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From Vision to Reality: Building Capacity and Bridging Gaps in SMR Technology Adoption

This paper explores the transformative journey of Small Modular Reactors (SMRs) from conceptualization to practical implementation. It delves into the various aspects of SMR deployment, emphasizing the critical need for capacity building and collaboration to bridge existing gaps across multiple infrastructure issues specified in the IAEA publication NG-G-3.1 (Rev. 2) Milestones in the Development of a National Infrastructure for Nuclear Power.

In the pursuit of sustainable and scalable nuclear energy solutions, nations are increasingly turning to SMRs. However, this transition involves overcoming several challenges, ranging from regulatory hurdles and technical complexities to developing human resources capable of managing SMR technology. The abstract examines strategies to turn the vision of SMR integration into a tangible reality.

The discussion revolves around the collaborative efforts required for successful SMR deployment, emphasizing the importance of bilateral and multilateral engagements. Regulatory frameworks play a pivotal role, and the abstract explores how nations can cooperate to facilitate SMR reviews and deployment. It also sheds light on the significance of technical cooperation in ensuring the seamless integration of SMRs into diverse national infrastructures.

Human resource development emerges as a key theme, addressing the skills gap and capacity challenges in deploying SMRs in international environments. The abstract outlines initiatives and approaches to enhance expertise and knowledge sharing among nations.

Furthermore, the abstract highlights the crucial role of public engagement and stakeholder engagement in the developmental phase of SMRs. Effective communication and collaboration with diverse stakeholders are essential for building public trust and support, ultimately contributing to the success of SMR projects.

In summary, this article comprehensively explores strategies, collaborations, and initiatives required to build capacity and bridge gaps in the adoption of SMR technology on a global scale.

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