Regulating Air Conditioner Temperature in India: A Step Towards Energy Efficiency

Introduction: A Step Ahead in Cooling Regulation

India's Power Ministry, building on earlier initiatives, has proposed new guidelines to restrict the operational temperature range of air conditioners (ACs) to **20°C–28°C**. This move seeks to address the growing energy demand from the cooling sector and minimize health risks from overcooling.

Background: Evolution of AC Guidelines

- **2018 (BEE Initiative):** Voluntary guidelines for commercial establishments to maintain optimal AC settings.
- **2020 Mandate:** ACs required a **default setting of 24°C**, though still user-modifiable.
- **2025 Proposal:** Mandates manufacturing of ACs with hardwired operational limits of 20°C–28°C.

Why the Change is Crucial

1. Rising Cooling Demand

- Cooling load projected to rise to **200 GW by 2030**, from current **50 GW**.
- AC usage is growing rapidly despite only **6% household penetration**, indicating a massive future energy load.

2. Economic and Energy Burden

- Increased AC use could drive up **electricity tariffs** and reliance on **fossil fuel-based power**.
- Every **1°C increase in temperature setting saves ~6% energy**; national savings could reach **20 billion units annually**.

3. Health Impacts of Excessive Cooling

- **Low temperatures (<18°C)** linked to:
  - **Hypertension** from vasoconstriction.
  - **Respiratory issues** in children.

- **Mental health stress**, poor sleep quality, and immunity loss.
- **Vulnerability in the elderly** due to weak thermoregulation.

Global Comparison

- **Japan's Model**:
  - Encourages a **28°C default temperature** in offices and public institutions to optimize energy usage.

Benefits of Restricting Temperature Range

- **Energy Efficiency:** Reduces power consumption and grid stress.
- **Emissions Reduction:** Supports **India's Net Zero** and **Paris Agreement** commitments.
- **Public Health:** Maintains comfort without health risks.
- **Behavioral Change:** Encourages responsible cooling, modeled on **Japan's 28°C standard**.
- **Equity:** Controls peak demand, keeping energy **affordable for all**.

Way Ahead

- **Implementation:** Enforce new norms through manufacturing standards and labeling.
- **Awareness Campaigns:** Educate consumers on health and cost benefits.
- **Monitoring Impact:** Periodic reviews by BEE to evaluate compliance and energy savings.
- **Incentives:** Offer rebates or star-rating advantages for compliant ACs.
- **Smart Urban Planning:** Integrate energy-efficient cooling into **Smart Cities Mission** and **urban resilience frameworks**.

Rankers Guidance

Conclusion

The proposed temperature control norms for ACs represent a **strategic and science-based policy reform**. By aligning energy efficiency with public health and environmental goals, India strengthens its commitment to **sustainable development**, **climate action**, and **equitable energy access**—paving the way for **health-conscious, eco-friendly urban cooling solutions**.