Cooper, M. (2014, September 16). Small modular reactors and the future of nuclear power in the United States. Retrieved April 04, 2021, from https://www.sciencedirect.com/science/article/abs/pii/S2214629614000929

Author Mark Cooper offers this abstract for his academic research paper “ Small modular Reactors and the Future of Nuclear Power in the United States” which describes the future of SMRs: Small modular reactors are the latest “new” technology that nuclear advocates tout as the game changer that will overcome previous economic failures of nuclear power. The debate over SMRs has been particularly intense because of the rapid failure of large “nuclear renaissance” reactors in market economies, the urgent need to address climate change, and the dramatic success of alternative, decentralized resources in lowering costs and increasing deployment. This paper assesses the prospects for SMR technology from three perspectives: the implications of the history of cost escalation in nuclear reactor construction for learning, economies of scale and other process that SMR advocates claim will lower cost; the challenges SMR technology faces in terms of high costs resulting from lost economies of scale, long lead time needed to develop a new design, the size of the task to create assembly lines for modular reactors and intense concern about safety; and the cost and other characteristics – e.g. scalability, speed to market, flexibility, etc. – of available alternatives compared SMR technology. The paper concludes that the decision of the major vendors (Westinghouse and B&W) to dramatically reduce SMR development efforts reflects the severe disadvantages that SMR technology faces in the next several decades. (Author, abstract)

Author, Mark Cooper is a senior research fellow for economic analysis at the Institute for Energy and the Environment at the [Vermont Law School](https://en.wikipedia.org/wiki/Vermont_Law_School), and a frequent [nuclear power](https://en.wikipedia.org/wiki/Nuclear_power) industry commentator. Cooper holds a PhD from [Yale University](https://en.wikipedia.org/wiki/Yale_University) and is a former Yale University and [Fulbright Fellow](https://en.wikipedia.org/wiki/Fulbright_Fellow). He has provided expert testimony in over 250 cases for public interest clients before state and federal agencies, courts, and legislators in many jurisdictions in the U.S. and Canada. Cooper has published many books and articles on energy, telecommunications, and high technology industries. Cooper's 2011 report, *Nuclear Safety and Nuclear Economics,* says that past [nuclear disasters](https://en.wikipedia.org/wiki/Nuclear_disaster), such as the 1979 [Three Mile Island accident](https://en.wikipedia.org/wiki/Three_Mile_Island_accident), have tended to "greatly raise regulatory barriers and have also severely multiplied the cost of reactor construction". After Three Mile Island, the report said, the cost of nuclear power plant construction doubled in most cases and trebled or quadrupled in some rare circumstances. He says that presently we are witnessing not a [nuclear renaissance](https://en.wikipedia.org/wiki/Nuclear_renaissance) but a collapse in expectations for new nuclear reactor construction. (Wikipedia)