

# World Economic and Social Survey 2009

Promoting Development, Saving  
the Planet (forthcoming)

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# Conceptual Framework

- Not a pollution problem per se
- Promoting Development and protecting the planet can be done in tandem and in support of each-other
- We have lost over a decade of meaningful cooperation on climate change and this needs to change urgently and fundamentally
- We need a low-emissions, high-growth pathway for developing countries and stronger efforts by advanced countries to cut their emissions

# Climate Challenge

- For many key parameters, the climate is already moving beyond the patterns of natural variability within which our economy and society have developed and thrived. These parameters include global mean surface temperature, sea-level rise, ocean acidification, and extreme climatic events. There is a significant risk that many of the trends will accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts (IPCC)

# Take Science as Given

- Target for stabilizing GHG concentrations
  - Remain below a 2 degree target above pre-industrial levels
  - GHG Concentration range of 350-450ppm of CO2 eq
  - GHG reductions in the order of 50-80 percent over 1990 levels by 2050

# Understanding Growth

	1800	2000	Factor
<b>Population (billion)</b>	<b>1.0</b>	<b>6</b>	<b>x6</b>
<b>GDP PPP (trillion 1990 \$)</b>	<b>0.5</b>	<b>36</b>	<b>x72</b>
<b>Primary Energy (EJ)</b>	<b>13</b>	<b>440</b>	<b>x34</b>
<b>CO2 Emissions (GtC)</b>	<b>0.3</b>	<b>6.4</b>	<b>x21</b>

