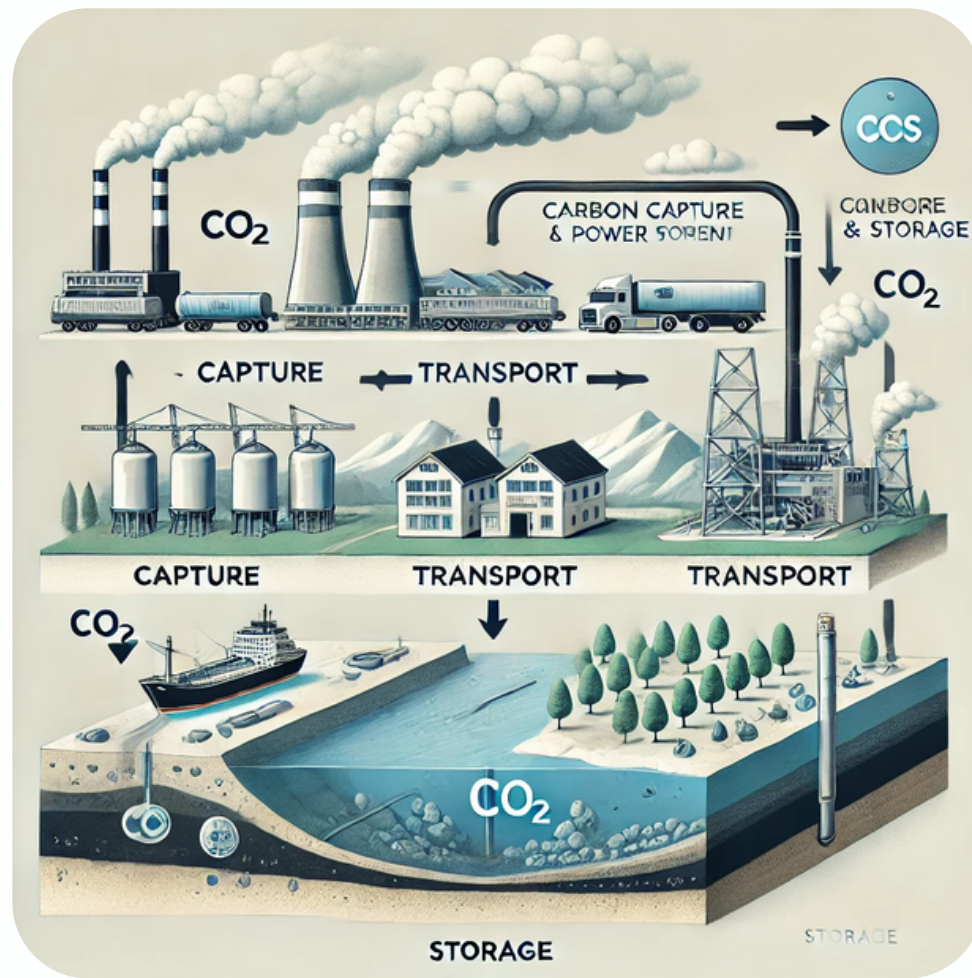


2025 Innovations in Carbon Capture, Renewable Energy & Climate Finance

Key Players & Emerging Technologies

Presented by: Hellen Mutheu





Advanced Carbon Capture & Storage (CCS)

Key Development:

- Low-energy Direct Air Capture (DAC) + Bioenergy with Carbon Capture (BECCS)

Impact:

