

Why Clean Energy is Key to Combating Climate Change in Guyana

By Rahul Changa

Climate change poses an imminent threat to Guyana, with rising sea levels and increased frequency of extreme weather events directly impacting our coastal communities and natural ecosystems. As a country rich in biodiversity and natural resources, the need to transition from fossil fuels to clean energy sources has never been more critical. This shift is not only essential for reducing greenhouse gas emissions but also vital for enhancing energy security and promoting sustainable economic development.

Historically, Guyana has relied heavily on fossil fuels for electricity generation and transportation. In 2020, approximately 90% of the country's electricity came from fossil fuels, primarily natural gas and heavy fuel oil. The combustion of these fuels is responsible for significant greenhouse gas emissions, contributing to about 70% of the nation's total emissions. As global temperatures rise, the consequences of this reliance become increasingly severe, threatening our agriculture, water supply, and public health.

The Intergovernmental Panel on Climate Change (IPCC) has warned that without immediate action to reduce emissions, the world could face a temperature rise of 1.5°C above pre-industrial levels as early as 2030. For Guyana, this means more intense rainfall, flooding, and droughts, which could devastate livelihoods and exacerbate food insecurity.

Transitioning to clean energy sources, such as solar, wind, and hydropower, presents a comprehensive solution to these pressing challenges. Solar energy, in particular, is abundant in Guyana, with an average solar insolation of 4.5 to 5.5 kWh/m²/day, making it an ideal candidate for widespread adoption. The International Renewable Energy Agency (IRENA) estimates that doubling the share of renewable energy globally could lead to a reduction of up to 70% in greenhouse gas emissions by 2050.

One notable initiative is the construction of a 0.60 MW solar power plant in Leguan. This facility is designed to have a storage capacity of 1.2 MWh and is expected to reduce carbon dioxide emissions by over 800 tons annually. By replacing fossil fuels as the primary power source, this project not only contributes to lowering greenhouse gas emissions but also enhances energy independence for local communities.

The economic benefits of clean energy are compelling. According to the World Bank, investing in renewable energy could create approximately 24 million jobs globally by 2030. In Guyana, expanding the clean energy sector can stimulate local economies and provide sustainable employment opportunities, particularly in rural areas where job options are limited.

Moreover, the health benefits associated with clean energy adoption are significant. The World Health Organization (WHO) estimates that air pollution from fossil fuel combustion is responsible for 4.2 million premature deaths worldwide each year. By transitioning to cleaner

energy sources, Guyana can improve air quality, leading to better health outcomes and reduced healthcare costs associated with pollution-related illnesses.

The Leguan solar power plant exemplifies Guyana's commitment to clean energy. Designed to operate for 20 years, this facility will harness solar energy to provide a reliable power supply while significantly reducing carbon emissions. With an expected reduction of over 800 tons of CO₂ annually, the project not only addresses climate change but also sets a precedent for other regions seeking sustainable energy solutions.

This initiative represents a crucial step toward achieving Guyana's Nationally Determined Contributions (NDCs) under the Paris Agreement, which aims to reduce greenhouse gas emissions by 70% by 2030. By investing in solar energy, Guyana is not only reducing its carbon footprint but also promoting energy resilience in the face of climate change.

Despite the numerous advantages of transitioning to clean energy, several challenges must be addressed. Upgrading energy infrastructure to support renewable sources requires substantial investment. According to the Caribbean Development Bank, an estimated \$1.5 billion is needed for the Caribbean region to transition to renewable energy by 2030. This necessitates collaboration between the government, private sectors, and local communities to secure funding and resources.

Effective policies are crucial to promoting clean energy adoption. The Guyanese government should consider implementing incentives for renewable energy projects, such as tax breaks and subsidies, while establishing regulations to phase out fossil fuel subsidies gradually. Additionally, continued investment in research and development is essential for improving the efficiency and storage capabilities of clean energy technologies.

The transition to clean energy is imperative for addressing climate change and ensuring a sustainable future for Guyana. By significantly reducing greenhouse gas emissions, enhancing energy security, creating jobs, and improving public health, clean energy stands as a cornerstone of a resilient economy. The Leguan solar power plant serves as a concrete example of local efforts to embrace this transition, showcasing the potential of renewable energy in our country. Collective action from individuals, businesses, and the government will be essential in overcoming challenges and fully realizing the benefits of clean energy. Together, we can create a cleaner, healthier, and more sustainable Guyana for future generations.