing the nuclear power sector.

Monira Al Kuttab has a background in international affairs and communication. "After graduating from university in the United States, I worked with the UAE Embassy in Washington, DC. At that time, women's participation in political matters was still young. However, the UAE's leadership, along with our Constitution, clearly supported gender equality while further encouraging women's participation." After working for her country's oil and gas industry and when the UAE decided to start a nuclear power programme, Ms Al Kuttab was hired as Director of Government Communications in the Federal Authority for Nuclear Regulation (FANR), with the aim of supporting leadership's commitment to ensure the establishment of a nuclear safety regulatory system "that is robust, transparent, consistent with the highest international practices and standards, and modelled on UAE's needs", as Ms Al Kuttab points out.

Motivations

What inspired both Hanna Trojanowska and Monira Al Kuttab to get involved in nuclear matters?

Ms Al Kuttab was intrigued by the challenges and opportunities presented by managing the Federal Authority for Nuclear Regulation's governmental affairs. "I knew it would be exciting because my work would be mandated by the UAE leadership's vision, something I am a devout believer of. It meant having the responsibility to execute that vision into reality through transparency, communication, engagement, and trust building" she says.

Ms Trojanowska's experiences strengthened her conviction that "the security of electricity supply is an omnipresent and timeless problem, involving broader issues that go beyond the technical aspects. In addition, today's era of climate change awareness and the need to ensure electricity supply at rational costs make the decision regarding long-term investment more complex."

The influence of nuclear in the development of the country

The drivers for many countries that want to start a nuclear programme are reflected in Ms Trojanowska's motivations. "Internalization of numerous external costs of electricity production in nuclear power plants offers the promise of a stabilization of electricity generation prices over the longer term. Moreover, savings resulting from the reduction in CO2 emissions will have a great impact on the competitiveness of the Polish power sector. So, nuclear will influence the development of the domestic economy by saving organic fossil fuels for future generations. At the same time, economic innovation and development of domestic scientific research resources will be fostered. The prospect of greater participation of the Polish industry in the development of the nuclear power sector, together with supporting services, should give a boost to the regional economies."

Similarly, according to Ms Al Kuttub, "the nuclear energy option is one of the opportunities that will contribute to and enhance the diversification in the energy sector in the United Arab Emirates. Overall nuclear power generation would reduce the Emirates' carbon footprint, meet sustainability requirements and provide a high level of secure energy" she says.

Challenges

Countries embarking in a nuclear power programme face similar needs, but are also confronted with similar challenges. Ms Trojanowska highlights that "developing the civil nuclear power sector should be considered as the greatest challenge in the history of the Polish energy market and the post war economy, as well as a long term process."

"Without the assistance of international organizations such as the International Atomic Energy Agency, the OECD Nuclear Energy Agency and bilateral cooperation with countries possessing an advanced nuclear industry, such a challenge would be simply undoable or unmanageable" states Ms Trojanowska. She believes that "consultation and cooperation with these organizations will optimize the whole process and will lower the development costs wherever possible and justified."

Ms Al Kuttub's work at FANR, which engages in dialogues with a large number of stakeholders, both at a national and international level, and with other

experienced regulatory bodies, supports this challenge.

On an equally important note, all sectors of the global nuclear enterprise now recognize the challenges of meeting the crucial human resource demands. This is confirmed by Ms Al Kuttub's commitment to the development of her country's "most vital resource" — human capital. "I believe that mentorship and coaching, as well as providing the opportunities for contribution, will help pave the way for our nationals, enabling them to make their own contribution to our country's development."

"Each particular nuclear power programme developed in different countries requires a unique approach and should be tailored to the specifics of this country: the legal framework, the existing industrial and R&D infrastructure, as well as the technical and managerial culture", believes Ms Trojanowska. "The implementation of such a project from scratch requires the proper preparation to build long term competencies and relationships with nuclear technology providers, which will lead us to satisfactory results. In other words, skilful and effective navigation is required to cover that distance in the shortest time possible, while allowing no shortcuts."

In January 2009, Poland decided to restart the nuclear power programme that was abandoned in 1990. State-owned Polska Grupa Energetyczna SA (PGE), Poland's largest power group by generating capacity, announced in January 2009 plans to build two nuclear power plants, each with a capacity of 3,000 MW(e), the first by 2020.

In April 2008, the UAE published a comprehensive policy on nuclear energy. It is planned that by 2020 four 1400 MW(e) nuclear plants will be in operation and produce electricity, covering an estimated 25% of Abu Dhabi emirate electricity capacity / needs.

The role of women

Questioned on the role of women and the influence they can have in filling this gap of competencies, both Ms Al Kuttab and Ms Trojanowska highlight the strong stereotypes still existing in the nuclear industry.

"I believe that in general, the sciences have always been thought of as being dominated by males whereas literature and the arts have been areas occupied by females. This stereotype probably scares away high potential female contributors to the nuclear sector", explains Ms Al Kuttab. "I would like to break that barrier by raising awareness at an early age as to what one would be able to contribute and achieve through following a career in the nuclear sector". She does not deny the specific challenges women may face. "I also believe that females usually have an extra load of responsibility having to juggle family and work, so offering competitive benefits such as on site-day child care, scholarships, internships, mentoring programmes, maternity leave, telecommuting or flex-time options are all opportunities to attract greater female participation in the industry. Luckily, in the UAE, we find most of these benefits guaranteed to us through our country's labour laws."

It is Ms Trojanowska's belief that the future nuclear industry should take advantage of the valuable contributions that female science professionals can make to the nuclear sector. "The presence of women will be significant", she comments.

In light of the heritage of the Polish famous scientist, two-time Nobel Prize winner Maria Sklodowska-Curie, Ms Trojanowska highlights that "we are obliged to promote the involvement of women in science".

For her part, Ms Al Kuttab is driven by the vision of the late President of the UAE, Sheikh Zayed bin Sultan Al Nahyan who once stated that "nothing could delight me more than to see the woman taking up her distinctive position in society... nothing should hinder her progress. Like men, women deserve the right to occupy high positions according to their capabilities and qualifications". These words have been her personal mantra since the early stages of her career path.

Women in nuclear power programmes

These two examples show how women could be a driving force for new nuclear power programmes. This should be seen by both embarking countries and countries with developed nuclear power as an opportunity to reduce the gap of human resources that is at the top of strategic agendas of national governments and international organisations such as the IAEA.

Half of the world's population are women, and their education and involvement in the nuclear sector could be an important key point for the development of nuclear power.

*By Brenda Pagannone, Nuclear Power Engineering Section,
IAEA Department of Nuclear Energy,
email: B.Pagannone@iaea.org
in collaboration with Albane Godard, France*