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Considerations for the More Viable Option in the Deployment of Traditional Nuclear Power Plants (NPPs) and/or Small Modular Reactors (SMRs) for the West African Sub-Region

The need for enhancement of the energy sector in Africa as well as the current global advocacy for carbon-neutral solutions to stem the adverse effects of climate change inspires the consideration of a number of energy-supply alternatives to fossil fuel. Nuclear energy has proven to be one of the most viable alternative energy solutions given its superior energy density and near-zero carbon footprint; moreover, a nuclear-driven energy sector serves as a fecund ground for the much needed technological advancement in the diverse industrial sectors of the West African sub-region. Recent advancement in the nuclear industry has resulted in the development of Small Modular Reactors (SMRs), which aim to deal with concerns about cost/financing, construction time, 3S, political and other factors as encountered with the traditional Nuclear Power Plants (NPPs). A critical analysis of the pros-and-cons for the deployment of SMRs as against NPPs in the sub-region is presented in terms of financing, 3S and prioritize local needs, technical expertise, political considerations amongst others. Though, SMRs remain a promising option that would sooth the current political atmosphere, traditional NPPs are still the more technically viable option for the much needed socio-economic development and affordable energy future of the sub-region.

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