Meaning of "targets" for an emerging country : The 'bifurcation' challenge

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Developing Country Scenarios



US Secretary of State Hillary Clinton As told to CNN's Fareed Zakaria in an interview

http://business.rediff.com/report/2009/aug/11/do-not-follow-us-growth-model-clinton-tells-india.htm http://edition.cnn.com/CNN/Programs/fareed.zakaria.gps/

"Although India and China have every right to choose their own path of development, they should not follow the American model in their Endeavour to improve the condition of their citizens,"

"Our argument to China and India is: Yes, you have a right to develop and we want you to develop, and in fact, we admire your commitment to eradicating poverty and we want to help you do that. But you can't do it the way we did it, because you will suffer consequences that will undermine your development" ...



Alternate Development Perspectives







Integrated Modeling Framework







National Analysis: MARKAL & End-Use Models

Base Scenario: Growth of Economy and Population

From 2005-2050: Annual Economic Growth: 7.2% Annual Population Growth: 0.9% Absolute Growth in 2050 over 2005 Economy 23 times Population 1.56 times



Global Stabilization Target: 2°C



Mitigation Technology Options





Sustainability Approach: aligning climate and sustainable development actions

- Low Carbon Price
- Bottom-up/Demand-side actions
- Behavioural change
- Diverse Technology portfolio

Technology Co-operation Areas

- Transport Infrastructure Technologies
- 3R, Material Substitutes, Renewable Energy
- Process Technologies
- Urban Planning, Behavioral Changes





Dematerialization











Low Carbon Scenario: Ahmedabad





Co-benefits of Energy Choices

MDG 1: Eradicate extreme poverty and hunger, MDG 7: Environmental Sustainability





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<u>Co-benefits of South-Asia</u> Integrated Energy-Water Market

Benefit (Saving) Cumulative from 2010 to 2030		\$ Billion	% GDP
Energy	60 Exa Joule	321	0.87
CO ₂ Equiv.	5.1 Billion Ton	28	0.08
SO ₂	50 Million Ton	10	0.03
Total		359	0.98

Spill-over Benefits / Co-Benefits

- More Water for Food Production (MDG1)
- 16 GW additional Hydropower (MDG1&7)
- Flood control (MDG1&7)
- Lower energy prices would enhance competitiveness of regional industries (MDG1)

Primary Energy and Carbon Price



Energy Mix in 2050

Domestic Technology Industry



• Finance for Technology Transfer to developing countries

- > Private, ODA and Development Bank Financing
- > Global funding for cooperation on RD&D

• Developing Technology Market

- Coordinated Global and National Policies and Instruments
- > Global Carbon Price
- > National Environmental Standards
- National Energy Tax

Creating Technology Industry in developing countries

- > Project Partnerships
- > JV for R&D
- > JVs for Technology Production in Developing Countries



Coordinated Targets for Co-Benefits

Coordinated Targets to gain Multiple Dividends

- In developing countries, significant opportunities exist for gaining co-benefits
- Technology Assessment should consider all costs and benefits





