

Saudi Vision Pathway 2030–2060: Achieving Sustainability through Environmental Transformation

Source(s): Comprehensive Academic Research, Prepared in accordance with MEWA, MIM, and NCEC standards. Hypothesis If Saudi Arabia implements a multi-faceted strategy including renewable energy deployment, CCUS, hydrogen fuel economy, advanced waste management, microplastics removal, and strict MEWA/NCEC policies, then the Kingdom will achieve a 50% reduction in pollution by 2030 and Net-Zero emissions by 2060. Saudi Arabia plans to achieve $\geq 90\%$ removal of microplastics by 2030 using Membrane Bioreactors (MBR), Ultrafiltration (UF), Reverse Osmosis (RO), Dissolved Air Flotation (DAF), and Magnetic nanoparticle separation. This multi-faceted strategy focuses on protecting the Atmosphere, Hydrosphere, and Biosphere through a combination of ambitious national programs, advanced technologies, and a fundamental shift in economic and industrial practices. Carbon Capture, Utilization, and Storage (CCUS & DAC): Saudi Arabia is heavily investing in technologies to physically remove carbon dioxide from industrial sources and the atmosphere. – Monitoring: seismic, drone, andsatellite systems. 2.3.4