

NUCLEAR POWER TODAY AND TOMORROW

Worldwide, with 437 nuclear power reactors in operation and 68 new reactors under construction, nuclear power's global generating capacity reached 372.5 GW(e) at the end of 2012. Despite public scepticism, and in some cases fear, which arose following the March 2011 Fukushima Daiichi nuclear accident, two years later the demand for nuclear power continues to grow steadily, albeit at a slower pace.

A significant number of countries are pressing ahead with plans to implement or expand their nuclear power programmes because the drivers toward nuclear power that were present before Fukushima have not changed. These drivers include climate change, limited fossil fuel supply, and concerns about energy security.

Globally, nuclear power looks set to continue to grow steadily, although more slowly than was expected before the Fukushima Daiichi nuclear accident. The IAEA's latest projections show a steady rise in the number of nuclear power plants in the world in the next 20 years. They project a growth in nuclear power capacity by 23% by 2030 in the low projection and by 100% in the high projection. Most new nuclear power reactors planned or under construction are in Asia.

In 2012 construction began on seven nuclear power plants: Fuqing 4, Shidaowan 1, Tianwan 3 and Yangjiang 4 in China; Shin Ulchin 1 in Korea; Baltiisk 1 in Russia; and Barakah 1 in the United Arab Emirates. This increase from the previous year's figures indicates an on-going interest and commitment to nuclear power and demonstrates that nuclear power is resilient.

Countries are demanding new, innovative reactor designs from vendors to meet strict requirements for safety, national grid capacity, size and construction time, which is a sign that nuclear power is set to keep growing over the next few decades.

Safety

Such growth in the sector must of course be accompanied by increased safety. The Fukushima Daiichi nuclear accident has been described as a wake-up call for everyone involved in nuclear power. According to IAEA Director General Yukiya Amano, the accident

reminded us that safety can never be taken for granted, even in advanced industrial countries with considerable experience of using nuclear energy.

Important lessons have been learned, although further lessons may yet be learned. We have quickly been able to absorb the safety lessons from the accident and help Member States apply them in operating reactors around the world. Nuclear reactors have become safer than they were before the accident, like in many other industries. In fact, since the Chernobyl accident in 1986, the international regime for nuclear safety has grown significantly stronger. Today, many internationally binding legal mechanisms have been brought into force, such as the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, which help form a web of support around the IAEA Member States and pushes the global nuclear industry towards continuous improvement of nuclear safety.

Planning for Nuclear Power

As many countries, the so-called 'newcomers', continue to consider introducing nuclear power into their energy mix, the IAEA offers a number of services to help them evaluate their readiness and make informed decisions. These services range from assisting Member States in building their energy planning capabilities, independent of any interest in nuclear power, to supporting long range strategic nuclear energy planning and aiding national infrastructure development, including for radioactive waste management and decommissioning.

Throughout the different stages of development of Member States' nuclear power programmes, we provide integrated services to help Member States ensure the safe, secure, responsible and reliable use of nuclear energy.



Alexander Bychkov, IAEA Deputy Director General and Head of the Department of Nuclear Energy.