



YES TO NUCLEAR

Sustainable Development Perspective

The role of nuclear energy in achieving 17 Sustainable Development Goals (SDGs) cannot be overstated. The deployment of peaceful nuclear science and technology can help solve some of the world's most complex challenges. In this document, we briefly explore the role of nuclear power in each of the 17 SDGs.

Direct Impact



Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all

All of the criteria are met by nuclear energy in various ways. With low operational costs and stable cost predictability, nuclear proves to be a low-cost, realistic option for energy supply. This affordable energy can be supplied reliably, as nuclear does not rely on intermittent energy sources and can provide a secure energy supply 24/7 for its 60-year lifespan. Further, nuclear energy is one of the lowest emitters of carbon dioxide among energy alternatives, crucial in the decarbonization of the energy sector.



Decent Work and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Nuclear energy is key in providing the adequate energy supply needed for sustainable economic and industrial growth in communities around the world. In addition, countries involved with nuclear power reap the benefit of a supply chain industry and considerable export potential. On the sub-national level, the nuclear industry can provide well-paying, quality opportunities for employment both in construction and operation of plants.



Industry, Innovation, and Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

Every country has the right to design their energy infrastructure, choose their energy mix, and manage their energy grid as they see fit. Nuclear, however, can highly benefit infrastructure development by contributing resiliency, security, sustainability, and affordability that other energy alternatives simply cannot. Nuclear power plants can sustainably promote industrialization by providing power to key and emerging industries.



Climate Action

Take urgent action to combat climate change and its impacts

As it stands, the energy sector is one of the highest emitters of carbon dioxide and greenhouse gas emissions. Nuclear power, as one of the most low-carbon energy alternatives, is instrumental to regulating emissions and promoting decarbonisation in the critical upcoming years. Recognizing the urgency of climate action, nuclear represents a large scale, low cost and long-term electricity alternative to fossil fuels.



Partnerships for the Goals

Strengthen the means of implementation and revitalize the global partnership for sustainable development

Partnerships are a practical necessity for maximizing synergies and revitalizing global efforts to effectively address global development challenges. Organizations such as the IAEA encourage close collaboration for the realization of sustainable development goals. From smaller, regional projects to large-forum international cooperation on nuclear energy, organizations can encourage information sharing and technical cooperation to collectively shift towards a more sustainable world.

Additional Direct Impact



Zero Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

In addition to the second-hand benefits nuclear energy can bring to economic development and thus food security, emerging nuclear science and technology have played a key role in overcoming agricultural challenges that contribute to poverty and hunger. Nuclear technology can be used to increase the yield of crops to reduce global hunger.



Good Health and Wellbeing

Ensure healthy lives and promote well-being for all at all ages

Thanks to the low carbon footprint of nuclear power, pollution from emissions can be drastically reduced where nuclear energy is used in a country's energy mix, mitigating the adverse effects of pollution on human health. Further, nuclear power can generate a secure and reliable electricity supply for hospitals and medical services, ensuring patients receive proper care.



Clean Water and Sanitation

Ensure availability and sustainable management of water and sanitation for all

Nuclear power plants have high standards for purification and water treatment for the water they use as part of their plant operation. In addition, the use of nuclear energy as a low-carbon energy source reduces pollution as a whole, mitigating the effects of ocean degradation and water pollution.



Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Environmental impact is always closely assessed when introducing nuclear power plant projects, prioritizing the protection of ecosystems both on land and in water. Decarbonization and decreasing pollution can ensure that vulnerable ecosystems are protected from ocean acidification and rising sea levels. Further, new hybrid systems with cooling towers can also reduce the amount of water needed for cooling nuclear power plants, bringing down a plant's water needs as compared to other renewable energy sources.



Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Compared to other energy systems, nuclear-generated electricity requires the least amount of land compared to the amount of power it produces (one megawatt of electricity requires just 2.5 square feet per year). This protects against the environmental degradation that often comes with energy production. Further, because uranium produces a high amount of energy and low volumes of waste, environmental protection remains high.

Additional Indirect Impact



No Poverty

End poverty in all its forms everywhere

Unstable, unreliable, and restricted access to power can severely hamper economic and infrastructural development which are key to ending poverty. Nuclear power, as one of the most affordable sources of energy, can bring energy to impoverished communities. In addition, nuclear energy can generate jobs and skilled labour to pull people out of poverty and into the workforce.



Quality education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Because nuclear power plants and the nuclear industry as a whole require skilled labour, the presence of nuclear power in a country encourages the pursuit of higher education and the development of academic institutions. Further, the research and development involved with the nuclear industry also allow scientific research and innovation to flourish, promoting lifelong learning opportunities.



Gender Equality

Achieve gender equality and empower all women and girls

At the present moment, there are a number of initiatives in the nuclear sector focused on gender and women's empowerment as the industry matures. While there is still significant progress to be made, work is being done to attract women to scientific careers and encourage mentoring and networking of women within the industry.



Reduced Inequalities

Reduce income inequality within and among countries

One of the key benefits of nuclear energy is its ability to bring economic growth and reliable energy to developing countries. Helping countries to shift away from overreliance on energy sources which can be highly vulnerable to corruption and geopolitical conflict, nuclear can take part in the diversification of a country's energy sources. This can have the second-hand effects of reducing corruption and distributing concentrated wealth away from the oil and gas industry to the rest of society.



Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient, and sustainable

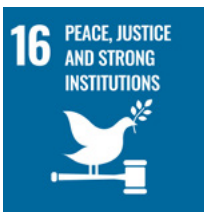
Nuclear energy systems can significantly improve air quality and dramatically reduce pollution where implemented, a much-needed benefit for major cities. Introducing nuclear energy can also contribute to job growth, urban infrastructure, and reliable energy production. Nuclear energy ensures that cities and communities run smoothly and safely in the present while growing sustainably in the future.



Responsible Consumption and Production

Ensure sustainable consumption and production patterns

Nuclear plants have extremely high levels of safety standards, ensuring the proper regulation is in place for responsible consumption and production. Oversight both within the country and through international organizations ensures that the production of nuclear energy is conducive to environmental protection. Indeed, no other category of waste is stored so safely or recorded as meticulously as radioactive waste.



Peace, Justice, and Strong Institutions

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

The promotion of responsible nuclear energy, monitored by institutions such as the IAEA, can ensure that nuclear energy is contributing to peace and sustainable development rather than nuclear proliferation. In cooperating with multilateral institutions to realize and facilitate the benefits of nuclear energy, states can strive for peaceful institutional cooperation for mutual goals.