



THE WORLD ECONOMICS TIMES



SOCIETAL GROWTH
EDUCATION

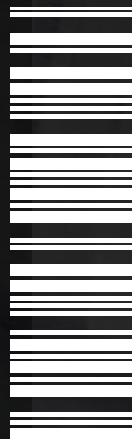
*"Join hands with us as
we catalyze positive
change for individuals,
businesses, and
communities."*

ACTIONABLE IMPACT

FROM WORKSHOPS TO SOCIETAL
INITIATIVES, WITNESS REAL
CHANGE IN ACTION.

EMPOWERING CHANGE
BUILDING FUTURES

LEAD WITH IMPACT



Empowering Global Economic Insight: Introducing The Worldonomics Times

In an era where the tapestry of global finance and economics interweaves with the complex dynamics of markets worldwide, there emerges a beacon of insight, The Worldonomics Times. Announced by the International Navodaya Chamber of Commerce (INCOC) on 26-03-2024, this forthcoming monthly magazine is poised to be an indispensable resource for anyone keen on understanding the pulsating heartbeat of the global economy. Scheduled to release its premiere issue on May 5th, 2024, The Worldonomics Times aims to fill a crucial gap in the landscape of financial journalism. With a commitment to providing in-depth coverage of global finance and economics trends, news, and analysis, this publication is tailored for business leaders, policymakers, and the intellectually curious who strive for a deeper understanding of the world's economic currents.

Global Perspective with Local Relevance

At its core, The Worldonomics Times will offer a global perspective that bridges diverse markets and economies. This isn't just about tracing the flow of capital across continents; it's about understanding how these financial streams affect businesses and policies on a local level. Sandeep Kumar, the founder of the International Navodaya Chamber of Commerce and Editor-in-Chief of the magazine, emphasizes the platform's role in exploring emerging trends and the forces sculpting world markets.

In-Depth, Data-Driven Journalism

What sets The Worldonomics Times apart is its commitment to investigative journalism that digs beneath the surface. This magazine will go beyond the headlines to uncover the underlying stories that drive financial shifts, offering clarity in an ever-complex world. Coupled with expert opinions, interviews, and thought leadership from noted economists and financial specialists, readers are promised a comprehensive outlook on the global economic scene. Moreover, with a focus on data-driven insights, the magazine will utilize visualizations and infographics to demystify complex economic trends and statistics, making the information accessible and digestible to its readership.

Accessibility and Empowerment

Understanding the importance of adaptability in today's fast-paced world, The Worldonomics Times will be accessible in both print and digital formats. This dual availability ensures that readers can engage with the content in a manner that best suits their lifestyles, whether at home, in the office, or on the move.

"We are committed to delivering accurate, unbiased, and high-quality journalism focused on the world of finance and economics," Kumar states. "Our goal is to empower readers with the knowledge they need to make informed decisions in an increasingly dynamic global landscape."

As we anticipate the release of The Worldonomics Times' premiere issue, it's clear that this magazine is on a mission to enlighten and inform. Through its rigorous analysis, expert commentary, and commitment to excellence in journalism, The Worldonomics Times is set to become a guiding light for anyone looking to navigate the intricate world of global finance and economics.



Sandeep Kumar

EDITOR-IN-CHIEF

Worldonomics Times



Green Energy Integration into the Power Grid



Electricity is a fundamental part of modern life, but its reliance on fossil fuels contributes to climate change. Green energy, also known as renewable energy, offers a sustainable alternative. This research plan will explore how green energy sources can be integrated into the power grid to replace electricity generation from fossil fuels.

Scope and Limitations

- Focus on major green energy sources like solar, wind, geothermal, and hydropower.
- Acknowledge the continued role of electricity as the primary energy carrier.
- Briefly explore emerging green technologies like bioenergy and ocean energy.
- Recognize the geographical variations in green energy availability

SOURCES OF GREEN ENERGY

Here are the major green energy sources:



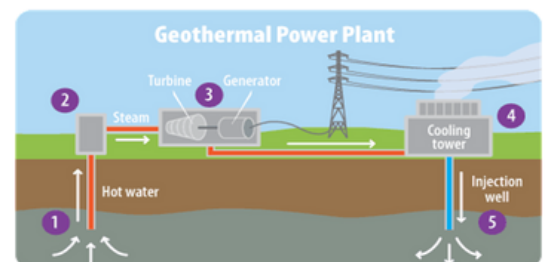
Solar energy: Solar energy is the most abundant renewable energy resource on Earth. It can be harnessed using photovoltaic (PV) cells, which convert sunlight directly into electricity. Solar energy can be used for a variety of applications, including powering homes and businesses, generating electricity for the grid, and heating water.

Wind energy: Wind energy is another abundant renewable energy resource. It is harnessed using wind turbines, which convert the kinetic energy of moving air into electricity. Wind energy can be used for a variety of applications, including powering homes and businesses, generating electricity for the grid, and pumping water



Hydropower: Hydropower is the oldest and most widely used form of renewable energy. It is harnessed using dams, which convert the potential energy of falling water into electricity. Hydropower can be used for a variety of applications, including powering homes and businesses, generating electricity for the grid, and storing energy.

