



सत्यमेव जयते

NITI Aayog

Green Transformation (GX) and Energy Security: Navigating Geopolitical and Economic Challenges

Suman Bery,
Vice-Chairman, NITI Aayog

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India's Unique Development-Climate Journey

- Pursuing Viksit Bharat by 2047 & Net-Zero by 2070: ***first-of-its-kind dual mission***
- Contributed just 4% of historical cumulative CO₂ emissions (since 1850) CO₂, yet faces high climate vulnerability
- Already delivering results:
 - Emissions intensity down 36% (2005–2020)
 - Renewables at 237 GW, 20% ethanol blending
 - Achieved non-fossil capacity target 5 years early
- Aiming to pioneer a low-carbon, inclusive growth model

The Development Challenge & Finance Gap

- Goal: \$30T economy by 2047; energy demand to 4–5X
- 80% of infrastructure is yet to be built
- Climate investment need: \$400–450B/year till 2070 (Today's flow: ~\$135B, with only ~\$60B for clean energy)
- Finance must align with technology maturity:
 - Commercial capital for solar/wind
 - Public & concessional finance for green hydrogen, CCUS, adaptation
- India calls for a revamped global climate finance compact

- Tackling the energy trilemma: *security, equity, sustainability*
- Strategy includes:
 - Reducing import dependence; diversifying sources
 - Continued use of coal — with responsibility: clean tech, just transition
 - ASSET platform: helping states plan transition pathways
- Massive scale-up needed:
 - 7000–9000 TWh electricity demand by 2047
 - Cooling load, EVs to drive demand
 - 90% capacity from non-fossil, 1000+ GW storage needed

Technology, Jobs & Innovation

- Phase 1: solar & wind scale-up; Phase 2: integration & innovation
- Major focus areas:
 - Battery storage, pump hydro, green hydrogen pilots
 - Smart grids, EV charging, digital demand response
- India Energy Stack: open digital infra for energy innovation
- Clean technology as a development strategy:
 - Green jobs in solar, hydrogen.
 - PLI schemes for domestic manufacturing.
 - Focus on hard-to-abate sectors: steel, cement, MSMEs

Global Role & Closing Message

- India as a climate convener:
 - Founding ISA, CDRI, Global Biofuels Alliance
 - Leading G20 energy transition dialogue
- Fair access to finance & green markets is critical
- India's message:
 - Climate action must be cooperative, not coercive
 - Development and decarbonisation can go together — if finance, policy, and tech align
- India is ready to lead — *responsibly, equitably, ambitiously !*



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Thank You