

# Renewable energy in the context of sustainable development

Executive Summary. Historically, economic development has been strongly correlated with increasing energy use and growth of greenhouse gas (GHG) emissions. Renewable energy (RE) can help decouple that correlation, contributing to sustainable development (SD).

Development of Renewable Energy Map ... tailored to the energy systems and policy context of the EU, simulates energy consumption and supply to inform the bloc strategies and directives [53]. ... This data underscores the accelerating global transition away from fossil fuels and towards a more sustainable, renewable energy future.

At present, the international energy situation is in a stage of new changes and adjustments [6, 7]. The basic trend of the global energy transition is to realize the transition of the fossil energy system into a low-carbon energy system, and finally enter the era of sustainable energy mainly based on renewable energy [8]. Therefore, many studies have analyzed the ...

Historically, economic development has been strongly correlated with increasing energy use and growth of greenhouse gas (GHG) emissions. 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, ...

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 ...

In order to promote sustainable development, which attempts to meet the demands of the current era without compromising the future, it has been realised that the utilisation of renewable energy sources is a critical component. This article covers the role of renewable energy in sustainable development and how it helps safeguard the environment.

33 9.5 Policy framework for renewable energy in the context of sustainable development 34 [TSU: this has been changed from the original title "Implications of (sustainable) 35 development pathways for renewable energy" and needs to be approved by IPCC Plenary].

The present era is more particular about avoiding the continued rise in global greenhouse (GHG) emissions due to the issue of climate change, which constitutes the most challenging environmental problem to sustainable development [1, 2]. Of the various global issues that have received unequivocal and unanimous

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agreement from countries in developed and ...

China's energy strategy is progressively shifting away from traditional fossil fuels to renewable energy. The 14th Five-Year Plan for Renewable Energy Development outlines a target for renewable energy to comprise approximately 18 % of the nation's primary energy consumption by 2025, with expectations for wind and solar power generation to double.

But our data and analysis show that the current and planned policies fall well short of achieving our critical energy-related sustainable development objectives. There has been tremendous progress in delivering universal electricity access (SDG 7.1.1) in Asia and parts of sub-Saharan Africa, with the number of people without access declining to ...

Among the sustainable development goals, the theme of the energy transition is particularly important, which translates not only into a move away from energy from fossil fuels in favor of renewable ones but also into an improvement in energy efficiency linked to energy production and greater awareness of energy consumption by citizens.

It is noted that the transition to renewable energy in the context of sustainable development will of course be a faster and more environmentally friendly approach than tightening the controls on fossil fuel-based traditional energy production systems (Zhou et al., 2021; Y&#252;kseil et al., 2020). Although the differences in the regional production ...

Renewable energy sources lend themselves well to sustainable development, especially when compared to nonrenewable energy sources. Because renewable energy resources can be replenished on a human timescale, they can be used in the present without jeopardizing the energy sources of future generations.

The security of electricity generation and sustainable development is a global issue that is predominant in developing countries [18]. Hence, the issue of sustainable energy solutions is particularly concerned with how societal energy needs can be met without compromising the ability of generations unborn to meet their own energy needs [57, 121] and large, several ...

Renewable Energy in the Context of Sustainable Development Sathaye, Jayant; Lucon, Oswaldo; Rahman, Atiq; Christensen, John M.; Denton, Fatima; Fujino, Junichi; ... 9.2.2 Sustainable development goals for renewable energy and sustainable development indicators 10 9.3 Social, environmental and economic impacts: global and regional assessment ...

Energy is a prerequisite for development and sustainable energy systems are a prerequisite for sustainable development [1]. While the world has seen rapid development over particularly the last few decades with penetration levels of renewable energy sources reaching double-digit percentages in electricity supply in several countries, many other countries and ...

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The results show that solar power is the most suitable renewable energy for sustainable development, followed by biomass, wind, and hydropower, but the optimal alternative is sensitive to the ...

30 9.5.1.3 Development pathways for renewable energy in different energy sources.....47 31 9.5.2 Policy framework for renewable energy in the context of sustainable development 32 51 33 9.5.2.1 Required instruments for sustainable development pathways for renewable 34 energy 53

The socio-economic and infrastructural development of a developing country can be largely attributed to its electricity generation, transmission and utilization [1], [2], [3], [4] is therefore unsurprising that South Africa being Africa's largest consumer of energy is also among the most developed nations on the African continent [5].South Africa is located on the ...

3 The perspective of solar energy. Solar energy investments can meet energy targets and environmental protection by reducing carbon emissions while having no detrimental influence on the country's development [32, 34] countries located in the "Sunbelt", there is huge potential for solar energy, where there is a year-round abundance of solar global horizontal ...

Sustainable energy development: History of the concept and emerging themes. I. Gunnarsdottir, ... S. Sigurgeirsdottir, in Renewable and Sustainable Energy Reviews, 2021 Abstract. Sustainable energy development is a complex multi-dimensional concept that can vary in meaning based on the context it is applied in and the perspective of the user. The role of energy in achieving ...

It is crucial to fulfill sustainable development goals in combating environmental pollution. Recently, there has been a growing literature on environmental pollution; however, while many proxies represent environmental pollution, few proxies represent environmental sustainability. In this paper, we examine the effects of institutional quality (SDG-16), economic ...

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 energy development is a complex multi-dimensional concept that can vary in meaning based on the context it is applied in and the perspective of the user. ... energy was discussed in the context of reducing greenhouse gas emissions and improving air quality [6]. Currently, sustainable energy development is viewed more holistically ...

1. Introduction. The energy-led economic growth nexus has riveted innumerable scholars and has become an area of exploration for a sustainable environment and development for environmentalists and academicians over the past decades (Wang et al., Citation 2022).The global projections for fossil fuel depletion have raised



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the greener energy consumption quest ...

Sustainable energy policies can be associated with the use of energy without endangering the ability of future generations to meet their own needs (Lemaire 2004, p. 10). Sources of sustainable energy are those that replenish naturally over a short time - in other words, renewable sources - while sustainable energy moreover requires that the practices by ...

According to the NPC, 2 33% of households in remote areas of Nepal still do not have access to electricity. Renewable energy technologies are alternative solutions to reduce Nepal's dependency on energy imports [6]. Although Nepal has the potential to use renewable energy, there are many obstacles to harness its technologies, including technical, social, ...

Supporting rural development: Renewable energy technologies can support rural development by providing access to energy to rural communities, which can help to improve quality of life, increase ...

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