Commentary

RUSSIA'S NUCLEAR ENERGY DIPLOMACY IN AFRICA

The strategic withdrawal of the United States from key energy initiatives in Africa, including the winding down of Power Africa and reduced support for Just Energy Transition Partnerships, has created a significant vacuum in the continent's energy diplomacy. This retreat coincides with Africa's acute energy deficit, where over 600 million people lack electricity access, primarily in sub-Saharan Africa. Russia has capitalised on this gap through its state-owned Rosatom corporation, aggressively expanding nuclear energy partnerships across over 20 African countries. Beyond addressing energy shortages, Russia's nuclear diplomacy serves as a geopolitical tool to deepen influence, foster long-term dependencies, and secure strategic alliances. While Russia offers comprehensive nuclear infrastructure solutions backed by flexible financing and political support, challenges remain, including financing constraints, institutional capacity gaps, and safety concerns. Despite symbolic agreements and ambitious projects, the long-term success of Russia's nuclear ambitions in Africa depends on genuine local engagement, transparency, and alignment with the continent's developmental priorities amid growing competition from China and Western actors.

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Background

The deliberate withdrawal of the United States (US) from prominent international energy and development initiatives, notably during the administration of President Donald Trump, has resulted in a substantial void in global energy diplomacy. These shortcomings are particularly pronounced in Africa, the continent most afflicted by energy poverty, home to three-quarters of the world's population lacking electricity access. Achieving Sustainable Development Goal (SDG) 7, which mandates universal access to energy, remains a distant objective for the majority of countries in the region. As of 2022, approximately 600 million individuals on the continent lacked access to electricity, accounting for 80% of the global electricity access gap.[1]

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This US withdrawal from global engagement extends beyond mere reductions in foreign aid and the imposition of trade tariffs. It also encompasses the termination of key initiatives, such as *Power Africa*, a program launched by President Barack Obama in 2013. Over its twelve-year span, *Power Africa* mobilised approximately $1.2 billion in funding from the US government, which, in turn, catalysed nearly $29 billion in private-sector investment.[2] The initiative supported the development of over 150 energy infrastructure projects across 42 African nations, ultimately expanding electricity access to more than 200 million individuals and generating an estimated $26.4 billion in commercial deals involving American firms.[3] Simultaneously, the US decision to withdraw from the Just Energy Transition Partnerships (JETPs) has led to a decline in grant funding and investment commitments, notably affecting countries like South Africa.[4]

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Amid this strategic retrenchment of the US, the Russian Federation has seized the opportunity to expand its presence across Africa, leveraging nuclear energy as a cornerstone of its foreign policy. Although Russia is widely acknowledged as the world's biggest natural gas exporter, the second-largest oil exporter, and the third-largest coal exporter,[5] its prominence and influence in the nuclear energy sector have garnered comparatively less attention. Through its state-owned enterprise Rosatom, Russia maintains an extensive portfolio of international nuclear projects, encompassing engagements in 54 countries and valued at over $139 billion over a decade.[6] These engagements encompass a comprehensive range of services, including the construction of nuclear reactors, the supply of nuclear fuel, lifecycle maintenance, and the provision of advanced nuclear technologies.

In addition to dominating nuclear reactor exports, Russia is leading in the global nuclear fuel cycle, accounting for approximately 40 per cent of global uranium conversion capacity and 46 per cent enrichment capacity as of 2020.[7] Between February 2022 and 2024, despite broad international sanctions following the war in Ukraine, Russia exported over $1 billion in nuclear energy-related products.[8] Notably, nuclear cooperation has thus far remained exempt from the scope of Western sanctions[9], thereby enabling Russia to employ nuclear diplomacy as a strategic instrument of international engagement, particularly in Africa.

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Nuclear power plant development entails long-term commitments spanning several decades, encompassing phases from initial construction to eventual decommissioning. As a result, such partnerships inherently foster enduring dependencies between supplier and recipient states. In this context, Russia increasingly regards nuclear energy not only as a commercial undertaking but also as a strategic instrument for advancing its geopolitical influence. This approach is particularly evident in Africa, where widespread energy deficits and infrastructural

shortcomings present favourable conditions for deepening engagement. With nuclear cooperation agreements signed with at least 20 African countries, Russia has emerged as the leading supplier of nuclear technology to Africa, surpassing other major providers, including the US, China, South Korea, Canada, and France.[10]

