

Renewable energy and sustainable development a crucial review

Renewable energy resources will play an important role in the world's future. The energy resources have been split into three categories: fossil fuels, renewable resources and nuclear resources [14]. Renewable energy sources are those resources which can be used to produce energy again and again, e.g. solar energy, wind energy, biomass energy, geothermal ...

The primary objective for deploying renewable energy in India is to advance economic development, improve energy security, improve access to energy, and mitigate climate change. Sustainable development is possible by use of sustainable energy and by ensuring access to affordable, reliable, sustainable, and modern energy for citizens. Strong government ...

According to Jacobson et al. [1], hindering global warming from rising above 1.5 °C will require reaching 80% zero-emissions energy by 2030 and 100% by 2050, and much of this should be achieved through the increased use of renewable energy. This, in turn, inspires a steadily growing literature on a range of questions concerning the geopolitical consequences ...

Renewable energy (RE) can help decouple that correlation, contributing to sustainable development (SD). In addition, RE offers the opportunity to improve access to modern energy services for the poorest members of society, which is crucial for the achievement of any single of the eight Millennium Development Goals.

Sustainable development requires a transition from fossil fuel dependency to cleaner energy sources. This transformation's key component is renewable energy, which promises fewer negative environmental effects (Osman et al. 2022) is crucial to highlight the extent to which the developing world has contributed to the population explosion, which has ...

To promote the sustainable development of RE, some existing studies have explored the influencing factors of RED from different perspectives. For example, Cadoret and Padovano and Zhao et al. both confirmed that the high quality of government regulation and administrative intervention contribute to the deployment of renewable energy; Zhang et al. and ...

The current climate and economic crises call for a swift transition to low-carbon energy systems. According to the Intergovernmental Panel on Climate Change (IPCC) [1], renewable energy must supply 70-85% of the world's electricity in 2050. Annual investments in these energy technologies as well as in energy efficiency must be multiplied by a factor of ...

As the contradiction between human development and environmental maintenance is increasingly prominent, sustainability has become a significantly important goal for future development. The renewable energy plays

an essential role in the achievement of sustainable development, since it is relatively cleaner comparing with fossil fuels.

A five-year review of the Earth Summit was made in 1997 - ... the progress being made toward sustainable development, it is important to look carefully at past efforts in APEC economies for possible lessons to be learned. ... Renewable Energy and Sustainable Development 89 tion. The signatory countries are divided into two groups -

Jaiswal KK, Chowdhury CR, Yadav D, Verma R, Dutta S, Jaiswal KS, Karuppasamy KSK (2022) Renewable and sustainable clean energy development and impact on social, economic, and environmental health. Energy Nexus 7:100118. Article CAS Google Scholar Kandwal A (2023) Scenario of wind energy in India--a review.

The transition to renewable energy represents a profound socio-economic transformation, extending far beyond the scope of an industrial revolution. It fundamentally intersects with quality of life and socio-economic development, as energy access is a crucial determinant in these areas.

Renewable energy transition is the initiative of the global energy sector to move away from fossil fuels (such as natural gas, oil, and coal) towards renewable energy sources (Hassan et al., 2024). The environmental Kuznets curve (EKC) illuminates the intricate association between environmental decline and economic growth (Wang et al., 2024b) and it is considered ...

Energy is required for development, and sustainable energy technologies are required for development to be sustainable. Three key changes that need to be made to achieve sustainable energy development are emissions reduction, substitution of fossil fuel-based power with renewable energy (RE) and energy efficiency (EE) improvement (stergaard et al., 2020).

The mission of Renewable and Sustainable Energy Reviews is to communicate the most interesting and relevant critical thinking in renewable and sustainable energy in order to bring together the research community, the private sector and policy and decision makers. The aim of the journal is to share problems, solutions, novel ideas and technologies to support ...

The role of energy in development is crucial. Energy fuels economic growth and is therefore of paramount concern for all countries. This was one of the main themes at the world summit on sustainable development (WSSD) held in South Africa in 2002. The Johannesburg...

An important reason for the development of RE is the desire to produce more energy while protecting the environment. While RE systems are generally less polluting than fossil fuels at their point of use (Liu et al. 2017), their environmental impact can be high at other stages in the life cycle of the system (Quek et al. 2018). There are several animal and plant species ...

It is thus imperative to increase the production of green energy technologies, such as solar, wind, and biomass (Imteyaz and Tahir, 2019, Ou et al., 2018, Perlaviciute and Steg, 2014) sustainable Renewable Energy (RE) comes with several other advantages, such as offering alternatives, thereby diversifying energy resources and helping to achieve energy security.

This study comprehensively reviews the relationship between green finance and sustainable development, specifically focusing on combatting climate change and achieving carbon neutrality. Utilizing a narrative review methodology, the study examines a range of scholarly articles and publications to identify key themes, findings, and future directions in ...

A review on environmental impacts of renewable energy for sustainable development D. Gayen¹ · R. Chatterjee¹ · S. Roy¹ ... sustainable energy development, effective governance, and international collaboration. Moreover, it ... Choosing environmentally sustainable energy sources is crucial for the future of the world. This viewpoint empha-

In addition, there is an urgent need for sustainable and eco-friendly energy solutions. Renewable energy, including hydrogen fuels, ethanol production, H₂ O₂ generation, etc., plays a crucial role in meeting our energy demands while mitigating climate change, but there are still many challenges in both basic research and application ...

Renewable and sustainable clean energy development and impact on social, economic, and environmental health ... Maintaining the balance between crucial aspects such as non-polluting or very low-polluting energy sources and energy efficiency is not as easy to achieve as we have seen in studies that try to do it both on a laboratory scale and an ...

Energy storage is important because it can be utilized to support the grid's efforts to include additional renewable energy sources []. Additionally, energy storage can improve the efficiency of generation facilities and decrease the need for less efficient generating units that would otherwise only run during peak hours.

Clean energy denotes the array of fuel options obtained from mostly renewable, low emissions sources such as bioenergy, direct solar energy, geothermal energy, hydropower, ocean energy, and wind energy with minimal impact on the environment or environmentally friendly (IPCC 2011).. There are several ways to defining energy efficiency. There is the ...

Hydrogen has emerged as a promising energy source for a cleaner and more sustainable future due to its clean-burning nature, versatility, and high energy content. Moreover, hydrogen is an energy carrier with the potential to replace fossil fuels as the primary source of energy in various industries. In this review article, we explore the potential of hydrogen as a ...

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