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Nuclear business: shifting from supply chain to ecosystem configuration

According to (NEA, 2022) the potential market for small modular reactors (SMR) is 375 GW of installed capacity by 2050. However, the current supply chain configuration, characterized by short-term contracts and limited suppliers, is a major constraint for this vision, since on inside acts as a bottleneck and, on the other side, increases transaction costs for the stakeholders e.g. vendors, suppliers, and utilities. The linear "supply-buy" relations in the nuclear industry do not allow the flexibility and scalability required for the large scale SMR deployment. Achieving such a large-scale deployment requires a shift in the nuclear business from the traditional "supply chain" to a more flexible "ecosystem" mindset and business model. The nuclear sector needs to reach a balance between the nature of the business (e.g. the quality and regulation in components provision) and the openness of ecosystem business model. A key strategy would be to shift the perspective from "one-off projects"procured in a supply chain approach to a "program"(ideally across countries and design) leveraging an ecosystem business model. Establishing this ecosystem, particularly in the value-added segments of the business, has already proved to be successful in other sector, such as the aircraft industry. Therefore, the question is NOT if the nuclear industry should follow a similar path, but HOW can it establish an ecosystem?

NEA (2022), Meeting Climate Change Targets: The Role of Nuclear Energy, OECD Publishing, Paris

Country OR International Organization

Russian Federation

Email address

valeriia.skliarenko@polimi.it

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Author: SKLIARENKO, Valeriia (Politechnico di Milano)

Co-author: Prof. LOCATELLI, Giorgio (Politecnico di Milano)

Presenter: SKLIARENKO, Valeriia (Politechnico di Milano)

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