

Empowering rural bioenergy

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Despite challenges in farm mechanization and waste disposal, agricultural residue presents a promising opportunity for biofuel production and rural income generation

In our exploration of sustainable energy solutions, we engaged with **Suhas Baxi, CEO and Co-founder, BiofuelCircle**, to delve into key environmental challenges that green technology can confront. We also explored the future prospects of renewable energy, focusing on scalability and its integration with existing infrastructure.

▼ Challenges and Opportunities in Rural Areas

In rural areas, stubble burning after harvests is a major contributor to air pollution and carbon emissions. India, with its small and scattered farms, faces challenges in mechanization and efficient waste disposal. Many farmers resort to on-farm burning due to convenience and cost-effectiveness. However, agricultural residue also presents an opportunity for biofuel production and income generation in rural markets.

▼ Transitioning Industrial Processes

Industries such as power generation, steel, and other process industries heavily reliant on fossil fuels are major contributors to carbon emissions. Transitioning to renewable energy sources and cleaner industrial processes is essential for decarbonization.

▼ The Role of BiofuelCircle

BiofuelCircle has developed a cloud-based digital platform that acts as a backbone for a distributed-rural biomass network. This platform serves as a digital marketplace for industries, creating a seamless organization for the bioenergy supply chain.

▼ Digitalization and Inclusivity

The platform uses digitalization alongside a participative framework of rural enterprises to promote inclusivity, participation, simplicity, and economic benefit. Through a franchise model, BiofuelCircle empowers rural businesses to aggregate and store biomass efficiently, bridging the gap between rural suppliers and industrial buyers.

▼ Seamless Interactions and Mobile Solutions

The 'Farmer Mobile App' facilitates seamless interactions between farmers and local rural warehouses, allowing farmers to drive in or pre-



SUHAS BAXI, CEO and Co-founder, BiofuelCircle

book evacuation services based on their needs. The 'Biomass Bank' module enables village-level enterprises to operate aggregation and warehousing activities.

▼ E-Commerce Marketplace

The platform's E-Commerce Marketplace module brings together industrial buyers and suppliers of biomass and biofuels, offering various business processes such as RFP-based procurement, auctions, term contracts, and spot contracts for over 50 varieties of solid biofuels.

▼ Policy Measures and Transition to Renewable Alternatives

Implementing carbon credits and green credit mechanisms promptly could serve as significant policy measures to bolster the transition from fossil fuels to renewable alternatives, particularly biofuels. Initiatives like SATAT in India promote the adoption of Compressed Biogas (CBG) as an alternative to petrol, diesel, and CNG for vehicles, showcasing the country's embrace of bioproducts.

▼ The Future of Renewable Energy

As renewable energy technologies continue to evolve and mature, they will play an increasingly central role in powering our world sustainably and driving the transition towards a greener and more resilient energy infrastructure. Through innovation, collaboration, and sustainable practices, green technology paves the way for a brighter and more environmentally sustainable future for generations to come. ■