

Facilitating a low-carbon transition in the developing world

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Time for action towards an ambitious decarbonised world:

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The energy, climate, and S&T context in developing countries

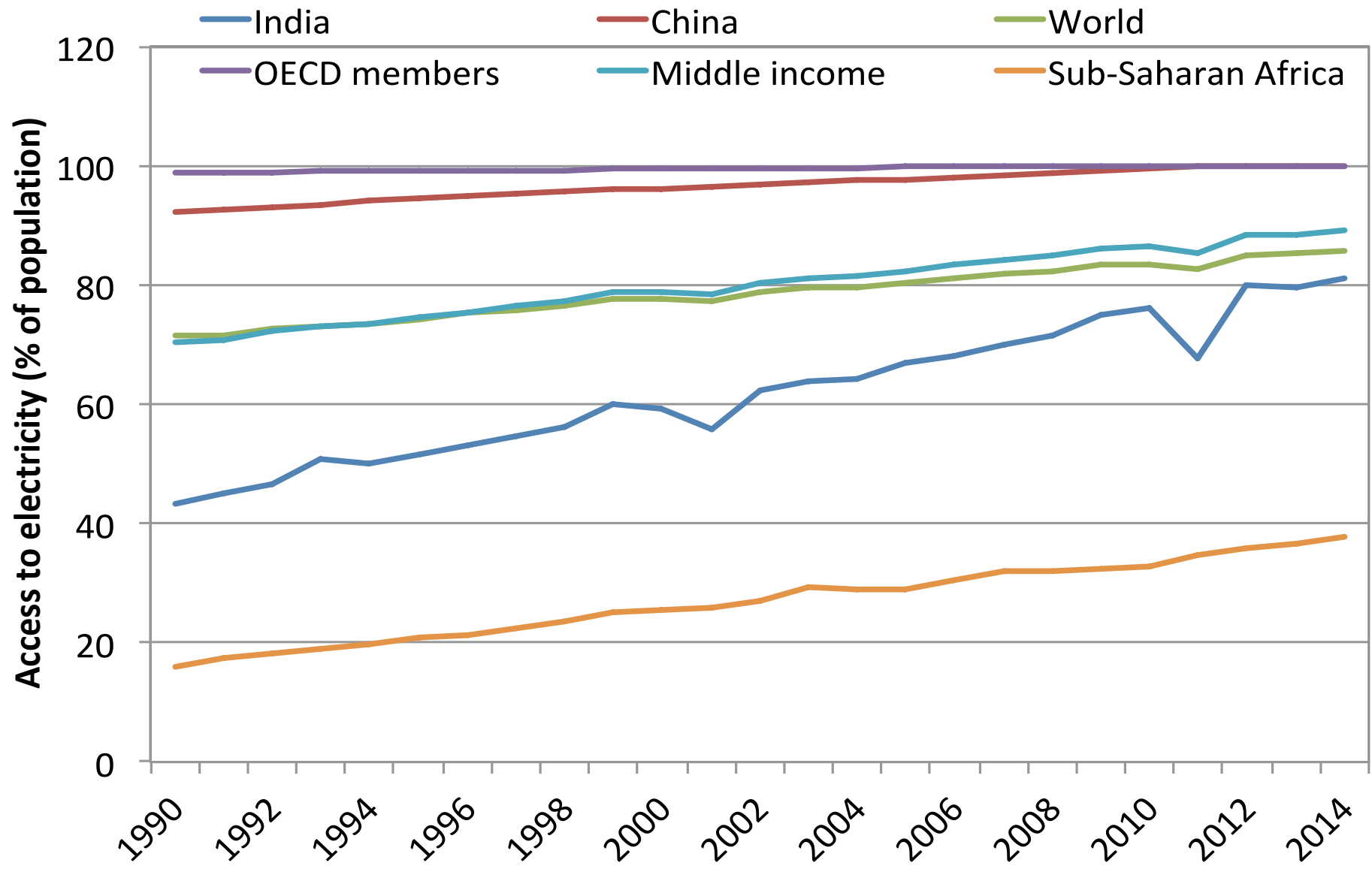
Energy and climate imperatives for developing countries