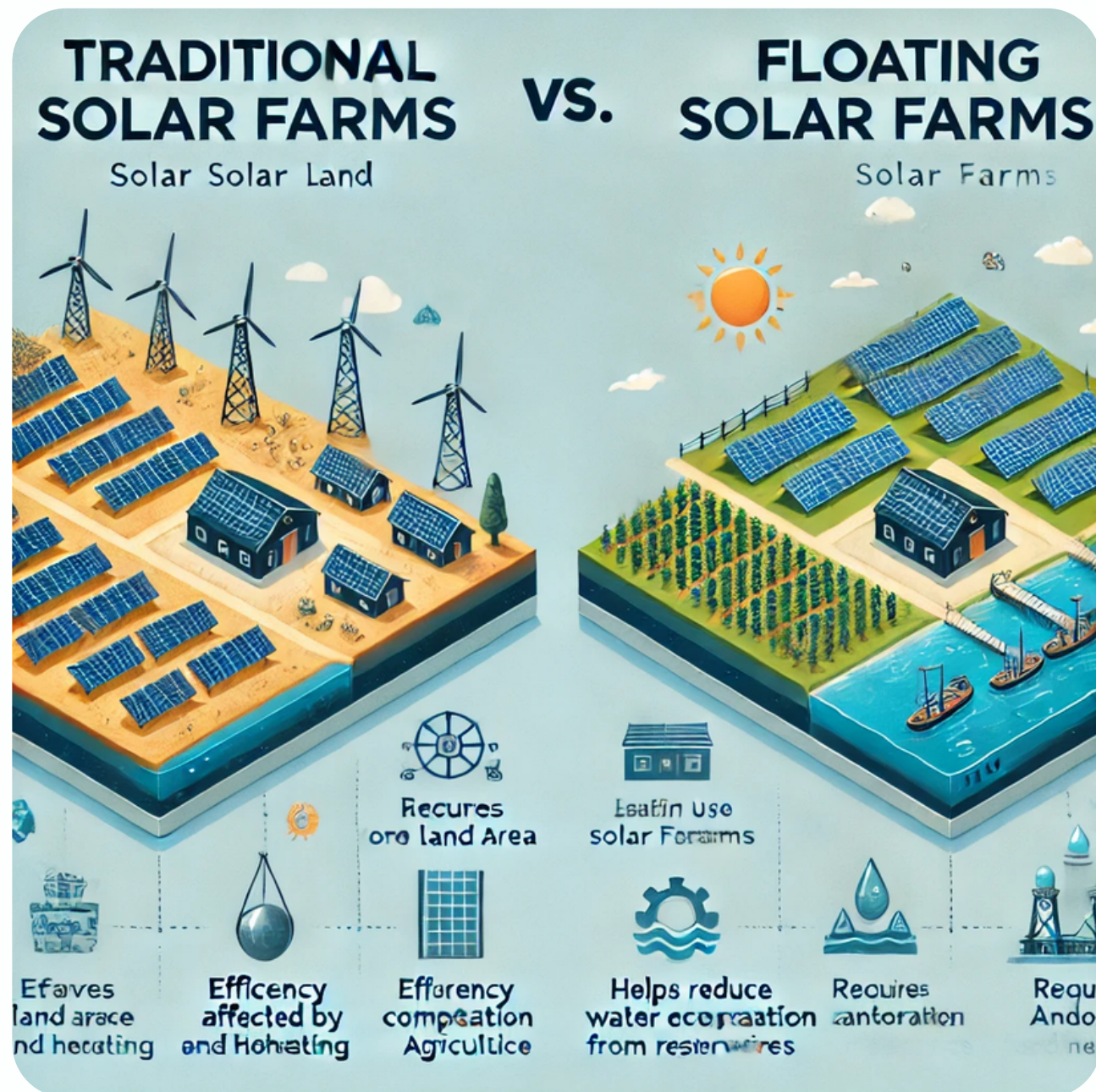
- Absorbs CO₂ from ambient air using liquid sorbents; produces green hydrogen as a byproduct.
- Reduces CO₂ emissions from industries & power plants, enhances carbon storage
- Enables circular economy by reducing atmospheric CO₂ while generating renewable energy.

Key Players:

- Climeworks, Carbon Engineering, Charm Industrial
- Greenlyte Carbon Technologies (Germany)
- NeoCarbon (Berlin, Germany) – Retrofit DAC kits for cooling towers.

