

# SDG Perspective

## SDG4 Quality education, SDG5 Gender equality & SDG10 Reduced inequalities

### Introduction

Over the past five decades according to data published by the IAEA, the production of greenhouse gas emissions has grown exponentially due to electricity generation. Representing a significant share of energy related emissions, fossil fuels are still the primary source of electricity globally. Today, we know that nuclear energy produces the same amount of carbon emissions as wind, proving to be an essential option for combating climate change and meeting the 1.5°C pledge in the next few decades.

Many climate scientists conclude that nuclear energy is indispensable for effectively achieving the goals of decarbonisation and, moreover, separating overall global development from unsustainable human pressure on our environment. Increasing electrification in developing regions and the projected need for a variety of decarbonised energy services, including hydrogen production, will demand nuclear energy as a reliable, safe and affordable energy source for all.

Providing sustainable, reliable energy for all is a necessary step toward a more equitable society as many basic human needs require affordable energy input. The high-tech job training and high industry-wide salaries that nuclear energy sustains can improve the overall quality of education (SDG 4) in countries using nuclear energy, while the mere fact of having access to affordable, sustainable and dispatchable continuous energy allows for broad societal and economic development for all (SDG 5), enabling a just transition towards a more equitable society (SDG 10).



### SDG4 Quality Education

The United Nations Sustainable Development Goal #4 details several targets for education. These include:

- ☒ Equal access for all women and men to affordable and quality technical, vocational, and higher education;
- ☒ Relevant skills for employment and decent jobs; and
- ☒ Eliminating gender disparities in education and ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, and indigenous peoples.

Nuclear science and technology can play an important role in achieving these goals through various fields including energy, medicine, and agriculture. The need for skilled technicians, engineers, physicists, radiation experts and nuclear medicine specialists creates many opportunities for national and international education and training efforts.

Nuclear medicine has advanced to detect and cure illness, like cancer and cardiovascular disease, but access to this medicine can be limited in developing countries. The need to increase capacity in such regions requires trained and skilled people within these communities, performing well-paid and sustainable work.

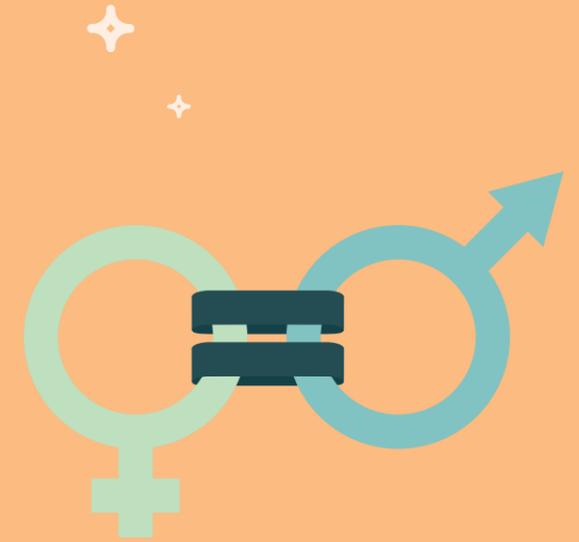
Nuclear energy can play a huge role in bringing quality employment to regions of the world where previously there may have been little prospect of good education and employment. Small modular reactors are being sited in locations that would not previously have had such technology. These complex facilities require a well-trained and professional workforce, supported by a community with a modern system of education for all ages, from early childhood development, through primary and secondary education, and on to higher education.

### SDG5 Gender equality

The nuclear energy industry is traditionally seen as a male-dominated engineering field, where men currently outnumber women. However, the nuclear community is actively and publicly addressing the gender balance by committing to attracting and retaining qualified women to the nuclear science and technology sector.

According to the IAEA, men making up more than a three-quarters of the workforce in the nuclear sector worldwide. This hurts the overall industry diversity as well as competitiveness. Providing women with equal opportunities in all levels of the field, not only mid-level management positions will help achieve a more gender-balanced nuclear workforce.

Therefore, attracting and retaining more women into careers in science, technology, engineering, and math (STEM) is an important goal that many countries are pursuing. The nuclear energy community recognizes the valuable role that women play in STEM fields and encourages organizations and businesses to adopt strategies and practices that promote gender inclusivity within this field. To make the nuclear sector more attractive, meaningful change must be achieved by collaborating collectively to remove gender bias, increase the number of women in STEM, and in leadership and mentorship positions.



### SDG10 Reduced inequalities

Energy poverty, or lack of access to reliable electricity, poses a barrier to economic mobility and vitality in developing nations. Universal access to low-cost, clean electricity can help to reduce socio-economic inequalities as well as curb reliance on sources of electricity that contribute to global climate change and air pollution.

Non-emitting electricity sources such as nuclear energy provide firm, reliable power that enables a higher standard of living and empowers greater social equality. In developing countries, for example, many gendered household tasks requiring significant time and manual labor could be made easier with the addition of reliable electricity. This, in turn, would allow men and women more equal time to pursue education or earn wages outside of the home.

Additionally, nuclear energy is a compliance-driven industry that places emphasis on accountability, safety, and strong workplace culture. These facilities can help play a role in government-led or social initiatives for the enforcement of anti-discrimination policies within the workplace. As major employers in the areas where they operate, nuclear energy utilities and reactor developers would also have relationships with the universities, technical schools, and other organizations from which they recruit new talent, and can also influence societal norms if anti-discrimination policies and best practices are emphasised in these learning institutions.

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