Renewable energy

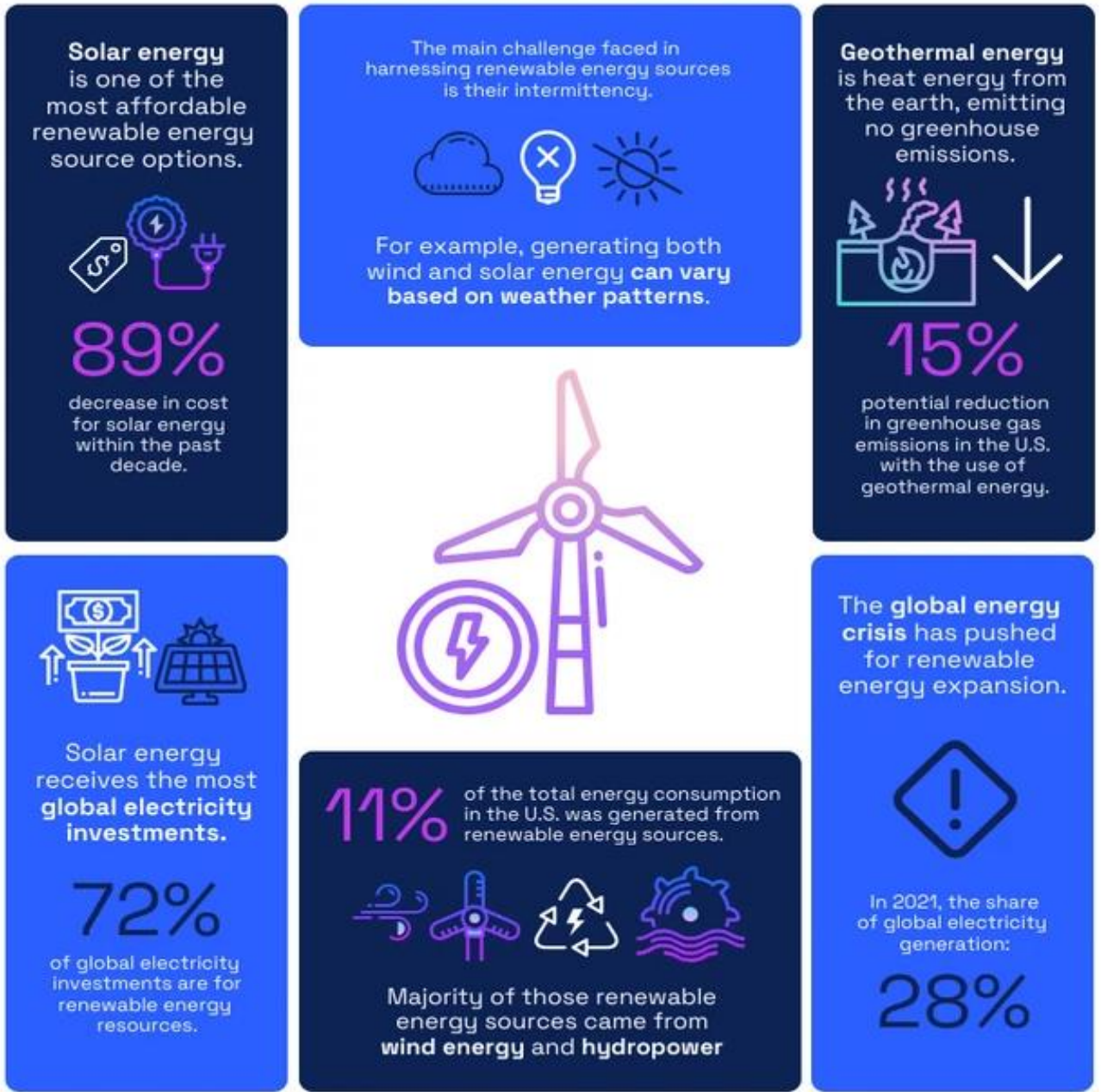
“A sustainable future”

By

Prof Chidi, uhuegbu

what is renewable energy ?

- Renewable energy is energy gotten from resources that can be replaced by nature within a human time frame.
- Examples:Solar,Hydro,Wind,Geothermal,and Biomass.



Why renewable energy ?

- renewable energy sources don't produce carbon dioxide or extra greenhouse gases that contribute to global warming.
- Enhances energy security and reduces dependence on fossil fuels

- **Acceptance of renewable energy solutions controls the demand and adoption of petroleum products and contributes significantly to the stability of the country's exchange rate.**
- **It is clear that despite the abundance of crude oil reserves, our country is ill-equipped in terms of energy production and supply; for those who have the privilege of accessing the country's grid, everything falls apart, especially considering that the country's grid which has broken down several times.**

Solar Energy
“harnessing the power of sun”

- **Photovoltaic cells utilize the sunlight and heat energy to produce sustainable power.**
- **Solar thermal system uses sunlight to heat water or air.**
- **Benefits: zero emissions, low maintenance, energy independence.**

Wind energy
“Tapping into the wind”

- Wind turbine convert wind energy into electricity.
- Benefits: high energy conversion efficiency, low operating costs.

Hydro Energy

"Harnessing the Power of Water"

- Hydroelectric power plants generate electricity from moving water
- Benefits: high energy conversion efficiency, low operating costs, flood control

Geothermal Energy
"Tapping into the Earth's Heat"

- Geothermal power plants generate electricity from hot underground reservoirs
- Benefits: high-capacity factor, low emissions, reliable baseload power

Bioenergy

"Energy from Organic Matter"

- Bioenergy includes biofuels, biopower, and biogas
- Benefits: renewable, carbon-neutral, waste reduction

Renewable energy policy and incentives

- Chief Geoffrey Nnaji, the Honorable Minister of Innovation, Science and Technology, has been instrumental in promoting renewable energy in Nigeria.
- One notable initiative is the partnership between the Nigerian government and Hecate Global Renewables to develop and sustain the energy sector in the country

- **Renewable Energy Targets:** Nigeria aims to increase its renewable energy mix to 30% of total electricity generation by 2030.

- **Solar Energy Development:** The government is promoting the development of solar energy through initiatives like the Solar Power Naija Project.

- **Feed-in Tariffs: The Nigerian Electricity Regulatory Commission (NERC) has introduced feed-in tariffs to encourage investment in renewable energy projects .**

- **Tax Incentives: The government offers tax incentives to investors in the power sector, including renewable energy projects .**

- **Rural Electrification Fund (REF): The REF provides financing for rural electrification projects, including renewable energy-based mini-grids .**

- Additionally, the Electricity Act 2023 has liberalized the electricity sector, allowing states, companies, and individuals to generate, transmit, and distribute electricity.
- This act prioritizes the development and utilization of renewable energy, encouraging the integration of renewable energy technologies into the existing grid system .

conclusion

- **When discussing climate change, it stands that renewable energy often ranks most in the variations the world can make to circumvent the vilest influences of increasing temperatures.**
- **That's for the reason that renewable energy sources don't produce carbon dioxide or extra greenhouse gases that contribute to global warming.**
- **Nigeria has great potential for renewable energy.**

- **Most portions of the country have plenty of sunshine all year, with the exception of perhaps a few hours of cloudy days through the rainy season.**
- **Great rivers network the country, and windswept coastlines and hills disrupt the landscape.**
- **There is likewise plenty of vegetation appropriate for biofuel and great advancement has been made in determining and discovering likely geothermal grounds in the country.**
- **Relative advances in original knowledge in photovoltaic expertise have made solar energy the greatest commonly obtainable renewable energy basis in the Nigerian marketplace.**

Thanks
and
remain blessed