- Very ambitious NDC plans for most developing countries – both mitigation and adaptation
 - Energy key area of focus (low-carbon generation; energy efficiency)
- Major energy challenges (expansion, access, affordability)
- Requires deployment of suitable energy technologies - effective, fast and at scale
- Major deviation from business-as-usual: new/improved technologies and the need to simultaneously address climate and energy (and other developmental) imperatives

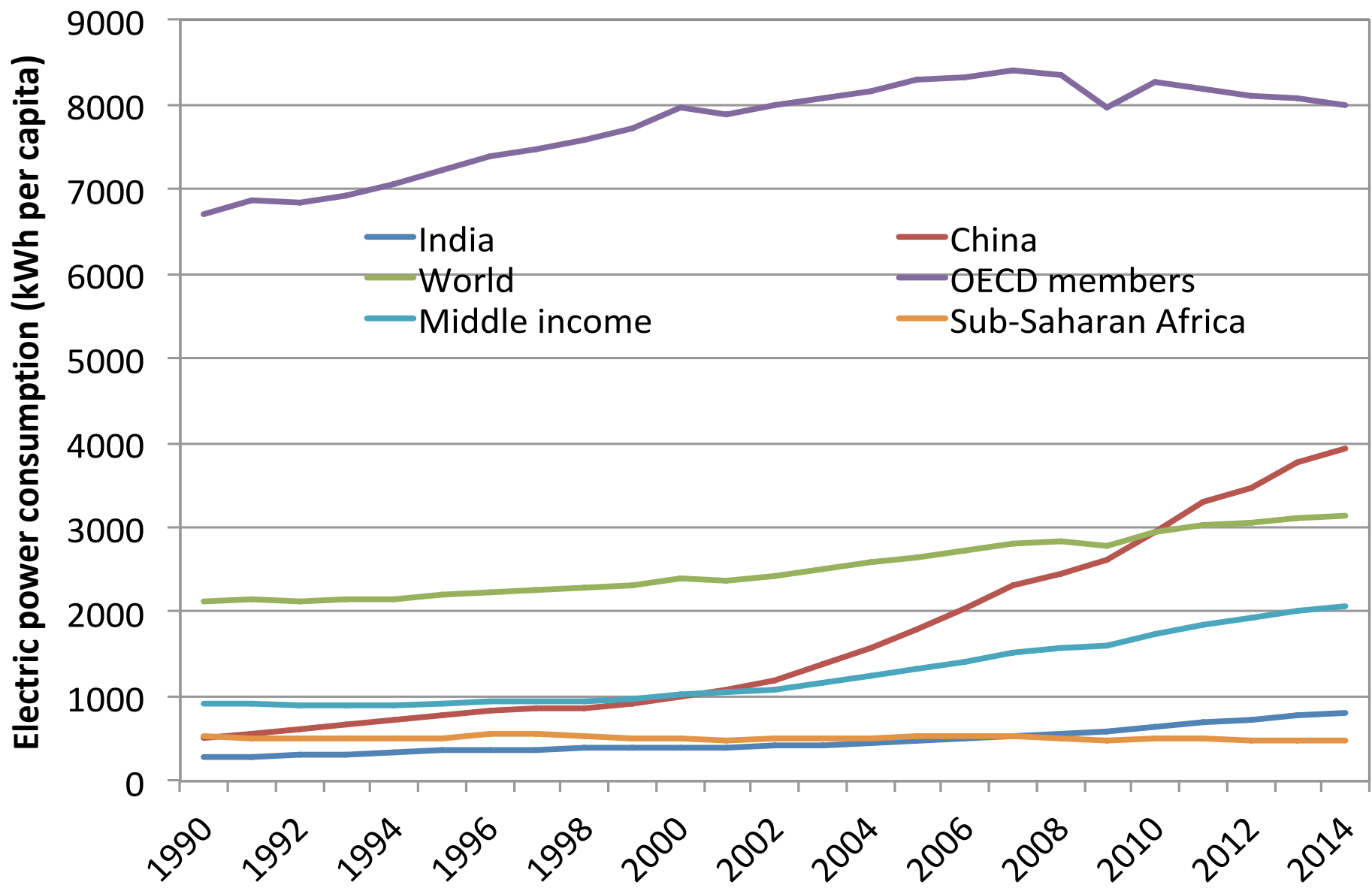
Complexities of the energy/climate technology transition

