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- Introduction : In recent years, there has been a notable transition towards diversifying global energy sources, encompassing both fossil fuels and renewable energy, alongside the establishment of large-scale facilities to address the escalating demand for energy. However, this transition is accompanied by significant environmental and social ramifications that may overshadow the intended benefits. The water resources sector is particularly impacted, grappling with challenges such as unsustainable water consumption and contamination of proximate sources, as well as indirect effects on distant water bodies resulting from inadequate management practices and inefficient water utilization in these facilities.
- Objectives: This research paper addresses the environmental dimensions of negative impacts associated with power plants, focusing on historical and contemporary issues linked to them. These issues include both direct and indirect pollution resulting from waste generated by energy production processes. The paper reviews a variety of pollutants, including radioactive contaminants from nuclear power plants and thermal pollutants that affect the environment. Additionally, the paper discusses the effects of energy production on water systems, including changes in water flow velocity and their impact on groundwater. Furthermore, the impact of pollution on marine life is examined, such as the mortality of marine organisms and the biological changes resulting from species migration due to pollution. Finally, the paper highlights the social consequences arising from these issues, such as the migration of populations living near power plants due to the contamination of water sources and other environmental risks.
- Conclusion: Energy production causes significant environmental and social issues for water resources. Understanding these consequences is essential for finding effective solutions. By promoting sustainability and exploring innovative ways to reduce pollutants, we can mitigate negative impacts and ensure the safety of our water resources for future generations.