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Essay

Question no:7

Renewable energy is an expensive hoax.

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The world is currently facing an unprecedented energy crisis marked by volatile fossil fuel prices, threatening energy security. According to **International Energy Agency (IEA)**, global energy demand is projected to rise by nearly 25% by 2030, while fossil fuel reserves are becoming increasingly uncertain and geopolitically contested. At the same time, climate-related disasters are imposing massive economic costs, with the world bank estimating global climate damages to exceed **150-300 billion USD** annually. In this context, renewable energy has emerged as a critical alternative. However, critics often dismiss it as an 'expensive hoax', arguing that it is unreliable, costly, and impractical. The claim that renewable energy is an expensive hoax is misleading, as it ignores its long-term economic viability, environmental benefits, and strategic importance for sustainable development and energy security.

Renewable energy refers to energy

derived from natural resources that are continuously replenished on a human timescale. These include solar, wind, hydropower, geothermal energy, biomass, and biofuels. Unlike fossil fuels, which are finite and carbon intensive, renewable sources produce little to no greenhouse gas emissions during operation. Over the past two decades, renewables have become central to global energy transitions, with more than 130 countries now committing to net-zero emission targets, largely dependent on clean energy expansion.

First, renewable energy sources are infinite and sustainable. Renewable energy sources such as sunlight, wind, and flowing water are naturally replenished and do not run out with use. Unlike coal, oil, and gas, which take millions of years to form and are rapidly depleting. The **(IEA)** reports that the amount of solar energy reaching the earth in one hour is sufficient to meet global energy demand for an entire year. This highlights the vast

sustainable potential of renewables. Therefore, investing in renewable energy ensures long-term energy availability without the economic risks associated with resource exhaustion.

Second, renewable energy significantly reduces environmental degradation and climate-related loss and damage. Fossil fuel consumption is a major contributor to air pollution, global warming, and extreme weather events. According to the World Health Organization (WHO), air pollution causes nearly **7 million** premature deaths annually, largely due to emissions from coal and oil based energy systems. Similarly, climate change-related disasters such as floods, heatwaves, and storms are also increasing economic losses, with the World Bank (WB) estimating annual damages over **150 billion USD**. On the other hand, renewable energy reduces greenhouse gas emissions and air pollutants, thereby lowering healthcare cost and climate disaster expenses. Thus, renewables

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help protect both the environment and the economy.

Third, renewable energy supports decentralized and locally generated energy system. Renewable energy can be produced close to where it is consumed, reducing transmission losses and the need for expensive centralized infrastructure. Off-grid and mini-grid solar systems have provided electricity to millions of people in rural and remote areas. The (WIB) estimates that decentralized renewable systems have helped expand electricity access to over 100 million people globally. Such systems are especially beneficial for developing countries where extending fossil-fuel-based grids is costly and inefficient. Hence, decentralized renewables offer both economic and social advantages.

Fourth, renewable energy reduces dependence on expensive fossil imports. Many countries, including Pakistan, spend a large share of their foreign exchange

earnings on importing oil, gas, and coal. For example, In 2025, Pakistan's total hydrocarbon imports amounted approximately **9.45 billion USD** during first seven months of the fiscal year, reflecting continued dependency on foreign energy sources. In contrast, renewable energy allows countries to rely on domestic resources, improving energy security and reducing vulnerability to global price shocks. As a result, renewables strengthen national economies by improving balance of payment and reducing external dependence.

Fifth, biofuels derived from agriculture and organic waste provide a dual economic and environmental solution. Biofuels convert waste materials such as crop residues, animal waste, and organic municipal waste into useable energy. According to **Food and Agriculture Organization (FAO)** waste to energy solutions can reduce methane emission from landfills by up to **60%**. Moreover, countries like **Brazil** successfully use bio-ethanol from sugarcane to

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power transportation. Thus, biofuels not only generate energy but also address waste management and environmental pollution.

Sixth, renewable energy is cost-effective in the long run due to low operational and maintenance costs. Although, initial installation cost can be high, renewable energy systems require minimal fuel and maintenance expenses over time - in contrast, fossil fuels receive massive government subsidies. The International Monetary Fund (IMF) estimated global fossil fuel subsidies at 7 trillion USD in 2022, reflecting hidden environmental and health costs. When these subsidies and damages are considered, renewable energy proves to be more economical option - Therefore, renewables offer long-term financial efficiency rather than economic burden.

Finally, the finite nature of fossil fuels makes renewable energy a strategic necessity. Fossil fuel reserves are declining, and their extraction is becoming increasingly

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expensive and environmentally damaging. The (IEA) warns that without a shift to renewables, energy insecurity and price volatility will worsen. Renewable energy provides a stable, future-proof alternative that supports sustainable development goals. Hence, the transition to renewable is not ideological rather essential for long-term energy sustainability.

