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Implementing Small Modular Reactors

SMRs are seeking to capitalize on the growing demand for low-carbon, affordable, and reliable yet flexible energy supply. They are still in the process of identifying and proving their value proposition in relation to the large scale nuclear power, traditional energy sources, and renewables. In Russia, small scale nuclear power is already helping to decarbonize remote isolated grids and district heating for the benefit of both domestic and industrial users. This valuable practical experience of SMR development and operation is instrumental for facilitation of the future deployments. Other emerging applications of SMRs such as desalination and hard-to-abate industrial processes are also within reach.
At the same time, achieving serial construction is seen as a crucial condition for the success of SMR-based nuclear power plants, while regulatory barriers may impede international deployments. An important modern trend for harmonization and standardization of regulatory and industrial requirements for SMRs is led by the IAEA.
Fully shipyard-built floating nuclear power units, that feature highly standardized designs, have emerged as being particularly promising for achieving sustainable economies of series production. The dual nuclear and maritime international legal framework ought to be strengthened in order to facilitate cross-border deployments.
Learning from the experience of the first modern SMRs while simultaneously improving the regulatory environment is key to implementing SMRs at scale in the future.

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