2025 Trend: New government-backed incentives are accelerating large-scale CCS adoption

Next-Gen Renewable Energy Technologies



01 Key Development:

- Floating Solar Farms & Next-Gen Wind Turbines
- Cost-effective nuclear energy solutions via Small Modular Reactors (SMRs)

02 Impact:

- Expands renewable energy in urban & offshore areas, boosts grid efficiency
- Decarbonizes industrial processes and supports grid stability in remote areas.
- Compact reactors like NuScale's VOYGR and Rolls-Royce's SMRs offer scalable clean energy solutions.

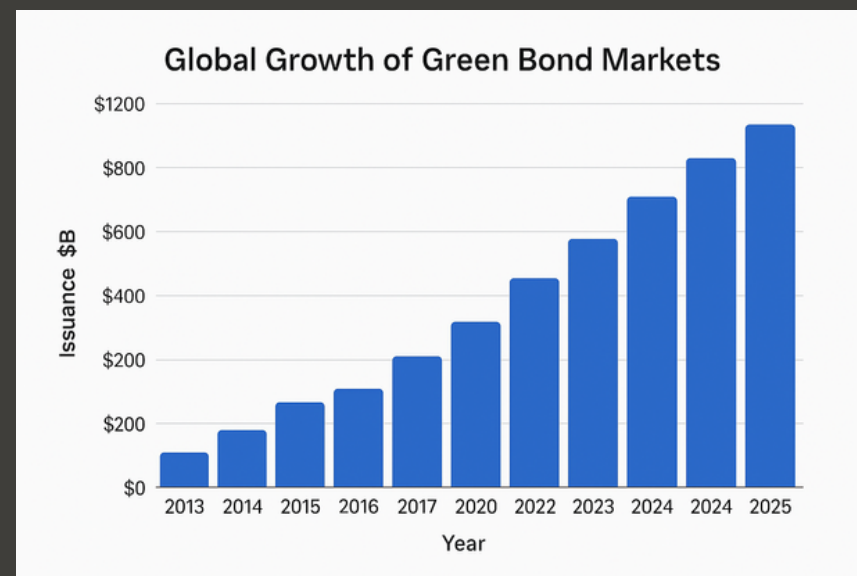
03 Key Players:

- Tesla Solar, M-Kopa Solar (Kenya)
- NuScale Power (USA) – Leading SMR provider.
- Rolls-Royce (UK) – Developing modular reactors for African markets.

04 2025 Trend:

- Breakthroughs in energy storage improve grid reliability

Climate Finance & Green Bonds



Key Development:

- AI-powered carbon credit trading & blockchain-based green finance
- Public-private climate finance instruments, such as those developed by the Global Innovation Lab for Climate Finance.

Impact:

- Increases transparency in climate investments, democratizes access to green funding
- Attracts private capital to high-risk markets while creating local economic benefits.
- Innovative funding mechanisms that combine grants, loans, and equity to unlock investments for net-zero projects.

Key Players:

- World Bank, Nairobi Securities Exchange (NSE), Gold Standard, Verra
- Global Innovation Lab for Climate Finance – Supporting nine new ideas in Africa for 2025.
- FSD Africa – CAPE program funding high-integrity carbon projects.

2025 Trend:

- African nations launching sovereign green bonds to fund climate projects

Conclusion & Call to Action

- **Summary of Impact:** These innovations will accelerate Africa's transition to a sustainable economy, addressing climate challenges while boosting economic growth.



● Key Takeaways:

- Carbon capture is scaling with new incentives
- Renewable energy is becoming more efficient & widespread
- Climate finance innovations are making green investments more accessible

● Call to Action:

"Invest, Innovate, and Support Sustainable Solutions for a Greener Future!"

"Invest in Africa's green future—partner with innovators driving carbon capture, renewable energy, and climate finance solutions."



THANK YOU