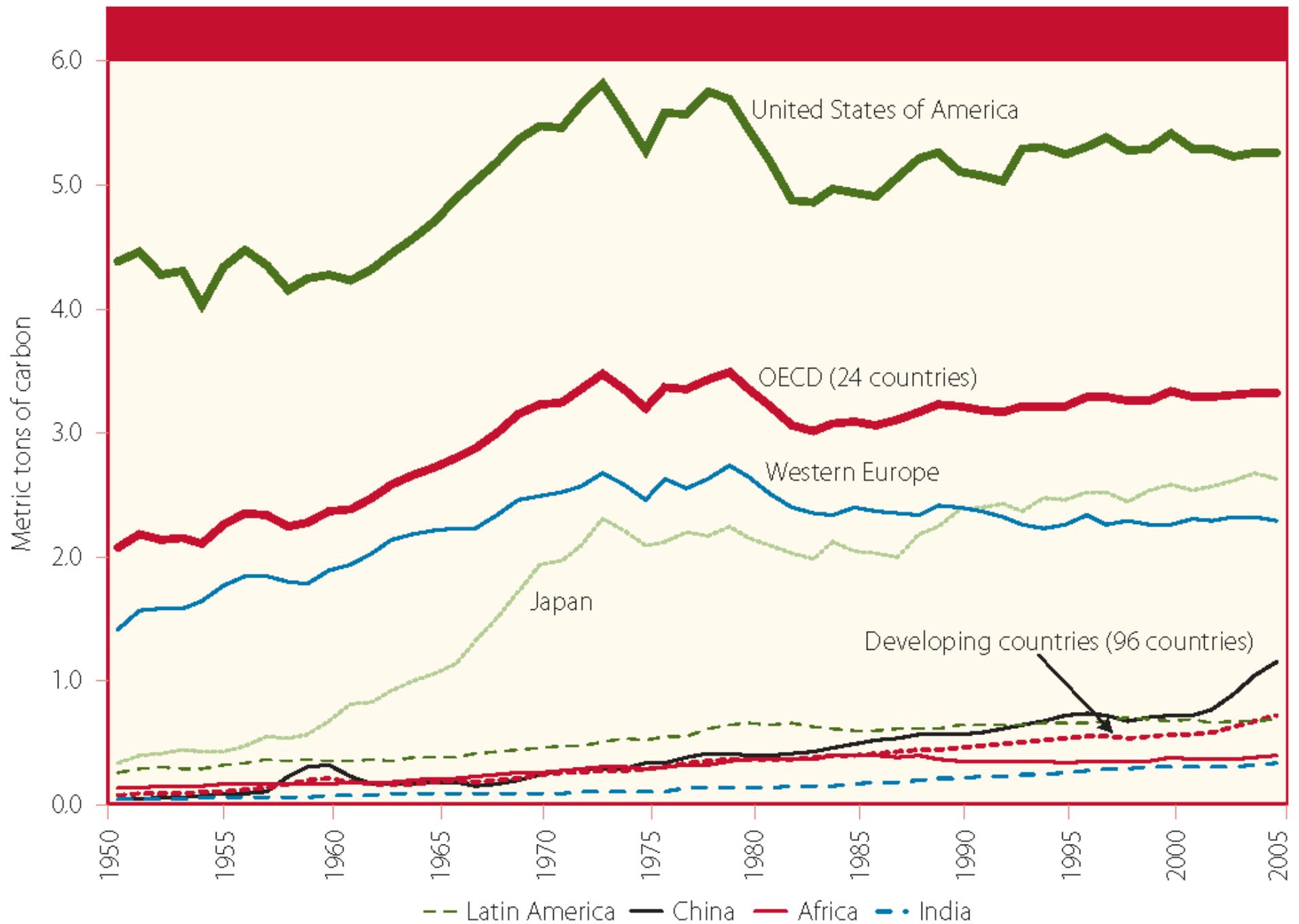
# Equity and Historic Responsibility

- Aggregate emissions vs per capita emissions
- Important to understand, where developing countries are coming from

**Per capita emissions in 2005 and share in cumulative emissions during 1840-2005, selected developed and developing countries and economies in transition**

	<i>Share of global cumulative metric tons of carbon emissions 1840-2005 (percentage)</i>	<i>Per capita emissions in 2005 (metric tons of carbon)</i>
<b>Developed countries</b>		
United States	27.8	5.3
France	2.7	1.7
Germany	6.7	2.6
United Kingdom	5.9	2.5
Japan	3.6	2.6
Canada	2.0	4.5
<b>Economies in transition</b>		
Poland	1.9	2.2
Russian Federation	8.0	2.9
<b>Developing countries</b>		
China	8.1	1.2
India	2.4	0.3

# Annual per capita emissions, selected regions, 1950-2005



# Involving Developing Countries

- Three different approaches
  - Voluntarily or through coercion by adopting emission reduction targets
  - Conditional on the availability of finance and technology from developed countries (incremental action on project–by-project basis)
  - Jointly adopting both climate and development targets i.e. reconfigure the development trajectory

# A Differentiated Approach

- Developing Countries – public investment, effective industrial policies managed by a developmental state
- Developed countries – carbon markets, taxes and regulation