- Successful innovation and diffusion requires addressing not just technology (availability and operation) but also suitable economics, finance, markets/demand, and policy (i.e., supply, demand, and facilitation) – taking into account local context
- Local human, organizational, and institutional capabilities are critical (especially given long-term nature of challenges)

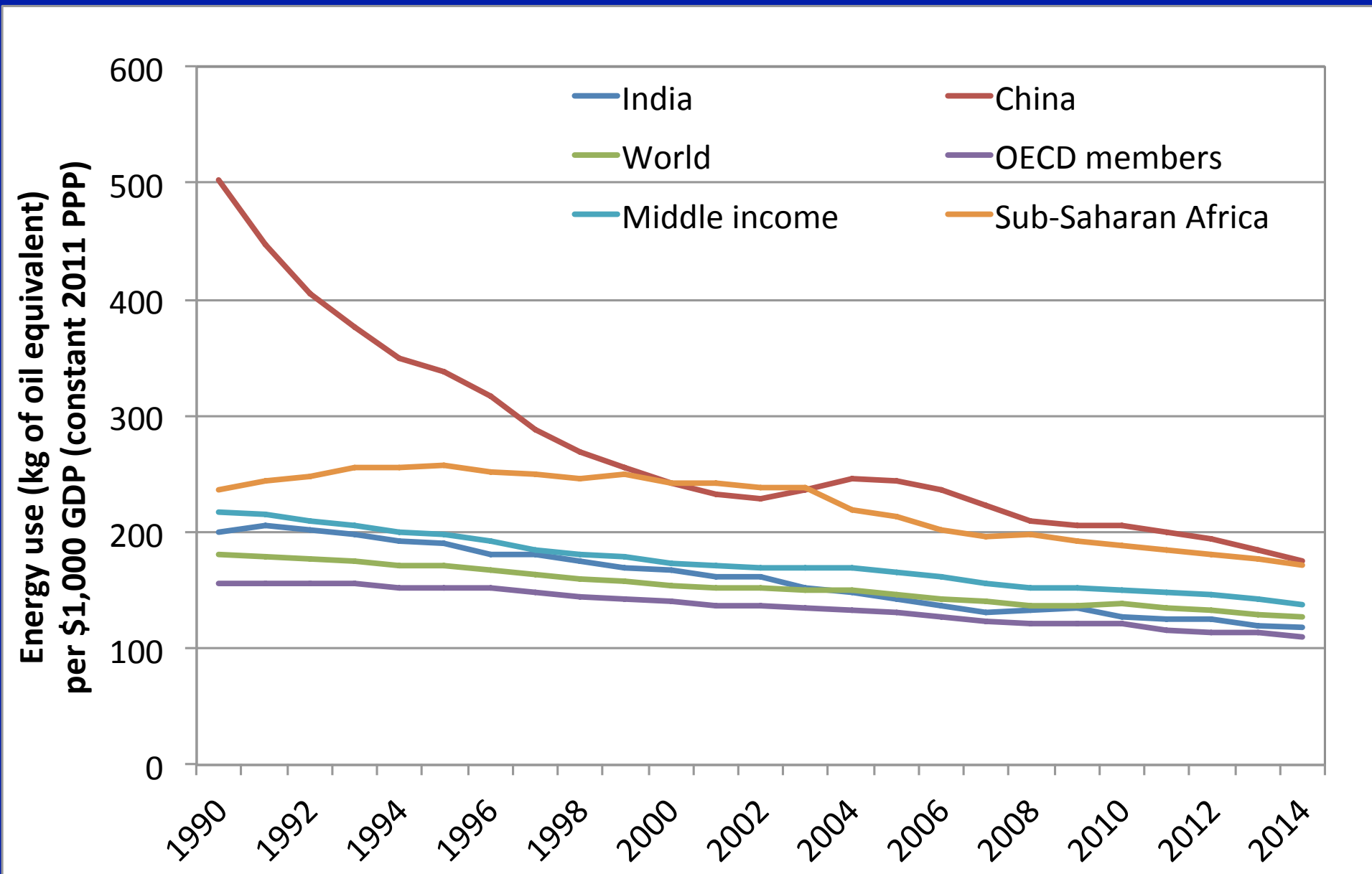
Low-carbon transition in the developing world



