

Prospects of Nuclear Power in a Sustainable Energy Transition

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The availability of refined and efficient energy resources has played a decisive role in the advancement of societies, especially since the industrial revolution of the eighteenth century. In the twenty-first century, the international energy scenario is experiencing a profound transition in terms of energy resources and their utilisation. The energy transition is in response to the challenges the global energy landscape faces such as rapidly growing demand, depleting fossil fuel reserves, surging energy prices, risks associated with the security of supplies, and above all climate change. Nuclear power is an important form of energy making a significant contribution to the electricity mix around the world, especially in developed countries. One of the major advantages of nuclear power is its minimal greenhouse emissions as compared to fossil fuels. The paper examines the key technological and policy dynamics of the unfolding energy transition. It also explores the prospects of nuclear power in the energy transition taking into account both the trend of phase-out the technology has experienced in some of the developed countries over the last couple of decades as well as the growing interest it has received more recently as a low carbon energy solution towards addressing climate change. It also examines nuclear power concerning the broader opportunities and challenges. The findings of this study are supported by the results of a survey carried out with the energy sector stakeholders from over 40 countries around the world.

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