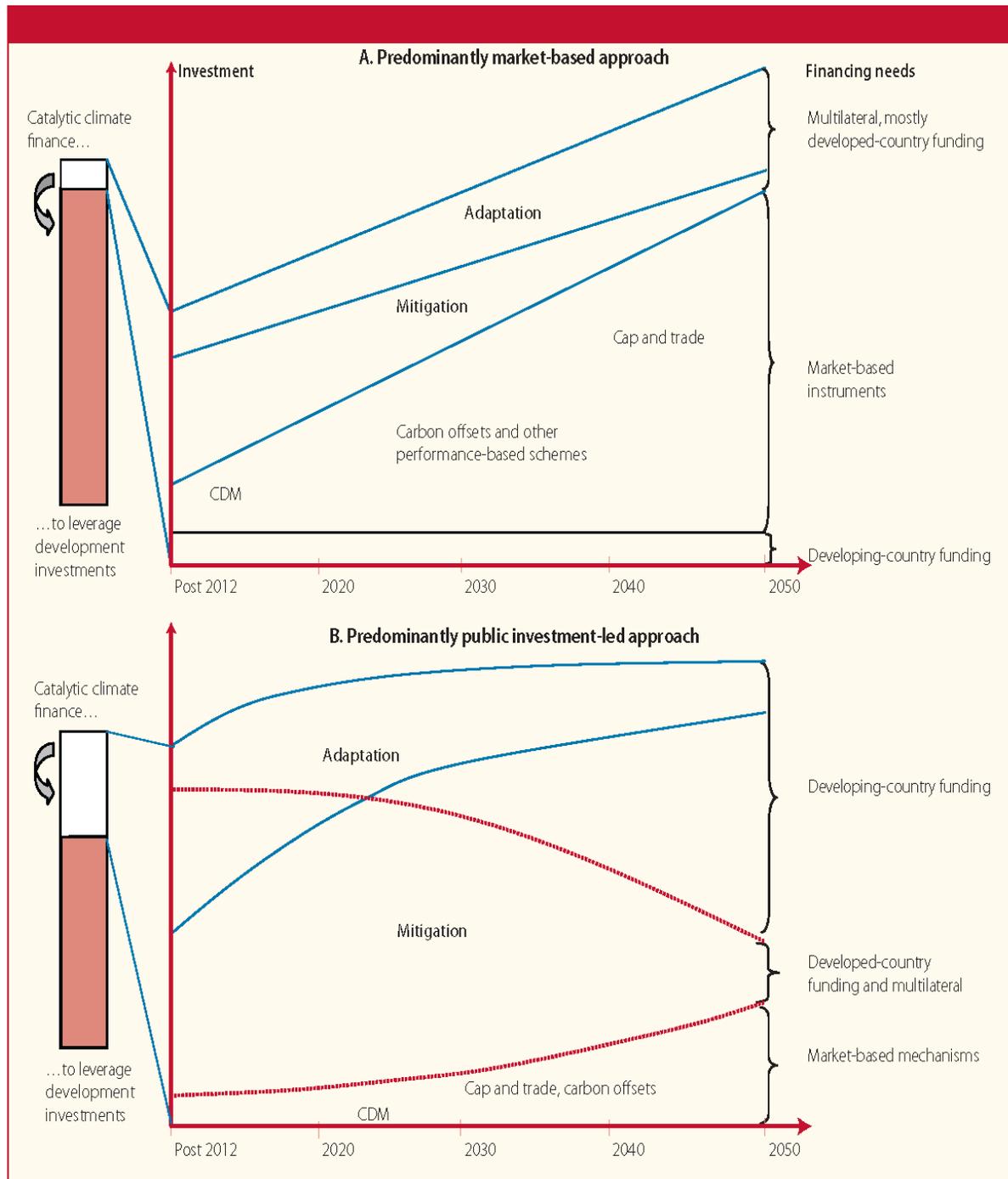
# Overall Development Goals

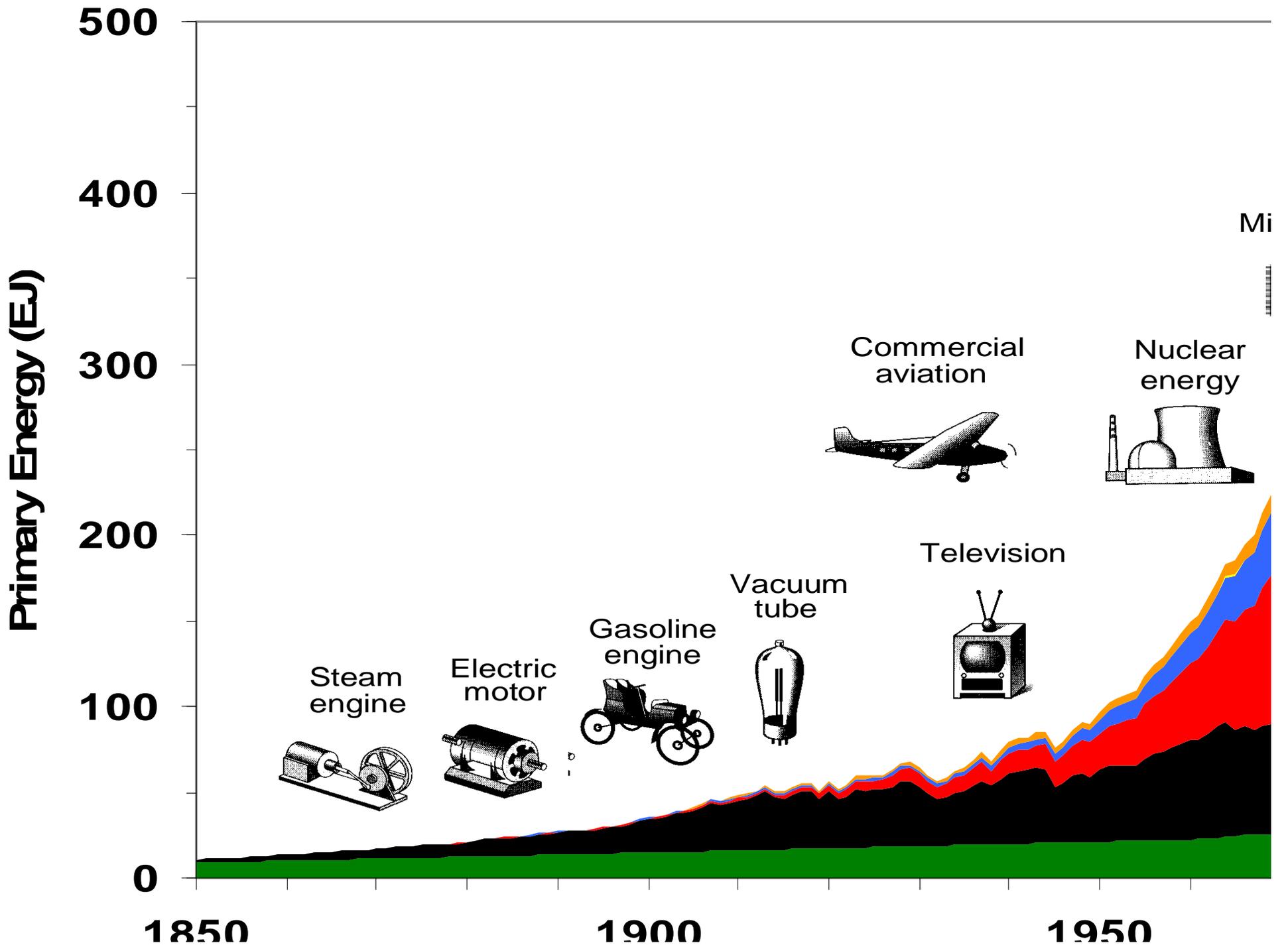
- Catch-up growth in developing countries
- Full employment in advanced economies