The Energy Gap Meets Geopolitical Strategy

Amid escalating geopolitical tensions globally and Moscow's increasing international isolation following its attack on Ukraine, Russia has pivoted toward the Global South as a means to sustain and expand its international influence. Within this strategic realignment, Africa has assumed a particular importance as a focal point for engagement. The continent's acute energy deficit, with over 800 million individuals lacking access to reliable electricity, represents both a formidable development challenge and a strategic opportunity.[11]

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Russia has positioned itself to address this gap by exporting large-scale nuclear infrastructure, presenting it as a catalyst for long-term development and industrialisation. This approach distinguishes Russia from other international actors who have often been reluctant to finance or support nuclear energy initiatives on the continent. Solar and wind energy, although renewable, are inherently unpredictable due to their dependence on variable weather conditions. At the same time, fossil fuels such as coal and natural gas face growing criticism over their environmental impact.

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From that perspective, nuclear power offers a reliable and consistent supply of electricity with minimal greenhouse gas emissions. Russia has framed its nuclear energy offering not merely as a commercial venture, but as a developmental lifeline, an integral component of Africa's modernisation and long-term energy security.

Role of Rosatom State Atomic Energy Corporation

Since the dissolution of the erstwhile Soviet Union, Russia has steadily reconstituted key components of its foreign policy apparatus, with state-backed nuclear energy partnerships emerging as a cornerstone of its international diplomatic strategy. At the forefront of this initiative is the Rosatom State Atomic Energy Corporation, a wholly state-owned enterprise and successor to the Soviet Ministry of Atomic Energy. Officially reorganised as a state corporation in 2007, Rosatom operates under strategic directives issued by the President of the Russian Federation.[12] Over the past two decades, Rosatom has become the face of Russian nuclear diplomacy, having signed cooperation agreements with over 20 African countries.

Rosatom's extensive international portfolio encompasses nuclear reactor construction and the provision of nuclear fuel, technology transfer, personnel training, radioactive waste management, and long-term maintenance agreements. In Africa, its recent initiatives include a nuclear power plant in Burkina Faso, a floating nuclear facility in Guinea, and integrated nuclear and hydroelectric projects in the Republic of Congo. Meanwhile, Niger, an important uranium-producing country, has expressed interest in Russian investment in its nuclear sector, while Namibia has reportedly engaged in preliminary discussions with Rosatom on future cooperation.

As of 2020, Rosatom maintained a 10-year foreign order portfolio valued at approximately $140 billion.[13] This covers the construction of 34 nuclear power units across 11 countries—representing nearly 70% of the global market share in reactor exports.[14] In parallel, Rosatom earned service and fuel supply contracts worth $200.8 billion, providing operational lifecycles to 48 reactors outside Russia.

Competition from China and the West

Nevertheless, Russia's predominance in Africa's nascent nuclear energy landscape faces growing competition. China has emerged as a formidable competitor, intensifying its diplomatic and commercial efforts across the continent. The China National Nuclear Corporation (CNNC) has become increasingly active in the region, seeking to integrate nuclear energy projects within the broader framework of Beijing's Belt and Road Initiative (BRI).[15] China's nuclear diplomacy, underpinned by substantial financial capacity and the absence of international sanctions, has proven particularly appealing to African states seeking both investment and long-term infrastructure partnerships. Notably, China's recent agreement to assist Uganda in constructing its first nuclear power plant illustrates the seriousness of its ambitions in this domain.

While China presents an appealing combination of low-interest loans and integrated infrastructure solutions, its practical experience in international nuclear construction projects remains relatively limited. To date, CNNC has completed only one significant overseas nuclear project, which is located in Pakistan.[16] By contrast, Rosatom possesses a considerably more extensive track record, with a portfolio of completed and operational projects spanning multiple continents. This is further reinforced by the corporation's flexible repayment arrangements and its demonstrated expertise in managing the entire lifecycle of nuclear power facilities.

On the other hand, Western nuclear companies, including France's Électricité de France (EDF) and various American firms, often struggle to compete with state-backed entities like Rosatom and CNNC. Operating primarily under commercial imperatives, these companies are subject to a range of constraints, including regulatory complexity, slower project approval timelines, and higher political and financial risk aversion. Nuclear projects in Western countries have frequently experienced delays and substantial cost overruns. For instance, EDF's Hinkley Point C project in the United Kingdom has seen its projected cost escalate from $24 billion to over $40 billion.[17] Similarly, a major US nuclear project in South Carolina was abandoned in 2017 after consuming $9 billion in sunk costs.[18]

Russia's comparative advantage

Rosatom's distinct competitive advantage lies in its ability to serve as a comprehensive, end-to-end nuclear service provider—effectively operating as a "one-stop shop" for nuclear infrastructure development.[19] Its range of services extends beyond reactor construction to include workforce training, safety and security assistance in accordance with international non-proliferation standards, and provision of concessional financing through Russian state-owned banks and sovereign funds. These low-interest, long-term financing arrangements are frequently embedded within intergovernmental agreements, thereby giving Russia significant influence over the economic and political trajectories of its partner states.

