



Justin Dargin

Energy expert at the University of Oxford

Inside Africa

Russia has recently signed a nuclear cooperation agreement with the Republic of Congo, but does nuclear energy have real potential in Africa?

Justin Dargin provides a perspective

MOST DEVELOPING NATIONS WOULD BENEFIT from the deployment of nuclear energy; the Republic of Congo would not be an exception. Nuclear energy for African countries will also assist with power allocation issues in the continent. Indeed, many African nations seek to develop nuclear energy for the prestige of belonging to the exclusive “nuclear club,” but also feel that many backward and forward economic linkages would percolate throughout the macroeconomy.

The spillover effect could include technology transfer and enhanced educational opportunities for African scientists and technicians.

Furthermore, there are definite advantages in including nuclear energy in the domestic energy mix.

Less uranium is required to generate the same amount of energy than oil or coal, and using nuclear would substantially reduce the cost of producing power. For example, 25 tonnes of uranium generates the same amount of electricity as 2.7 million tonnes of coal. Uranium is typically less expensive to acquire and transport.

In the increasingly decarbonised world, nuclear energy has no greenhouse gas emissions. And a nuclear power plant has fewer operational interruptions when it is running properly. There are fewer brownouts associated with nuclear power. Lastly, a nuclear plant’s operation does not depend on foreign suppliers (except, potentially those supplying uranium) or wind and sun, which tends to make it more stable.

Nuclear energy is not a recent phenomenon in Africa. Both Egypt and the Democratic Republic of Congo constructed nuclear power plants in 1958. There are currently twelve nuclear research reactors in eight African countries. But only in South Africa is there an active commercial nuclear power plant.

Interest in developing and deploying nuclear energy is spreading across the continent. Ghana, Sudan, Uganda, Algeria, Morocco, Nigeria and Tunisia are interested and an Egyptian programme may be resurrected. But there are concerns about deploying nuclear energy in one of the least stable regions in the world. There are a host of complications that could affect any nuclear power plants in the region, including political instability, war, domestic and transnational terrorism, high capital costs, a shortage of requisite expertise, endemic poverty, waste management and the potential for Fukushima-type events.

The prospects of nuclear energy development with Russian assistance are bright in the Republic of Congo and other African countries. However, the countries must be able to demonstrate that they will have strict security protocols in place to mitigate any threats. Africa has significant deposits of uranium that could fuel its nuclear power plants, and it needs a consistent and reliable power

source. The inability of many African governments to provide electricity is retarding economic growth. It is estimated that 2 to 4 percent of African GDP is lost per year due to lack of reliable energy. Nearly 600 million Africans do not have access to electricity. The issue of energy poverty in Africa is quite dire. Nuclear energy, in the eyes of African policymakers, seems to be a cost-effective and ecologically friendly choice to become a viable part of the continent’s energy mix.

The Republic of Congo, in particular, could benefit in several ways. One is that it would be able to utilise nuclear energy for domestic power consumption while preserving its hydrocarbon endowment for export. Additionally, as its economic prospects are weak due to the sustained decline in hydrocarbon revenue since 2014, local content and procurement orders could stimulate the domestic economy.

Taking South Africa as an example, there is also the prospect of highly skilled jobs being created, in addition to knowledge and technology transfer that would assist in the expansion of the country’s research capacities. There will undoubtedly be a raft of new employment opportunities created due to planned cooperation between Rosatom and the Ministry of Scientific Research and Technical Innovation of the Republic of Congo. Nuclear energy facilities, in general, provide substantial economic benefit during their operational lifecycle. There are typically hundreds of jobs created, as well as primary, secondary and tertiary benefits associated with their operations.

What is more, nuclear facilities boost the creation of several hundred more jobs in the vicinity. That includes those that service the nuclear workers, such as grocery stores or dry cleaners, as well as businesses that sell industrial products and equipment. ■



Russia and Congo signed a MOU on nuclear cooperation in February 2018