# Investment Driven vs Carbon Markets

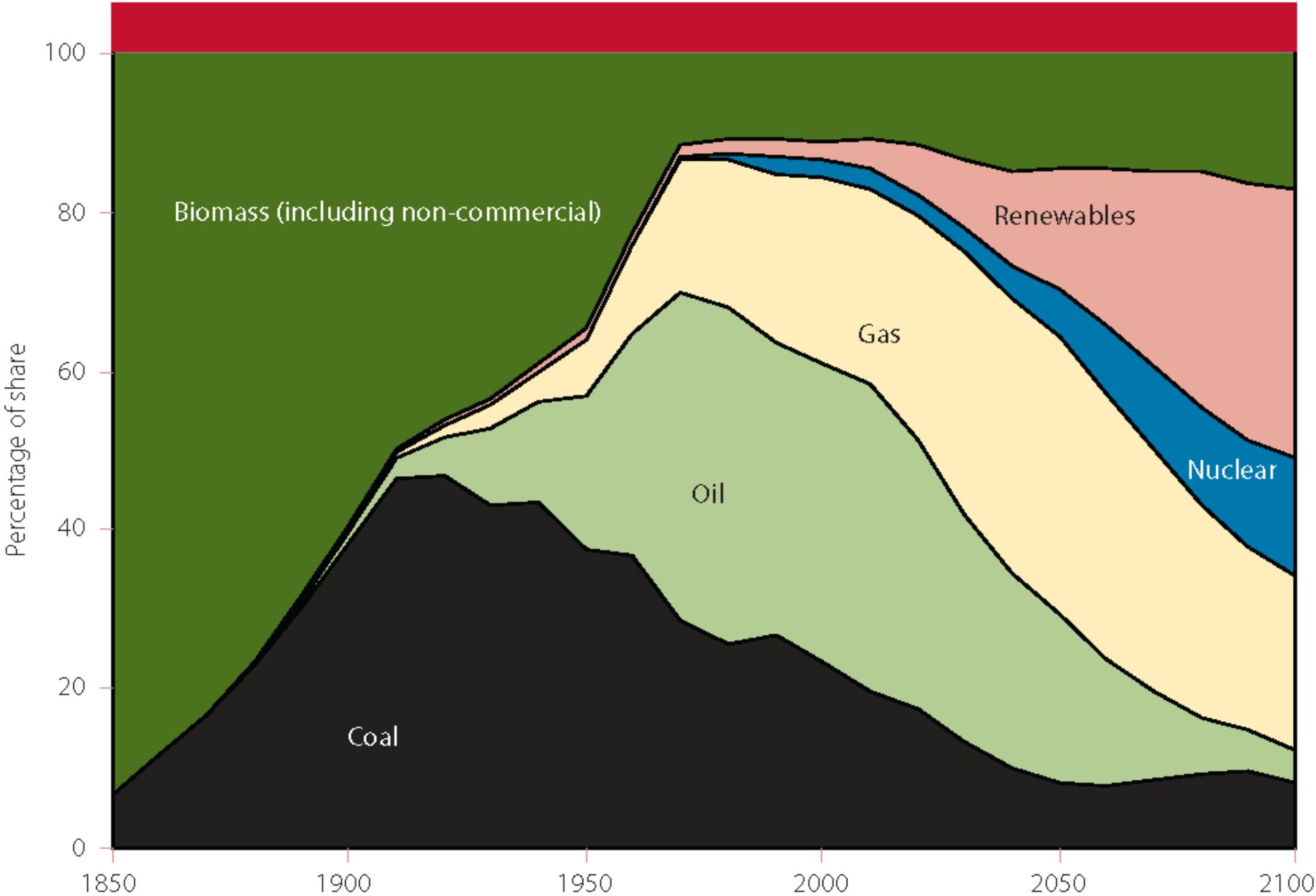
- The carbon market strategy is silent with regard to the development agenda
- We need an investment driven approach that triggers catch-up growth and crowds in private investment along a new development path

