

International Ministerial Conference
“Nuclear Power in the 21st Century”
Abu Dhabi, October 30 to November 1, 2017
Concluding Statement by the President of the Conference

1. The International Ministerial Conference on Nuclear Power in the 21st Century was held in Abu Dhabi, United Arab Emirates, from 30 October to 1 November 2017, attended by ministers, high-ranking officials and experts from 68 States and 6 international organizations, with nearly 700 participants. This conference was organized by the International Atomic Energy Agency (IAEA) in cooperation with the Nuclear Energy Agency (NEA), and hosted by the Government of the United Arab Emirates.
2. The Conference provided an opportunity for the participants to engage in high-level dialogue on the role of nuclear power in meeting future energy demand, contributing to sustainable development and mitigating climate change, as well as to discuss and exchange views on the key issues related to the development and deployment of nuclear power.
3. His Excellency Suhail Al Mazrouei, Minister of Energy and Industry, welcomed the conference participants to Abu Dhabi. The venue was significant because the United Arab Emirates is in the process of commissioning its first nuclear power plant.
4. The Conference addressed a range of topics, including nuclear power as a key to solving the energy-economy-environment (3E) trilemma, challenges in developing nuclear power infrastructure, safety and reliability aspects of nuclear energy, and innovations and advances in nuclear technologies. There was a convergence of views among many participants on a broad range of issues.

Insufficient Investments in Nuclear Power a Constraint to Achieving Development and Climate Goals

5. Significant developments since the previous Conference in 2013 in St. Petersburg include the adoption of the Sustainable Development Goals, the entry into force of the Paris Agreement and new historical highs in net installed nuclear power capacity in 2014, 2015 and 2016.
6. The Conference reiterated the goal of ensuring access to affordable, reliable, sustainable and modern forms of energy for all.
7. While respecting the right of each State to define its national energy policy, the Conference recognized that nuclear power remains an important option for many countries to improve energy security, reduce the impact of volatile fossil fuel prices and mitigate the effects of climate change and air pollution, including by backing up intermittent energy sources.
8. It was noted that according to the International Energy Agency, substantial growth in nuclear electricity generation by 2050 will be required to limit the average global temperature increase to 2°C, but that nuclear power is not currently attracting the necessary global investment. In addition, a number of plants are being shut down in some countries before the end of their safe operational lifetimes for both political and economic reasons.

9. It was noted that investors need clarity and certainty from policy makers and that governments can provide clear and consistent policy support for existing and new nuclear power capacity, including, for example, by incorporating nuclear power into clean energy incentive schemes and encouraging its development in addition to other clean forms of energy. Open and transparent decision making involving all stakeholders can improve the public perception of nuclear power and lead to broader public acceptance. The importance of building public confidence in nuclear power for its sustainability was emphasized.
10. It was noted that innovations in technology design—including reactor size—as well as in investment and ownership models could facilitate the introduction of nuclear power in more countries. It was further noted that identifying ways to reduce construction times could improve prospects for financing new nuclear power plants. This could include sharing information and using experience gained through licensing of first-of-a-kind evolutionary and innovative designs to streamline the regulatory process for further deployments.
11. The Conference emphasized the importance of development assistance for nuclear power projects as well as affordable financing, consistent with international guidelines, including low-cost, long repayment debt financing to ensure project viability.

Creating an Enabling Environment to Facilitate the Introduction of Nuclear Power and Ensure its Safety and Sustainability

12. Many countries participating in the Conference—mostly in the developing world—expressed interest in introducing nuclear power, and several countries intend to expand their use of nuclear power. Two countries plan to commission their first nuclear power plant in the 2018–2019 timeframe.
13. The Conference emphasized that the establishment of an appropriate national infrastructure for nuclear power, consistent with IAEA safety standards and relevant guidance, is essential for countries developing nuclear power programmes. It was noted that government commitment to the development and maintenance of such infrastructure sends an important signal to stakeholders and potential project investors and reduces construction and operational risk.
14. The Conference stressed that the use of nuclear power must be accompanied at all stages by commitments to and ongoing implementation of the highest levels of safety and security, consistent with IAEA safety standards and security guidelines, throughout the life of the power plants, and effective safeguards, consistent with national legislation and respective international obligations.
15. The Conference recognized the importance of defining a waste management policy from the very beginning of a nuclear power programme, in line with the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.
16. The Conference encouraged governments to consider means to enhance the safety of nuclear power programmes by establishing and maintaining institutional strength in depth—a strong nuclear industry, a strong nuclear regulator and a strong set of stakeholders who ensure a capable institutional framework—and for regulatory bodies and operators to welcome engagement with various stakeholders.

17. International cooperation—including the identification and sharing of best practices—among countries experienced in nuclear power and those developing nuclear power programmes is important and should be encouraged.
18. Human resource development and management in the nuclear power sector needs to be of a high standard in terms of both competence and performance. As the current nuclear work force ages, the next generation must be rigorously recruited and trained so that tacit nuclear knowledge is retained and transmitted.
19. Concerted efforts should be made to increase the participation of women and youth in the nuclear workforce. Emphasizing nuclear energy's role in addressing the major global challenges of the 21st century could be an appealing message to attract the best and brightest professionals.