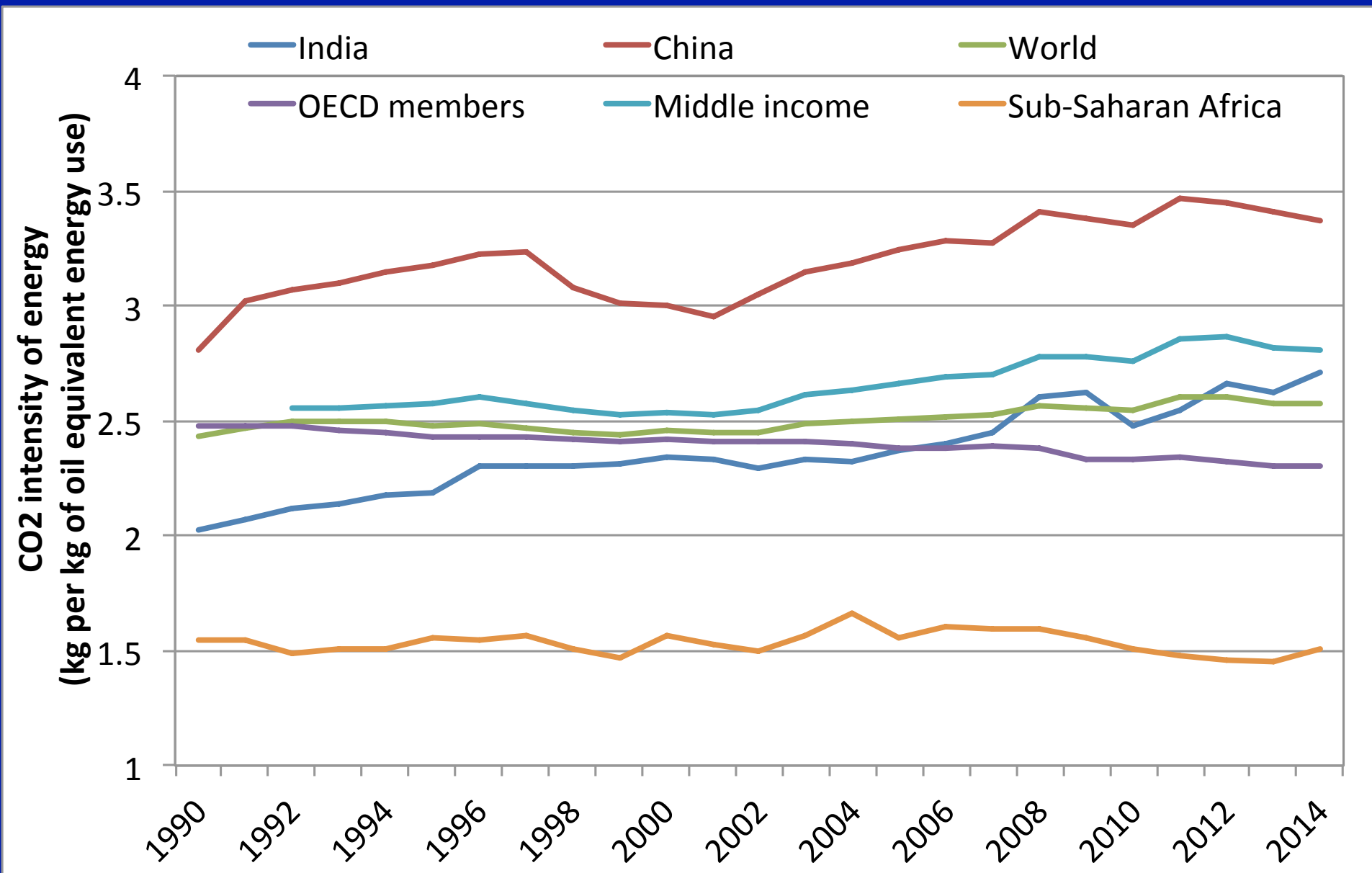
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