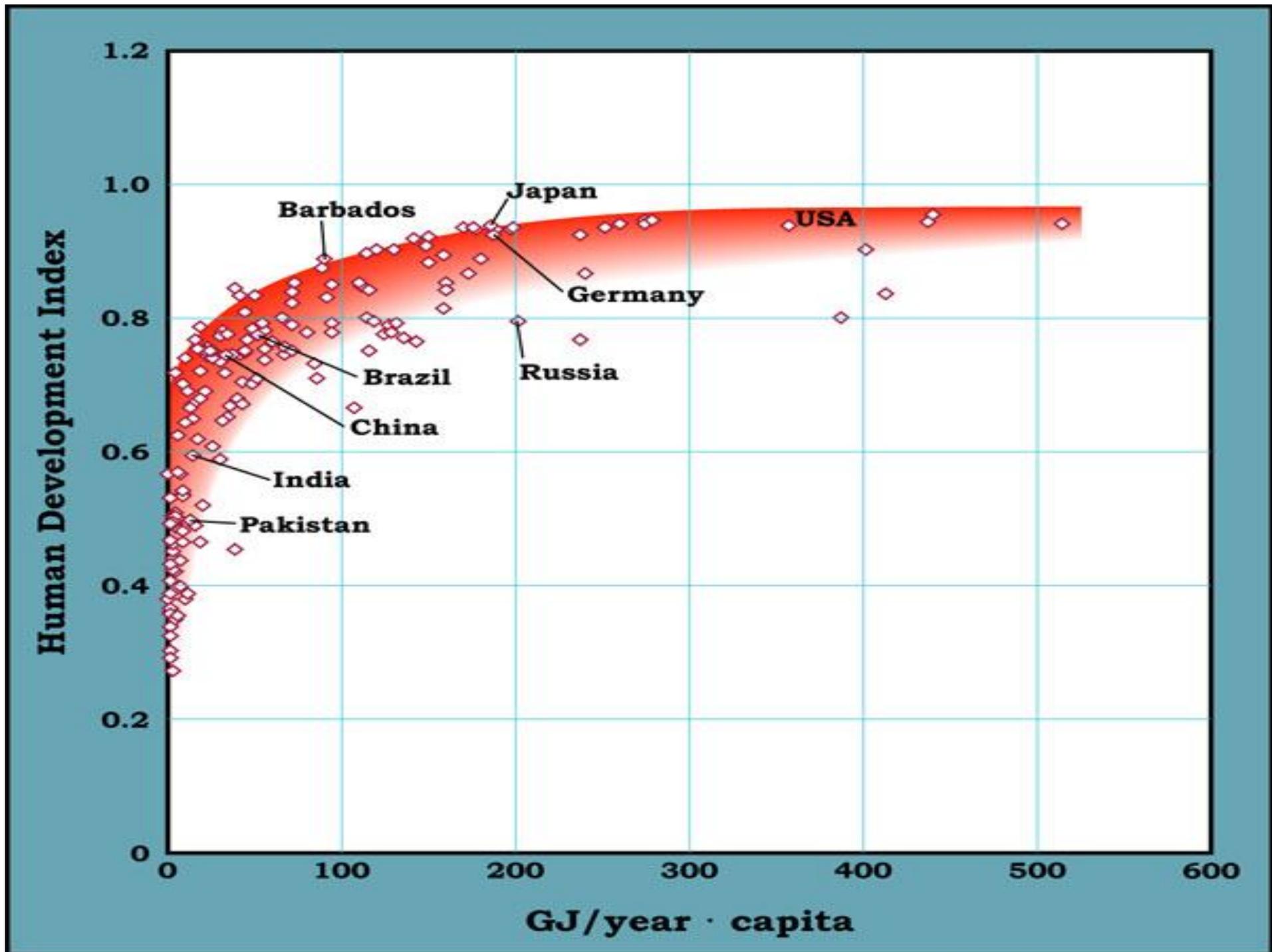
## Strategic investment and financing mechanisms for developing countries





Historical evolution of, and a possible future for, the global energy system, in the context of the relative shares of the most important energy sources, 1850-2100





# Energy Consumption

- In OECD countries, the average per capita consumption varies between 100 and 300 kWh per day, divided roughly equally between household and commercial consumption.
- In the vast majority of developing countries, the average per capita consumption is under 35 kWh per day.

# What could be done?

- What kind of strategy would result in lowering the unit costs of renewable energy services most rapidly, and in particular to bring them down to a level that would render such services affordable by the vast majority of the populations in developing countries?

# Technology development and CO<sub>2</sub> mitigation for power generation

