

On course. Feasibility studies for the project have been done and the planned investments will be staggered over eight years

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KAMPALA. Uganda is intensifying up efforts to start generating some 2,000 megawatts of electricity from five nuclear plants it plans to build in five districts scattered in the country's four geographical regions.

Feasibility studies for the project have been done and the planned investments will be staggered over eight years, with initial electricity output from nuclear plant expected in 2026, followed with a boost in 2028, 2031 and full capacity operation by 2034.

At the heart of the current preparations is one Memorandum of Understanding that Kampala has signed with Russia and another pending signature of the Chinese, both crucial documents for Uganda to secure technical expertise and financing to lift the plan off the ground.

Energy ministry officials say they expect to ink a preliminary deal with the Chinese government, Uganda's biggest bilateral donor, as early as end of this month.

According to Ms Sarah Nafuna, the head of Nuclear Energy Unit in the ministry, the MoU with China will detail areas of technical and engineering cooperation, as well as financial support to develop reactors for the nuclear plant.

"This partnership with China in the area of nuclear energy development is for peaceful purposes and all plans have been made in Uganda to have clean and safe nuclear energy generation sources," Ms Nafuna, who is also the national liaison officer with the United Nations nuclear watchdog, the International Atomic Energy Agency (IAEA), said.

The use of nuclear energy is a sensitive matter around the world because enriched uranium can be used for both peaceful purposes and to make nuclear bombs, a sticky issue between Iran and Western powers.

Ms Nafuna told this newspaper that the MoU with China will enable the country develop reactors for the nuclear plant. "This document is already [on] the table and we are in the

Govt to generate 2,000MW from nuclear energy plants

MAP OF UGANDA SHOWING LOCATIONS OF PROPOSED NUCLEAR SITES



GRAPHIC: MIKE LOUBO/YERA MUSAASIZI

2,000mw

Nuclear energy. The gov't plans to generate some 2,000mw of electricity by 2032 from nuclear plants to be constructed in five districts.

BACKGROUND

Inside China deal
In the Nuclear Power Roadmap Development Strategy, nuclear plants with installed capacity of 2,000mw will be commissioned by 2034. The Cabinet adopted the policy on April 22, 2015. The planned MoU with China envisages bilateral cooperation in nuclear infrastructure development, raising public awareness on nuclear technologies and its application, radi isotopes and radiation technologies' application in industrial, medical and agricultural sectors. Other areas include radiological and physical security, fundamental and applied researches, human resource training, and nuclear research centres based on multifunctional research reactors.

final stages," she said.

Uganda on June 19 signed an MoU with Russia for the development of uranium for nuclear power generation. Bureaucrats hope China's involvement will help fast-track the investment and put Uganda on a pedestal to generate 2,000 megawatts electricity over the next 17 years.

The proposed sites for the nuclear infrastructure developments are Buy-

ende District in the east and Nakasonkola District in central Uganda, both near Lake Kyoga, Kiruhura District in the west close to River Katonga, Lamwo District belted by River Aswa in northern Uganda and Mubende District in central Uganda near Lake Wamala.

Explaining their choice of the sites, officials said the water from reliable large sources is required for cooling

the nuclear reactors.

Ms Nafuna declined to disclose the cost of developing the nuclear plants, but a high-level source that asked not to be named because they were not authorised to speak on the matter, estimated the capital and operating costs upward of Shs745 trillion.

This working figure is almost 25 times higher than Uganda's Shs29 trillion annual budget, raising questions about the country's ability to mobilise such resources when it is already saddled with \$10.5b (Shs37 trillion) debt in both disbursed and committed loans.

Uganda last month hosted the 28th technical working group meeting for Africa Regional Cooperative Agreement for Research (AFRA) at Speke Resort Munyonyo and the conference, among other things, explored ways of improving technical cooperation in Africa and increasing efficiency of IAEA's deliverables and effectiveness.

Prime Minister Ruhakana Rugunda told the international delegates at the time that inadequate energy is a bottleneck to Uganda's industrialisation and the achievement of its 2040 vision.

"Increasing the electricity generation capacity to meet the demand is, therefore, a key government policy direction. Uganda [will be] developing 2,000 megawatts nuclear power plants for industrialisation," he said.

Uganda already carried out airborne survey that helped establish the existence of uranium deposits,

but technocrats are yet to quantify it. A presidential ban on exportation of uranium is also still in place.

Energy minister Irene Muloni, in an interview with this newspaper recently, said there are uranium deposits in western, south-central and north-eastern regions, but that sharing the specific locations could prompt "speculators to run there to buy the land from local people and later sell it expensively to the government".

Associated tragedies such as the deadly 2011 Fukushima Daiichi nuclear plant accident in Japan, or the Chernobyl disaster before it, have placed high demands on nuclear energy operational safety and environmental compliance requirements.

Mr Frank Muramuzi, the executive director of National Association of Professional Environmentalists (NAPE), spoke against building of nuclear plants and instead advised the government to harness electricity from other renewable energy sources such as solar.

"Nuclear plants are expensive, have long construction periods of about 10 years and expensive to de-commission the plants at the end of their lifespan, especially disposing of hazardous radioactive waste," he said.

The National Environment Management Authority, a statutory environmental watchdog, however, said there is no cause for alarm and they have worked closely to ensure the investment is safe.

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NUCLEAR ENERGY

A nuclear reactor produces and controls the release of energy from splitting the atoms of uranium.

Uranium-fuelled nuclear power is a clean and efficient way of boiling water to make steam, which drives turbine generators and except for the reactor itself, a nuclear power station works like most coal gas-fired power stations.