AKKUYU NUCLEAR

ROSATOM

Akkuyu NPP Contribution to Sustainable Development


1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

About Us

The Akkuyu Nuclear Power Plant construction project is implemented by Rosatom State Atomic Energy Corporation and its subsidiaries – AKKUYU NUCLEAR JSC, the majority shareholder of which is Rusatom Energy International, Joint-Stock Company (REIN JSC).

Akkuyu NPP is the first nuclear power plant in Türkiye. Akkuyu NPP is being built on the southern coast of the country in the province of Mersin. The Akkuyu NPP project envisages the construction of four Generation III+ VVER-1200 power units with enhanced safety systems and a total capacity of 4800 MW. The estimated service life of Akkuyu NPP is 60 years with the possibility of extension.

The Akkuyu NPP construction project is the world's first NPP project implemented according to the BOO model (Build - Own - Operate). Among other, this means that AKKUYU NUCLEAR JSC is responsible for the design, construction, maintenance, operation and decommissioning of the plant.

Akkuyu NPP is able to withstand:

- an external explosion of 30 kPa pressure,
- a 9.0 magnitude earthquake,
- flooding and tsunami.

Safety is a Key Priority of Akkuyu NPP Project

Safety has key significance for all involved parties at every implementation stage of the Akkuyu NPP project. The project's safety is provided through integrated regulation of activities in the field of nuclear energy, including such aspects as nuclear and radiation safety, national emergency readiness and response, physical safety of the NPP in accordance with IAEA safety standards. Safety systems comprise about 40% of the NPP construction cost.

The effectiveness of the design solutions behind the protection systems of modern Russian-design VVER-1200 reactors has been presented in the Stress Tests National Report prepared with the assistance of AKKUYU NUCLEAR JSC and submitted by Türkiye in December 2018 to the European Nuclear Safety Regulators Group (ENSREG) for expert evaluation of Akkuyu NPP safety.

7 AFFORDABLE AND CLEAN ENERGY

Nuclear Energy as an Integral Part of Effective Energy Mix of Türkiye

4	1200 MW	4800 MW	35 bln kWh
units	unit capacity	total capacity	annual generation

Nuclear power is one of the cleanest sources of energy on the planet. Nuclear power plants produce virtually no greenhouse gas emissions in the process of electricity generation.

Akkuyu NPP will contribute to the development of low-carbon electricity generation in Türkiye:

- annual target output of Akkuyu NPP will average 35 billion kWh, covering up to 10% of the electricity demand of Türkiye;
- this amount is sufficient to provide approx. 90% of required electricity to a large 15-million city like Istanbul;
- the NPP is able to continuously generate electricity 24/7 over a period of 60 years;
- NPP operation does not depend on weather conditions.

8 DECENT WORK AND ECONOMIC GROWTH

Low-Carbon Energy for Reliable Growth

AKKUYU NUCLEAR JSC provides equal opportunities for employment and career growth to all employees by adhering to the non-discrimination principle. At peak construction, the project provides for the employment of more than 25,000 people (80% of them being citizens of Türkiye), and approx. 4,000 jobs at the operation stage.

During the construction of Akkuyu NPP, Russia's leading technical universities NRNU MEPhI and St. Petersburg Polytechnic University annually admit 25 Turkish students each as part of a targeted program. In total, no less than 600 Turkish young professionals with higher education diplomas in nuclear engineering received in Russia will become part of the operational staff of Akkuyu NPP.

Nuclear reactors will provide an alternative to fossil fuel thus reducing dependence on imported fuels.

As of end-2021, more than 400 Turkish companies comprised the list of project suppliers as part of localization, which means goods and services local producers' engagement with the project. Turkish companies provide 40% of the construction and installation works and deliveries for the project's needs.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Contribution to Social and Economic Well-being of the Region

The Akkuyu NPP project creates conditions for integrated development of the NPP construction region, including improved well-being of the local population, development of small and medium entrepreneurship, household and maintenance services market. Road and port infrastructure is being developed in the Silifke and Gülnar municipalities of Mersin province.

The growing commercial activity and purchasing power of the local population resulting from the construction and subsequent operation of a modern nuclear power plant create prerequisites for the development of the residential real estate market and hotel business in the region – thus fostering the development of the construction industry, production of building materials and equipment, related works, services and infrastructure. Qualified jobs in the region increase the prestige of higher technical education and stimulate the development of the personnel training system.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Rational Consumption of Resources

The wastes generated at the construction stage are collected and stored separately depending on their type, class and other characteristics. Specialized contractor enterprises such as TSM Enerji İnşaat Sanayi JSC, Cengiz İnşaat JSC and NEPT JSC remove the wastes from the construction site on a daily basis for sorting and processing.

The Akkuyu NPP design provides for a closed cycle of water circulation that rules out any negative impact of sewage water on the environment including the water bodies. The use of demineralized and desalinated sea water for technological and auxiliary needs at Akkuyu NPP is in conformity with rational development and efficient use of water resources in the region, where frugal water consumption is a matter of utter necessity due to the region's location.

13 CLIMATE ACTION

Reduction of Carbon Footprint

With all four units in operation, Akkuyu NPP will prevent the emission of around **18 million tons of CO2-equivalent** annually as a result of substituting generation from hydrocarbon sources. This figure constitutes approx. 3.5% of the country's total greenhouse emissions per year.

Nuclear Energy for All

The construction of Akkuyu NPP is the largest joint project of Russia and Türkiye. The Project is being implemented in open dialogue with national and international organizations.

All activities related to the Akkuyu NPP construction and steps aimed at nuclear infrastructure development in Türkiye are carried out in accordance with the IAEA guidelines, requirements and recommendations, the Intergovernmental Agreement, and national laws of the Republic of Türkiye.

On June 20, 2019, AKKUYU NUCLEAR JSC became a member of the World Association of Nuclear Operators (WANO), which unites 128 operating organizations and more than 450 NPP units around the world.

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