Geothermal energy: Geothermal energy is heat from the Earth's interior. It can be used to generate electricity or to heat buildings. Geothermal energy is a reliable source of renewable energy, as it is not affected by weather conditions.



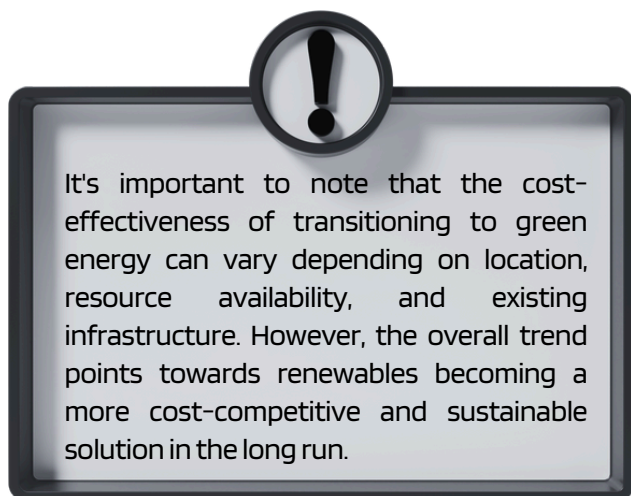
These are just a few of the many green energy sources that are available. As technology continues to develop, green energy is becoming more affordable and efficient. This is making it a more attractive option for replacing fossil fuels as a source of electricity.

HOW SWITCHING FROM ELECTRICITY TO GREEN ENERGY CAN BE COST EFFECTIVE?



Replacing electricity generation with green energy can be surprisingly cost-effective, and the economic benefits are becoming increasingly clear. Here's a breakdown of why the switch to green might save money in the long run:

- **Falling Costs of Renewables:** The cost of solar, wind, and geothermal energy has plummeted in recent years. Solar PV panel prices have dropped by a staggering 85% since 2010, while wind energy costs have fallen by over 50%. This trend is expected to continue, making renewables a more competitive option compared to traditional fossil fuels.
- **Fuel Cost Fluctuations:** Fossil fuel prices are volatile and susceptible to global market forces. Green energy sources, on the other hand, don't rely on unpredictable fuel costs. Once a solar panel or wind turbine is installed, the "fuel" (sunlight or wind) is free, leading to more stable and predictable energy expenses.
- **Reduced Environmental Costs:** Traditional power generation often comes with hidden environmental costs like air and water pollution. These costs can be significant, leading to healthcare issues, environmental clean-up efforts, and regulations on emissions. Green energy sources produce little to no emissions, reducing these long-term environmental expenses.
- **Government Incentives:** Many governments offer subsidies, tax breaks, and other incentives to encourage the adoption of renewable energy. These incentives can significantly offset the upfront costs of installing solar panels, wind turbines, or geothermal systems.
- **Energy Efficiency:** The shift to green energy often goes hand-in-hand with increased energy efficiency. Integrating renewables often leads to investments in smarter grids and energy storage solutions, which can ultimately reduce overall energy consumption and lower electricity bills.
- **Long-Term Investment:** While there might be upfront costs associated with installing green energy infrastructure, these systems have a long lifespan, typically lasting 20-30 years with minimal maintenance. Fossil fuel power plants, on the other hand, require ongoing fuel purchases and may require expensive upgrades to meet environmental regulations.



COST ASSOCIATED WITH REPLACEMENT

Replacing traditional electricity generation with green energy incurs different costs depending on the chosen technology. Here's a breakdown of the installation costs for some major green energy sources:

1. Solar Energy:

Upfront Costs:

- Solar panels are the priciest component, with costs varying based on size, efficiency, and brand. Expect a range of Rs.165.75 to Rs. 414.36 per watt (Wp) of capacity.
- Installation costs include labor, permits, and electrical work, typically ranging from Rs. 62.15 to Rs. 124.31 per Wp.
- Additional costs might include roof modifications, battery storage systems (optional but enhanced energy security), and monitoring equipment.

2. Wind Energy:

Upfront Costs:

- Wind turbines are expensive, with large-scale utility turbines costing lakhs of rupees each. Costs depend on size, location, and wind resource potential.
- Installation costs involve foundation construction, electrical interconnection, and turbine assembly, often reaching lakhs for utility-scale projects.
- Permitting and environmental studies can add to the overall cost.

3. Hydropower:

Upfront Costs:

- Hydropower projects are highly variable depending on the scale and type (dams, run-of-river). Large dams involve significant costs for construction, turbines, and environmental mitigation measures.
- Run-of-river projects are typically smaller and less expensive but may have limitations in electricity generation capacity.

4. Geothermal Energy:

Upfront Costs:

- Geothermal projects require drilling deep wells to access geothermal resources, which can be expensive depending on location and depth.
- Power plant construction and equipment installation add to the overall cost.
- Unlike other renewables, geothermal potential is geographically limited, impacting project feasibility.