Nuclear Power as a Safe, Reliable and Clean Energy Option

20. The Conference noted that each year an estimated 6.5 million deaths are linked to air pollution with the number set to increase significantly in the coming decades unless the energy sector takes greater action to curb emissions and governments expand access to modern forms of energy.
21. The Conference noted that nuclear power currently generates approximately one-third of the world's low-carbon electricity, avoiding the release of nearly 2 gigatons of carbon dioxide per year—the equivalent of taking 400 million cars off the road every year.
22. Through continuous improvements and innovations in technology and management, nuclear power has become safer, more secure and more reliable. These measures implemented at nuclear power plants have resulted in enhanced safety and performance. Following this approach, many nuclear power plant operators have pursued life extensions through acceptance of a safety assessment by the regulatory body.
23. The Conference noted that an overwhelming majority of operating nuclear power plants have undergone comprehensive safety reassessments with the aim of protecting against and mitigating the effects of severe natural events. They have introduced additional measures to strengthen plant safety, improve regulatory oversight and enhance emergency preparedness and international collaboration.
24. It was fully recognized that a nuclear accident anywhere has impact everywhere and that nuclear safety must be strong, effective and transparent. It was noted that all countries have a common interest in continuously improving and strengthening nuclear safety, security, emergency preparedness and radiation protection of people and the environment worldwide, taking into account all the lessons learned from the Fukushima Daiichi accident.
25. Many participants noted the importance of Contracting Parties fulfilling the obligations of the Convention on Nuclear Safety, reaffirmed their commitment to the implementation of the principles of the Vienna Declaration on Nuclear Safety and are working to ensure measures to improve nuclear safety are being implemented.

26. The Conference noted the value of conducting regular self-assessments of all aspects of nuclear power programmes, inviting international peer review and advisory services, implementing recommended actions and making publicly available the results of such assessments and services. This facilitates public acceptance, which is vital to the sustainability of nuclear power programmes.
27. The Conference recognized the need to continue working for the establishment of a global nuclear liability regime by encouraging countries to join international nuclear liability instruments and noted the entry into force of the Convention on Supplementary Compensation for Nuclear Damage since the previous International Ministerial Conference.
28. The Conference affirmed that it is the responsibility of each State to establish the appropriate and adequate legal and regulatory framework and implement specific measures to fulfil the obligations pertaining to nuclear safety, nuclear security and safeguards.
29. The Conference underscored that to foster informed understanding and public acceptance of nuclear power, communication should be timely, clear, transparent, objective, easily understandable and based on scientific knowledge.

Innovation for Lowering Barriers to the Wider Use of Nuclear Power

30. The Conference reiterated that the safe and secure management of spent fuel and disposal of radioactive waste are of great importance for the sustainable development of nuclear power. Participants welcomed notable progress made in several countries towards the practical implementation of final disposal of spent fuel and high level radioactive waste and looked forward to the timely commissioning of deep geological disposal facilities.
31. The Conference recognized continuous improvements in reactor designs over the years and noted that reactors with new evolutionary designs and additional safety features from several technology providers have been commissioned or have reached advanced stages of construction since the previous Ministerial Conference. Building on this experience, the participants affirmed that the new generation of reactors can play a key role in the accelerated replacement and expansion of the global nuclear fleet.
32. Many participants recognized that experience with fast reactors and closed fuel cycles demonstrate these as an important option in enhancing the sustainability of nuclear power. Designs of future reactors under development also include advanced safety features.
33. Technology development is evolving to meet a wide range of conditions for deployment of new reactor designs, including small modular reactors. These reactors may allow for expanded use of nuclear power—including on smaller grids and in remote settings, as well as for non-electrical applications—and improve access to nuclear energy. The Conference noted that three types of small modular reactors are under construction and that all are expected to be commissioned in the near future.
34. The Conference highlighted the role of governments in fostering nuclear energy innovation through research and development and in adapting licensing and regulatory approaches for new deployments.

Conclusion

35. The Conference concluded that for many countries, nuclear power is a proven, clean, safe and economical technology that will play an increasingly important role in achieving energy security, reducing the impact of volatile fossil fuel prices and mitigating the effects of climate change and air pollution. For many countries, nuclear power will have an important role to play in achieving the Sustainable Development Goals and meeting the targets in the Paris Agreement. Governments should ensure that their national energy policies support their development and climate goals.
36. The Conference recognized the central role of the IAEA in promoting peaceful uses of nuclear energy including nuclear power, establishing safety standards and security guidance, fostering international cooperation for development of nuclear power and supporting efforts to strengthen nuclear safety, security and safeguards, globally. The Conference further recognized the important roles of both the IAEA and the NEA in encouraging, promoting, facilitating and coordinating international cooperation among their Member States in strengthening nuclear safety and supporting the development and use of nuclear power.
37. Participants looked forward to the next International Ministerial Conference on Nuclear Power in the 21st Century in four years' time.