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The diplomatic backing of the Kremlin further bolsters Rosatom's global outreach. President Vladimir Putin has actively promoted nuclear diplomacy as a strategic tool for reestablishing and strengthening alliances, particularly in the Global South. This high-level political endorsement enables Rosatom to function as an extension of Russian foreign policy, frequently operating in close coordination with the Ministry of Foreign Affairs. The synergies between Rosatom's project implementation and the Kremlin's broader geopolitical goals underscore that nuclear cooperation extends well beyond energy. It serves as a vehicle for sustained political engagement, economic interdependence and diplomatic leverage.

Nevertheless, the financial exigencies arising from Russia's protracted war against Ukraine have strained the state's capacity to fund large-scale overseas initiatives. While Rosatom's existing contracts remain secure, its ability to initiate and sustain new billion-dollar projects may be increasingly constrained. Moreover, the reputational risks associated with aligning with a sanctioned and internationally isolated Russia may prompt some African states to hedge their bets or pursue alternative partnerships.

Despite these headwinds, Russia's comparative advantages in the nuclear sector, comprising extensive technical experience, vertical integration, flexible financing, and geopolitical backing, have enabled it to pursue a concerted campaign of nuclear diplomacy. In Africa, this approach transcends the mere provision of electricity; it is fundamentally focused on cultivating enduring bilateral relationships, influencing regional alliances, and embedding Russian influence within the critical infrastructure that will underpin the continent's long-term developmental trajectory.

Summit Diplomacy and Nuclear Signalling

Russia's ongoing conflict in Ukraine has necessitated a strategic recalibration of its nuclear diplomacy. The cancellation of Rosatom's 1,200 MW Hanhikivi nuclear power plant project in Finland shortly after the outbreak of hostilities in Ukraine underscored the profound geopolitical consequences of the war.[20] In response, President Vladimir Putin has sought to

deepen alliances with countries in the Global South, particularly in Africa, which he characterises as vital partners in a multipolar international order. During recent state visits, including to North Korea and Vietnam, President Putin reiterated Russia's commitment to provide African nations with comprehensive "turnkey" nuclear infrastructure, occasionally backed by full financing arrangements.

This diplomatic orientation was prominently exemplified in the Russia–Africa summits held in Sochi (2019) and St. Petersburg (2023), where nuclear cooperation emerged as a focal point of Russia's engagement strategy. At the 2023 summit, President Putin presented nuclear energy as a foundational pillar for Africa's industrialisation and economic self-reliance.[21] The summit culminated in the signing of a series of memoranda of understanding, highlighting Russia's intent to supplant Western influence with long-term technological and strategic partnerships. In Ghana, Russia continues to compete with the United States, China, South Korea, and France to secure Ghana's inaugural nuclear power facility construction contract.[22]

South Africa: An Unrealised Alliance

South Africa has long expressed interest in nuclear energy cooperation with Rosatom. In September 2014, merely six months after Russia's internationally condemned annexation of Crimea, the two nations formalised a nuclear cooperation agreement valued at approximately $76 billion. The arrangement, however, was marred by concerns over transparency and legality, and in 2017, South Africa's High Court declared it unlawful for violating constitutional procurement requirements.[23] This episode exemplifies the complex intersection of domestic governance, international diplomacy, and strategic energy policy.

Although the original initiative failed, Russia's diplomatic overtures have not ceased. Recent developments suggest an improvement and potential renewal of the past stalled discussion. On 17 February, South Africa's Minister of Mineral Resources and Energy, Gwede Mantashe, announced the government's renewed openness to pursuing nuclear collaboration with Russia.[24] This revived interest could place South Africa at odds with Western policy priorities, particularly given the evolving geopolitical stance of the United States under President Donald Trump.

Egypt: The Flagship Project

Russia's most prominent nuclear initiative in Africa is the El Dabaa Nuclear Power Plant. Located in Egypt, this $28.75 billion undertaking is predominantly financed through a $25 billion loan extended by the Russian government, repayable over 35 years.[25] As Rosatom's flagship project on the continent, El Dabaa represents a milestone in both Russia's nuclear diplomacy and Egypt's energy development. It is set to become Africa's second operational nuclear power station, following South Africa's Koeberg plant, which was commissioned nearly four decades ago.