General Considerations:

- **Maintenance Costs:** Green energy systems typically have lower maintenance costs compared to fossil fuel plants. However, regular maintenance is crucial for optimal performance.
- **Financing Options:** Loan programs, power purchase agreements (PPAs), and government incentives can help spread out or reduce upfront installation costs.
- **Grid Integration Costs:** Integrating large-scale renewables into the grid might sometimes require additional infrastructure investments.

Remember: While upfront costs can seem high, green energy systems offer long-term benefits like stable energy costs, reduced environmental impact, and potential government incentives. It's crucial to conduct a thorough cost-benefit analysis considering your specific needs and location when evaluating the switch to green energy.

TECHNICAL CHALLENGES

Integrating large-scale green energy sources like solar and wind into the power grid presents several technical challenges. Here are some of the key hurdles to overcome:

- **Variability and Intermittency:** Unlike traditional power plants fueled by coal or gas, solar and wind energy are variable and intermittent. Sunshine and wind availability fluctuate throughout the day and seasons. The grid needs to adapt to these fluctuations to maintain a constant and reliable supply of electricity.
- **Grid Stability:** The sudden changes in power output from renewables can disrupt the delicate balance of supply and demand in the grid, potentially causing voltage fluctuations or frequency imbalances. This can lead to power outages or damage to equipment.
- **Transmission Challenges:** Large-scale solar and wind farms are often located in remote areas with good resource potential, far from population centers with high energy demand. This necessitates upgrading or expanding the existing transmission infrastructure to efficiently deliver renewable energy over long distances.

- **Energy Storage Needs:** To address the intermittency of solar and wind, large-scale energy storage solutions are needed. This could involve battery storage, pumped hydro storage, or other technologies that can store excess renewable energy during peak production times and release it when demand is high.
- **Forecasting and Planning:** Accurate forecasting of weather patterns and energy demand is crucial for integrating renewables effectively. Improved forecasting models can help grid operators anticipate fluctuations in renewable energy output and adjust power generation from other sources accordingly.
- **Grid Modernization:** The current power grid infrastructure was largely designed for one-way flow of electricity from centralized power plants. Integrating large-scale renewables necessitates modernizing the grid to handle two-way power flow, accommodate distributed energy resources, and enable real-time monitoring and control of the system.

These challenges are not insurmountable. Advancements in technology, investment in grid infrastructure, and development of smarter grid management systems are paving the way for a more efficient and flexible grid that can accommodate a higher percentage of renewable energy sources.



GOVERNMENT PLANS AND INVESTMENTS

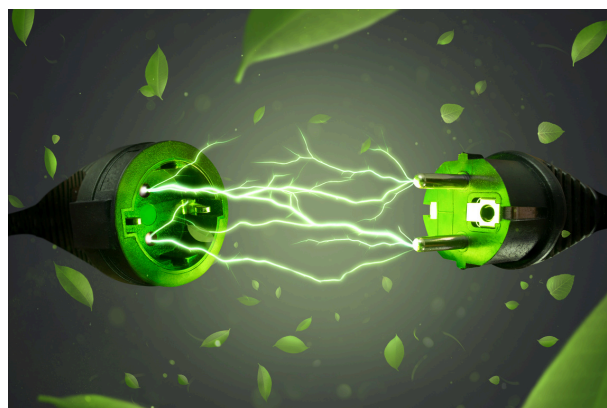
The Indian government has several schemes to invest in green energy, including:

- **Production Linked Incentive (PLI) Scheme:** The second phase of this scheme, launched in September 2022, aims to build 65 GW of annual manufacturing capacity. Investors can bid until September 2023 to receive incentives.
- **National Green Hydrogen Mission:** This scheme aims to make India a global hub for green hydrogen production, use, and export by 2030. The mission has an outlay of INR 19,744 Cr (\$2.4 Bn) and aims to produce 5 MMT of green hydrogen or ammonia annually, create 30,000 direct jobs, and 1,20,000 indirect jobs, and import INR 17,500 Cr annually.
- **Renewable Energy Research and Technology Development (RE-RTD) Programme:** This program includes short-term training and skill development programs, fellowships, internships, and support for lab upgradation.
- **Solar Rooftop Phase II:** This scheme aims to integrate 500 GW of renewable energy capacity by 2030.
- **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM- KUSUM):** This scheme is an off-grid solar scheme.
- **New Solar Power Scheme:** This scheme is for PVTG Habitations/Villages under PM JANMAN.

CONCLUSION

Gone are the days when green energy was a pricey option. Solar and wind power are now cost-effective rivals to traditional electricity. Their fuel – sun and wind – is free, and maintenance is cheaper. Government incentives further bring down the initial cost. While upfront investment can be high, renewables win in the long run, saving money and the environment.

Though some factors like location and storage can affect costs, green energy is a clear winner in the race for sustainable and affordable electricity.



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