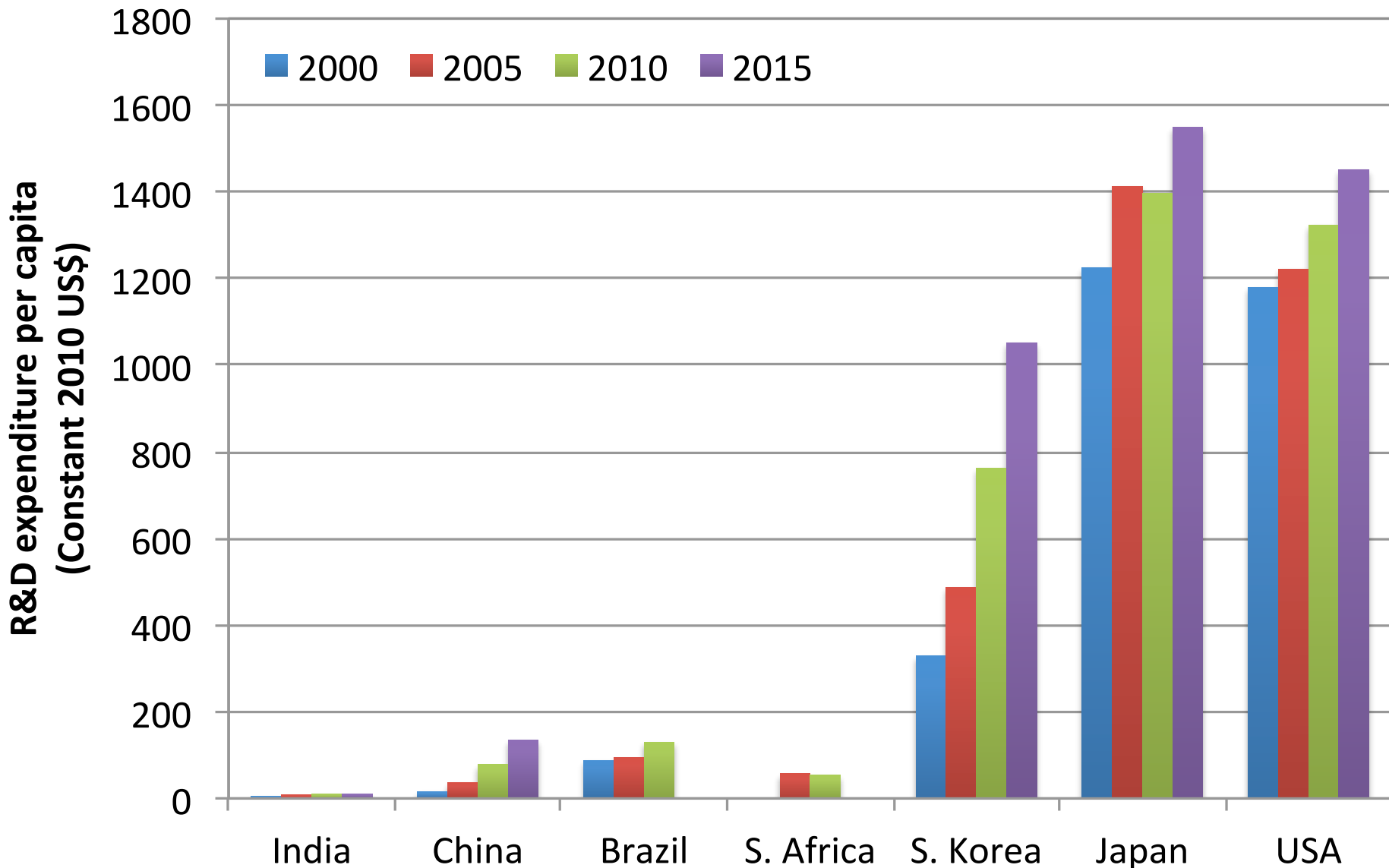
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