

Green Telecom: India and the World



Sustainable Innovations in the Telecom Sector

Understanding Green Telecom

► Environmentally sustainable telecom practices in telecom to:

1. Reduce carbon footprint
2. Improve energy efficiency
3. Minimize environmental impact

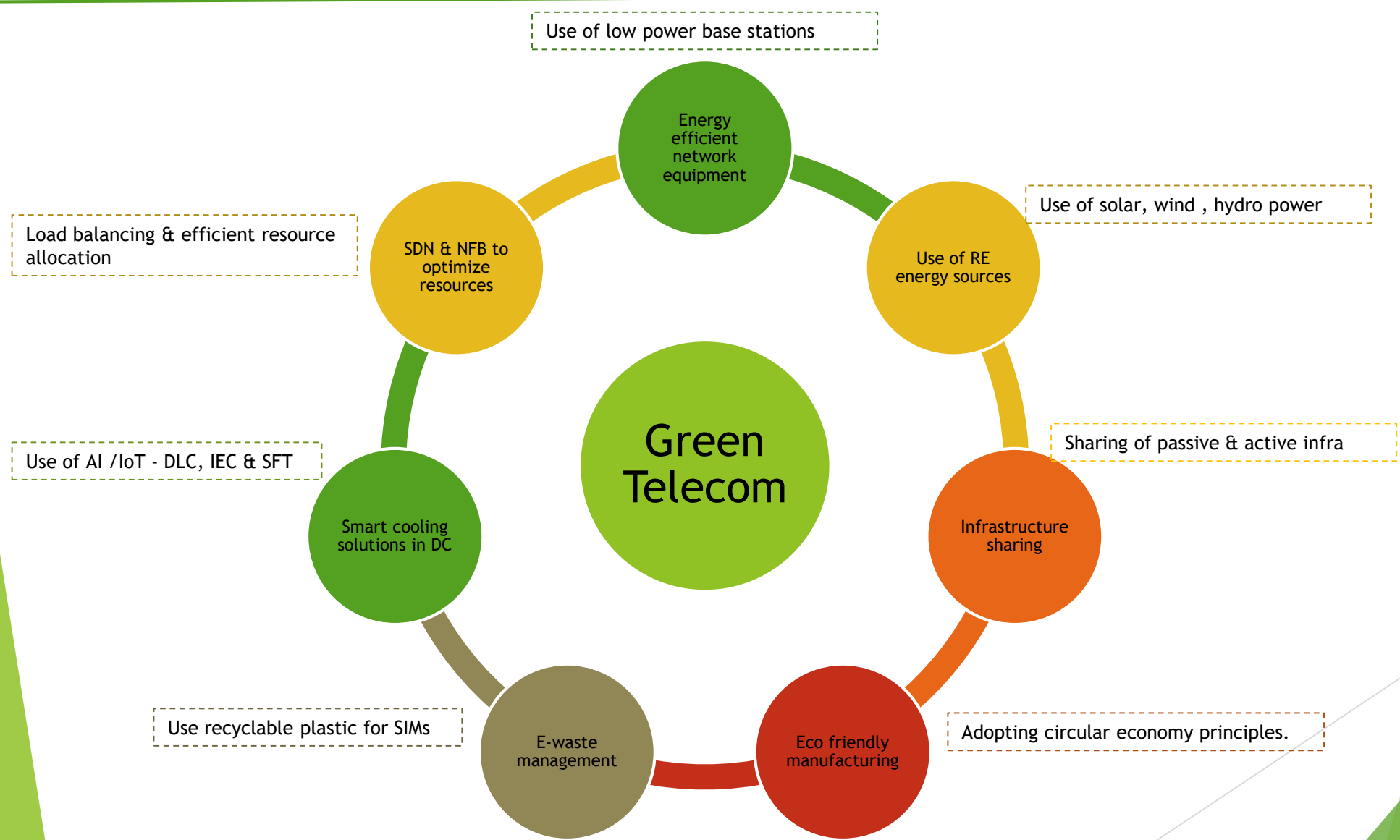


► Key components:

1. Renewable energy
2. Smart infrastructure
3. Energy-efficient equipment
4. Technological advancements in Telecom
5. Use of AI/ML



Key pillars of Green Telecom



Adoption of renewable energy

Indian perspective

- ▶ Rapid mobile network expansion = higher energy demand
- ▶ TRAI guidelines promoting renewable energy use
- ▶ Focus on rural telecom electrification using solar
- ▶ Push for 5G and fiber for energy-efficient networks



