Over 600 million people and 10 million small businesses in Africa have no reliable source of electricity and that, increasingly, connection to a national grid is no guarantee of electricity supply.

Power blackouts are becoming more frequent, especially in sub-Saharan Africa. Meanwhile, Africa's energy demand is increasing twice as fast as the global average, largely driven by urban population growth.

Africa is set to be one of the world's nuclear development hotspots in the coming years as the continent looks to build a safe, secure and low-carbon energy system.

Several countries in Africa are therefore exploring the possibility of adding nuclear power to their energy mix. Backed by the IAEA, Africa is set to be one of the world's nuclear development hotspots in the coming years as the continent looks to build a safe, secure and low-carbon energy system.

As Mikhail Chudakov, Deputy Director General and head of the Department of Nuclear Energy at the International Atomic Energy Agency (IAEA), says: "Africa is hungry for energy, and nuclear power could be part of the answer for an increasing number of countries".

As countries in Africa consider or embark on nuclear power, IAEA Director General Rafael Mariano Grossi has stressed they would have the Agency's full support.

"The IAEA will be with you every step of the way," he said.

Several countries in Africa are therefore exploring the possibility of adding nuclear power to their energy mix. Apparently, a third of the almost 30 countries currently considering nuclear power are in Africa. .

Egypt, Ghana, Kenya, Morocco, Niger, Nigeria and Sudan have already engaged with the IAEA to assess their readiness to embark on a nuclear programme. Algeria, Tunisia, Uganda and Zambia are also studying the possibility of nuclear power.

Currently South Africa is the only nuclear operator in Africa with two reactors at its Koeberg NPP totalling almost 2000MWe, but it is considering extending the life of the plants and expanding its nuclear power programme.

Egypt has already embarked on a nuclear programme and is building four 1200MWe reactors at El-Dabaa on the Mediterranean coast.

Other countries who have received support from IAEA to develop a nuclear power programme include Ghana, Uganda, Nigeria, Kenya, and Niger.

As a member state of IAEA since 1960, Ghana is looking to introduce nuclear power to provide the necessary diversity of baseload to ensure energy security for our future demands.

Kwaku Afriyie, Ghana's Minister of Environment, Science, Technology and Innovation said. "Our hydropower potential is almost exhausted, and so our interest in nuclear power is to make sure we have energy for our transition and development."

Ghana's Atomic Energy Commission (GAEC) was set up in 1963 and from 1994 operated a small research reactor supplied by China.

GAEC and the University of Ghana established the School of Nuclear and Allied Sciences (SNAS) in 2006 to train nuclear scientists. The Ghana Nuclear Power Programme Organisation (GNPPO) was established in 2012 and the Ghana Nuclear Regulatory Authority (NRA) in 2015. Ghana in 2013 submitted a letter to IAEA formally declaring its intention to pursue a nuclear power programme.

IAEA notes that Ghana has safely operated a nuclear research facility for 24 years and has significant experience with the non-power application of nuclear technology, including in the medical and industrial fields.

Both Kenya and Nigeria are following the IAEA's Milestones Approach and are working with the IAEA within the framework of Integrated Work Plans (IWPs).

Nigeria, has been an IAEA member since 1964, it has a well- established nuclear infrastructure. The Nigerian Atomic Energy Commission (NEAC), set up in 1976, is responsible for the national Nuclear Energy Programme Implementation Committee (NEPIC).

Nigeria's first research reactor, supplied by China, was commissioned in 2004. NEAC's national nuclear power road map, approved by the government in 2007, was followed in 2009 by a Strategic Plan for implementation of a national nuclear power programme.

Having completed site selection, Nigeria is currently in Phase 2 of the Milestones process. Earlier in 2022, Nigeria with Agency's assistance finalised the draft of its

Atomic Energy Bill to make it more coherent with the country's comprehensive nuclear legislation and with international nuclear law.

As a member started IAEA in 1965, Kenya began considering nuclear power in 2010, and an IAEA INIR mission visited in 2015. The Kenya Nuclear Electricity Board (KNEB) was set up in 2014 and in 2019; KNEB became the Nuclear Power and Energy Agency (NuPEA).

Kenya is also in the second phase of the Milestones Approach and has established its national nuclear regulator; identified preferred and alternate plant sites, and is presently focusing on the development of its nuclear workforce by participating in Nuclear Energy Management Schools and other IAEA- organised training events.

Uganda joined the IAEA in 1967. It began establishing a framework for its nuclear power programme in 2008 when the Atomic Energy Bill came into effect and an agreement was signed with the IAEA.

Uganda's Vision 2040 roadmap envisages significant nuclear capacity as part of the future energy mix. The Uganda Atomic Energy Council under the Ministry of Energy and Mineral Development developed a Nuclear Power Roadmap Development Strategy that was approved by the cabinet in 2015.

Uganda said in 2022 that it had acquired land for the construction of its first NPP and had so far trained 22 nuclear engineers to the master's degree level.