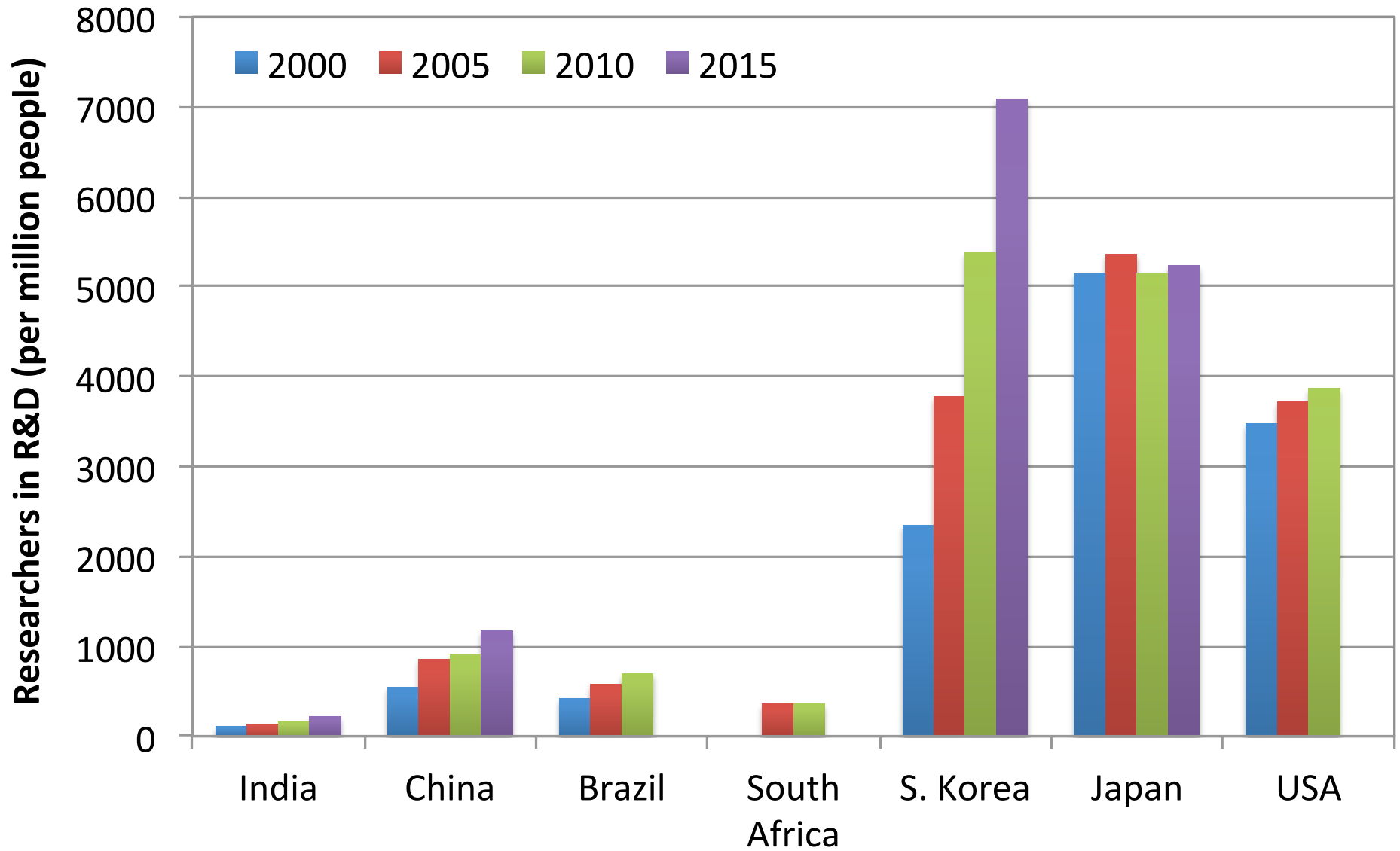
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