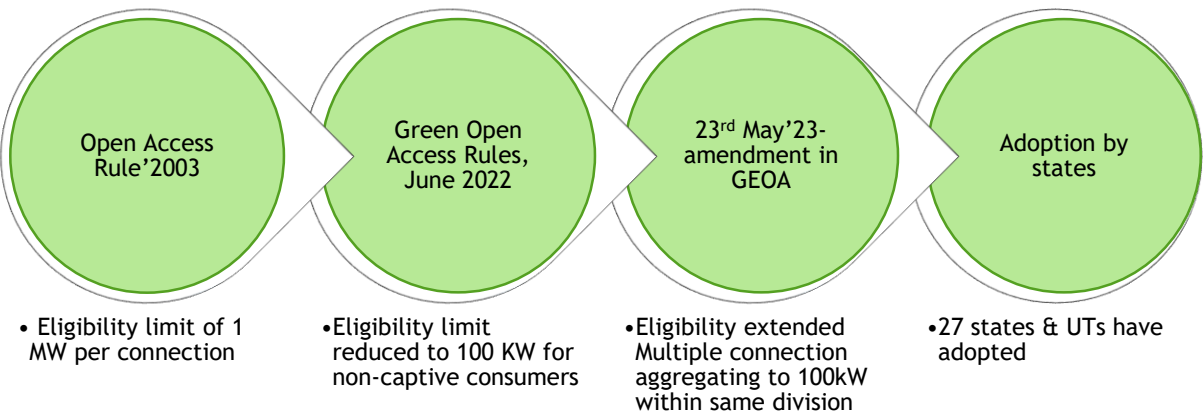
World perspective

- ▶ EU: Carbon-neutral targets by 2040 (Orange, Vodafone)
- ▶ US: AT&T & Verizon aiming for net-zero by 2035
- ▶ China: Green 5G rollout, AI-managed energy systems
- ▶ Africa: Solar-powered towers in off-grid areas

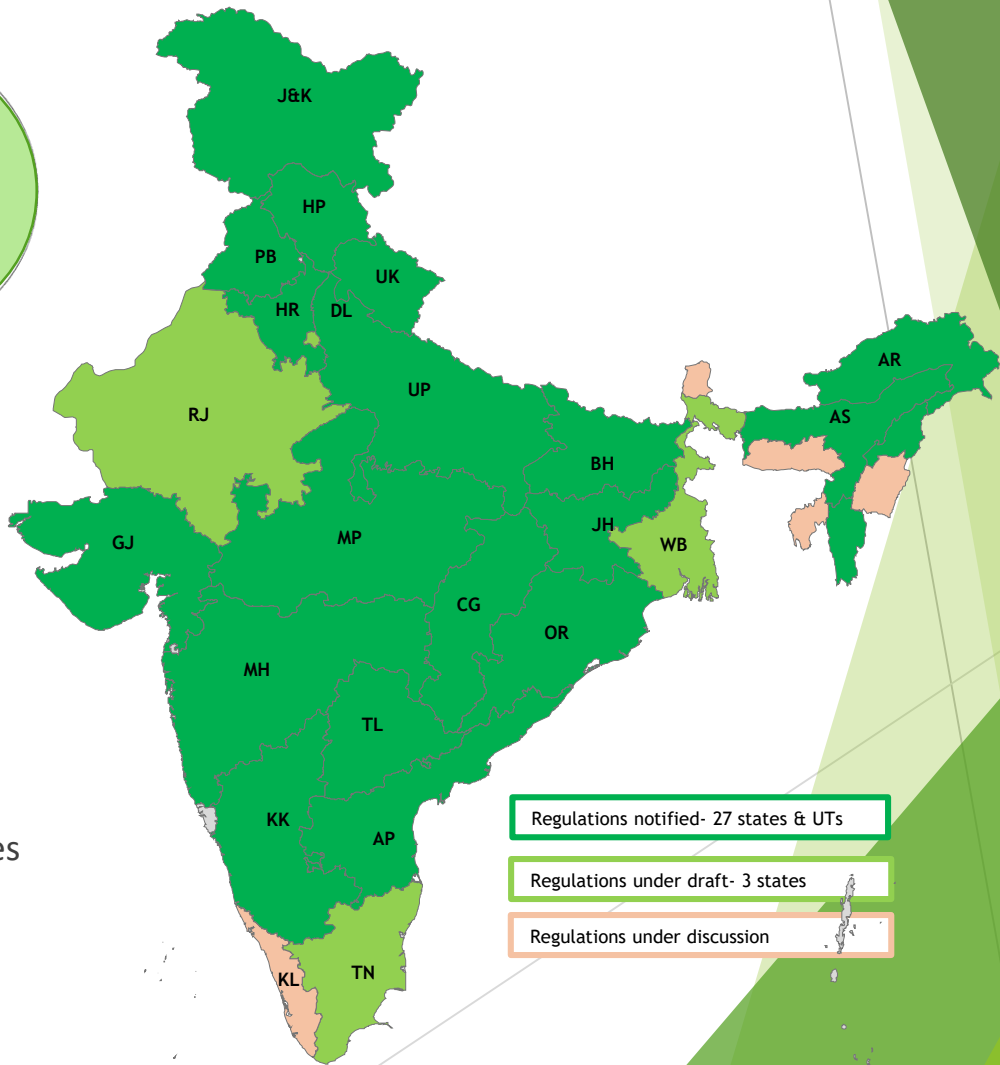


Green energy open access for Telecom

Green energy open access policy timelines



- ▶ ToCos have experimented with site based solar solution
- ▶ Infrastructure sharing common among telecom operators
- ▶ Government push via Digital India and BharatNet
- ▶ TRAI recommendation: 20% of towers to run on hybrid energy sources



Technology Trends, challenges, future outlook



Tech

AI/ML for dynamic energy optimization

- Software-defined networking (SDN)

- Network Function Virtualization (NFV)

- Transition to 5G & future green 6G



High initial investment in renewable tech

- Power availability in remote areas

- Regulatory compliance and standardization

- Managing electronic waste (e-waste)



Green telecom is vital for sustainable digital growth

- India and the world are making steady progress

- Combining policy, innovation, and investment is key

- A greener telecom sector means a greener planet

Wishing everyone a greener tomorrow