However, despite its advantages, renewable energy is often perceived as expensive due to high initial capital and installation costs. Solar panels, wind turbines, and battery storage systems require significant investment, which can discourage adoption, especially in developing countries. These visible costs overshadow long-term savings, creating a perception of unaffordability. As a result, renewables are often compared unfairly with subsidized fossil fuels. This perception contributes to the myth of renewables being excessively costly.

Additionally, weather dependency and

energy storage challenges reinforce the belief that renewables are unreliable and expensive. Solar and wind energy depend on weather conditions, requiring advanced storage and grid management systems. According to the **(IEA)**, global investment in energy storage needs to increase six-fold by 2030. to support renewable expansion while this adds to short-term costs, technological innovation is rapidly improving storage efficiency. Therefore, weather dependency is a challenge rather than a fundamental weakness.

Moreover, Outdated fossil fuel based infrastructure increases transition costs. This perception prevails strengthening the belief that renewable energy transition is a capital intensive exercise because most existing transport, industrial, and agricultural systems are designed around fossil fuels. Shifting these systems to renewable energy requires infrastructure upgrades, which demand the time and investment. This structural rigidity

slows adoption and reinforces cost-related concerns.

Furthermore, lack of skilled human capital and political resistance intensify the cost perception. Many developing countries lack trained engineers, technicians, and planners for ~~enormous~~ renewable energy deployment. At the same time, vested interests in fossil fuel industries resist change to protect economic and political power. These factors delay transition and strengthen the perception of renewable as costly. Consequently, the problem lies more in governance and capacity gaps than in renewable energy ~~itself~~.

Therefore, to overcome these challenges, renewable energy must be made a national development priority. Governments should adopt clear policies, long-term targets, and stable regulatory frameworks. Countries like **Germany** and **China** demonstrate that the strong policy commitment

ment accelerates renewable adoption. Policy certainty not only reduces the investor risk and lowers the costs but also ensures a sustainable approach to produce energy and protect environment.

In the same way, investment in education, research, and technical training is equally essential. Building indigenous human capacity ensures sustainable operation and maintenance of renewable systems. The **United Nations development programme (UNDP)** emphasizes skill development and capacity building as a key driver of successful transition. Skilled labour reduces dependency on foreign expertise and cuts long-term costs.

Simultaneously, modernizing infrastructure through smart grids and energy storage is critical too. Smart grids improve efficiency by increasing storage capacity and reducing energy losses. According to **World Bank (WB)** smart grid technologies can reduce electricity losses in developing

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countries by upto 15-20%, significantly improving energy reliability. Thus, investment in modern infrastructure should be strategised to enhance affordability, stability, and long-term sustainability of renewable energy systems.

Sectoral transition in agriculture, transport and industry is equally significant to further expand renewable energy use. Electric vehicles, solar powered irrigation, and green industrial processes significantly reduce dependence on fossil fuels. The **International Transport Forum (ITF)** reports that widespread adoption of electric vehicles could reduce oil demand from road transport by more than **40%** by 2030. Similarly, solar irrigation systems lower diesel consumption and increase farm productivity in developing countries. This sectoral shift not only cuts emissions but also multiplies economic savings and energy security benefits.

Lastly, financial incentives and subsidies of renewable energy adoption increases adoption of renewable energy. Subsidies and concessional financing

encourage households and private firms to invest in renewable technologies. According to United Nations Environment Programme (UNEP) every dollar invested in clean energy can generate up to 3USD in economic returns through job creation and reduced environmental cost. Therefore, subsidies should be granted on the installation of renewable energy technologies on domestic and national levels to encourage the renewable adoption in a larger scale.

In conclusion, it is stated that renewable energy is not an expensive hoax but a strategic investment in sustainable development, economic stability, and environmental protection. While transitional challenges exist building the perception of renewable energy as capital intensive exercise. However, these challenges are often temporary and manageable compared to long term cost of fuel dependency, climate change, and energy insecurity. International evidence clearly demonstrates that renewable energy is increasingly affordable, reliable, and essential for

future resilience. Thus, dismissing the notion of renewable energy as an expensive hoax, underscores short term approach rather than informed economic and environmental reasoning. Since, this approach may compromise energy security and environmental sustainability; therefore, effective transition strategies may be prioritized at national and global levels to protect earth's environment while ensuring energy security.

“Investing in renewable energy and smart infrastructure today saves billions in costs and secures a sustainable future for tomorrow.”

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