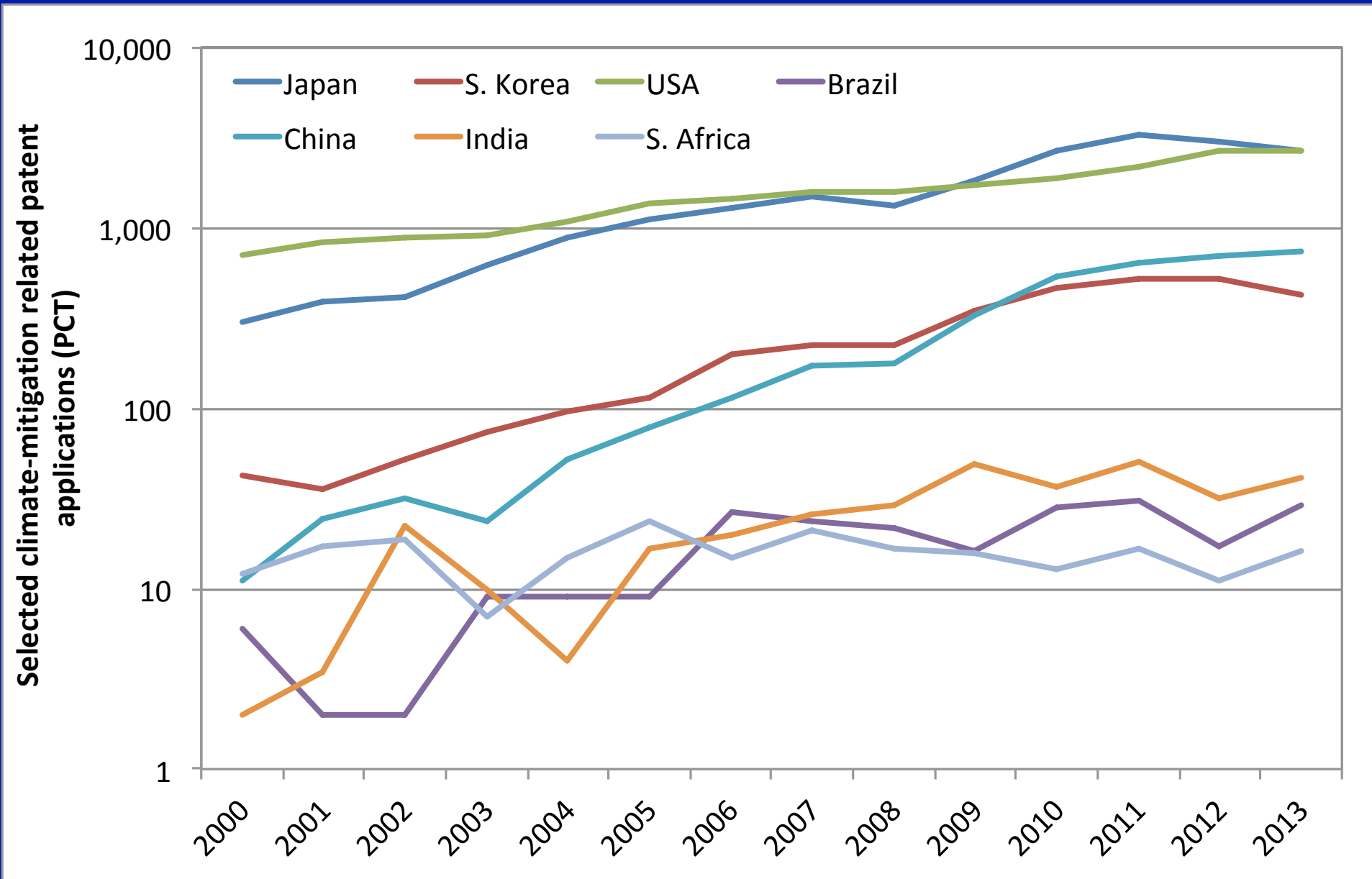
Low-carbon transition in the developing world