Construction of El Dabaa commenced in 2020, with phased operations expected to begin during the 2030s. The facility will comprise four Generation III+ VVER-1200 light-water

reactors, each capable of producing 1,200 megawatts of electricity[26]. Once operational, the plant is anticipated to significantly diversify and strengthen Egypt's national energy grid.

An integral component of the agreement entails the establishment of an on-site interim storage facility for spent nuclear fuel, which will later be transported to Russia for reprocessing.[27] Rosatom is the only company in the world that provides such services. The company will also oversee the long-term maintenance and servicing of the plant for 60 years, ensuring sustained technical cooperation.

Furthermore, the agreement encompasses the establishment of manufacturing facilities within Egypt to localise the production of nuclear plant components and foster knowledge transfer. Through El Dabaa, Russia is not merely exporting nuclear technology but embedding itself in Egypt's energy infrastructure, workforce development, and strategic planning. The project could work as a prototype for Russia's future engagements across Africa, combining technology, financing, and geopolitical influence in a single package.

Alliance of Sahel States: A Promise for Russian Supremacy

The Alliance of Sahel States (AES), formally established on 16 September 2023, represents a trilateral defence and cooperation pact among Mali, Niger, and Burkina Faso. While primarily conceived as a framework for collective security and political autonomy, the AES also places significant emphasis on sustainable economic development, particularly through strategic energy initiatives.[28] Central to these ambitions is the prioritisation of regional energy projects, including the exploration of civil nuclear power as a long-term solution to chronic electricity deficits.

Niger, the world's fourth-largest producer of uranium and home to Africa's highest-grade uranium ore deposits contributes roughly 5% of global uranium output.[29] As the electricity access rate remains inconsistent, the government is considering nuclear power as a viable solution to stimulate economic growth.

Burkina Faso has already taken a definitive step toward nuclear development, entering into a memorandum of understanding with Russia's Rosatom for the construction of a nuclear power plant, an initiative poised to substantially enhance national energy capacity.[30]

Meanwhile, Mali is advancing its National Nuclear Programme under the supervision of the Malian Radiation Protection Agency (AMARAP). Its atomic energy strategy extends beyond electricity to include applications in medical, mining, industry, agriculture, and scientific research. Furthermore, Mali has also announced intentions to collaborate with Rosatom on multiple nuclear infrastructure projects, positioning the AES as a key theatre for Russia's expanding nuclear diplomacy in Africa.[31]

The Grand Strategy: Influence Over Infrastructure

Russia's deployment of nuclear technology in Africa extends beyond addressing energy deficits; it reasserts Moscow's role as a dependable partner amid increasing Western scepticism. By securing long-term infrastructure agreements, Russia aims to forge enduring

alliances that enhance its diplomatic influence and secure access to critical raw materials. However, this approach faces considerable obstacles. Many agreements remain largely symbolic due to financial limitations, constrained technical capacity, and fragile institutional frameworks. Critics argue that Russia's nuclear diplomacy often functions more as political posturing—exaggerating commitments to advance broader geopolitical aims rather than achieving substantive progress.

While nuclear energy holds considerable promise for Africa's development, it entails significant challenges, including the need for extensive planning, substantial capital investment, robust regulatory oversight, and political stability. Many African states lack the institutional expertise to manage such complex projects, and securing adequate financing remains problematic. Furthermore, concerns over nuclear waste management and plant security persist, underscoring the considerable uncertainties facing Africa's nuclear ambitions.

A Nuclear Future or a Geopolitical Mirage?

Many nuclear agreements signed by African states remain preliminary, representing the initial phase in the complex and protracted process of nuclear project development. Nevertheless, these agreements carry significant symbolic weight for Russia amid its growing geopolitical isolation. For the Kremlin, such agreements transcend commercial interests, functioning as instruments of political influence. By aligning nuclear energy initiatives with diplomatic efforts, Moscow seeks to foster enduring partnerships, enhance its geopolitical stature, and accumulate political capital.

However, the success of this strategy depends on more than diplomatic rhetoric and formal accords. It requires transparency, dependable and sustained financing, authentic local endorsement, and institutional reforms within both African nations and Russia's foreign policy apparatus. The benefits of nuclear energy for Africa will only be realised if these projects genuinely address the continent's developmental priorities rather than primarily serving Russian geopolitical objectives.

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