Low-carbon transition in the developing world



Low-carbon transition in the developing world



Facilitating a low-carbon transition In developing economies

The interconnected 4 Cs of emerging and developing economies

- [nature of developmental and climate] Challenges
 - Overall developmental objectives – and weights assigned to them – vary across countries
 - Nature and scale of climate challenges varies across countries
- [National] Context and Capabilities
 - Size and nature of economy, population, resources
 - Technical, financial, business, policy capabilities and actors
- Choices
 - Balance among climate and developmental objectives; prioritization among options; technology and implementation pathways

Key elements of effective energy/climate transition

- Framing the problem: clarifying objectives and strategies
- Designing implementation pathways: developing and choosing amongst options (technologies, business models, early market creation, scale up, transition pathways), designing across technology cycle
- Effective implementation of climate technologies: marshaling actors, networks, and resources relevant to specific technologies – and coordinating actions across stages of technology cycle
- Learning from experience: systematic assessment and analysis of experiences

Suitable domestic policies and international cooperation needed to support these activities and build relevant capabilities

International Cooperation – What and How?

Key functions of international cooperation:

- Facilitating (availability of) and access to suitable technologies* (new and existing) to address climate and energy challenges
 - Flows of technology; strengthening domestic R&D in developing countries; collaborative R&D* where needed
- Supporting effective deployment through provision of suitable finance, technical, and other support (best practices, lessons, etc.) – appropriate to specific technologies, stages of technology cycle and local context
 - flows of finance, knowledge, and services

Key functions of climate technology cooperation (contd):

- **Strengthening national capacity on multiple dimensions (actors, linkages, and institutions)**
 - Technical, business model development, design of policy and financial support instruments, human resources – multiple actors on both sides
 - Coordination between various activities and actors for various stages of tech cycle, e.g., CIC approach
 - Strategic approach to climate technology (prioritization and implementation pathways)

Examples of international cooperation

- **Planning and Strategy**
 - Technology Needs Assessment (UNEP) and INDC preparation (GIZ)
- **Research and Product Development**
 - US-India and US-China Clean Energy R&D Centers
 - Moser Baer technology partnership with Applied Materials for solar PV; assistance from TI for LED heat sink design and integration (India)
 - Mission Innovation (22 major economies)
- **Market creation/development**
 - CLASP and SEAD assistance for designing energy-efficient appliance labeling and standards program (India)
 - Performance risk guarantee for commercial energy-efficient equipment loans (India, with GEF)

Examples of international cooperation (contd.)

- **Cross-cutting:**
 - IEA Technology Collaboration Programs (inventions, pilot plants, demonstration projects, databases, and development of standards)
 - World Bank Climate Innovation Centers, supported by DFID, DANIDA, AusAID, Norway, Netherlands, World Bank (seed financing, policy interventions, and network linkages, as well as technical and business training)
 - UNFCCC Climate Technology Center and Network (technical assistance, access to information and knowledge, fostering collaboration among stakeholders)

Particular role of S-S cooperation:

- Developing, implementing, and assessing pathways – mutual learning
- Knowledge/experience sharing – effective practices/models in similar contexts
- (Strategic, implementation, and assessment) capacity building
- Exploring implementation synergies (e.g., cooperative R&D, coordination of implementation, pooled markets/risks, joint resource raising, shared organizational resources, common research and analysis programs) – globally and regionally
- Coordinating inputs for, and shaping/strengthening, intl technology cooperation within and outside UNFCCC

Broad commonality of background and interests very helpful

Thanks!!

Comments/Suggestions/Questions:

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