

# G8 Climate Change Action Plan and the Investment Framework

## The Technology and Financing Context and Issues

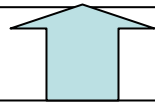
Montreal, CoP 11

UK/IEA Side- event

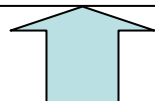
December 5<sup>th</sup>, 2005

# G8 Requested Role of the World Bank

**Support the G8 Dialogue Initiative**  
**Objective:** To help build a consensus amongst OECD countries and developing countries on the policies, instruments and strategy for long term climate management (mitigation and adaptation) in the Framework of the UN Climate Convention



**Develop and Investment Framework**  
**Objective:** to greatly accelerate investment immediately in energy efficiency and clean energy and sustainable development



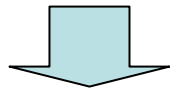
**Increase Bank Financial Assistance**  
**Objective:** to increase Bank lending for low carbon climate resilient economic development

# G8 Climate Change Initiative

## Milestone Events Post Gleneagles

**Objective: to raise the profile of climate change globally and to expand the participation of key countries in long term climate management.**

- Meetings with industry (energy and reinsurance), IEA and IFIs in Sept 2005
- Climate change discussed at Annual Meetings of the IMF and World Bank in Sept 2005 (Development Committee Communique)
- Investment Framework design process launched by Messrs. Wolfowitz and Benn with G8 +5 Finance Ministers September 24<sup>th</sup>, IMF/Bank Annual Meetings, Washington
- Nov 1 meeting in London of Energy and Environment ministers launching dialogue on long term climate change management.



**Spring Meetings of IMF/World Bank – Investment Framework concept presented for review and ongoing implementation**

# Bank-wide Working Groups

- Technology
  - Prospective low carbon technologies and screening tools developed with IEA
  - Approaches to boost Low-Carbon Technology R&D and commercialization
- Country Dialogue
  - Obtaining guidance from +5 countries on perspectives and needs for analysis and financing
  - Opening dialogue with climate vulnerable poorest countries on climate risk and adaptation needs
- Financing
  - Inventorying financial products in Bank Group and IFIs and improve information and access to these products
  - Explore opportunities for better utilization of risk-bearing capacity of Bank Group and define needs for new products and financing initiatives
- Adaptation
  - Defining climate risk more broadly and expanding use of screening tools
  - Integrating climate risk assessment and adaptation into development planning and IFI assistance

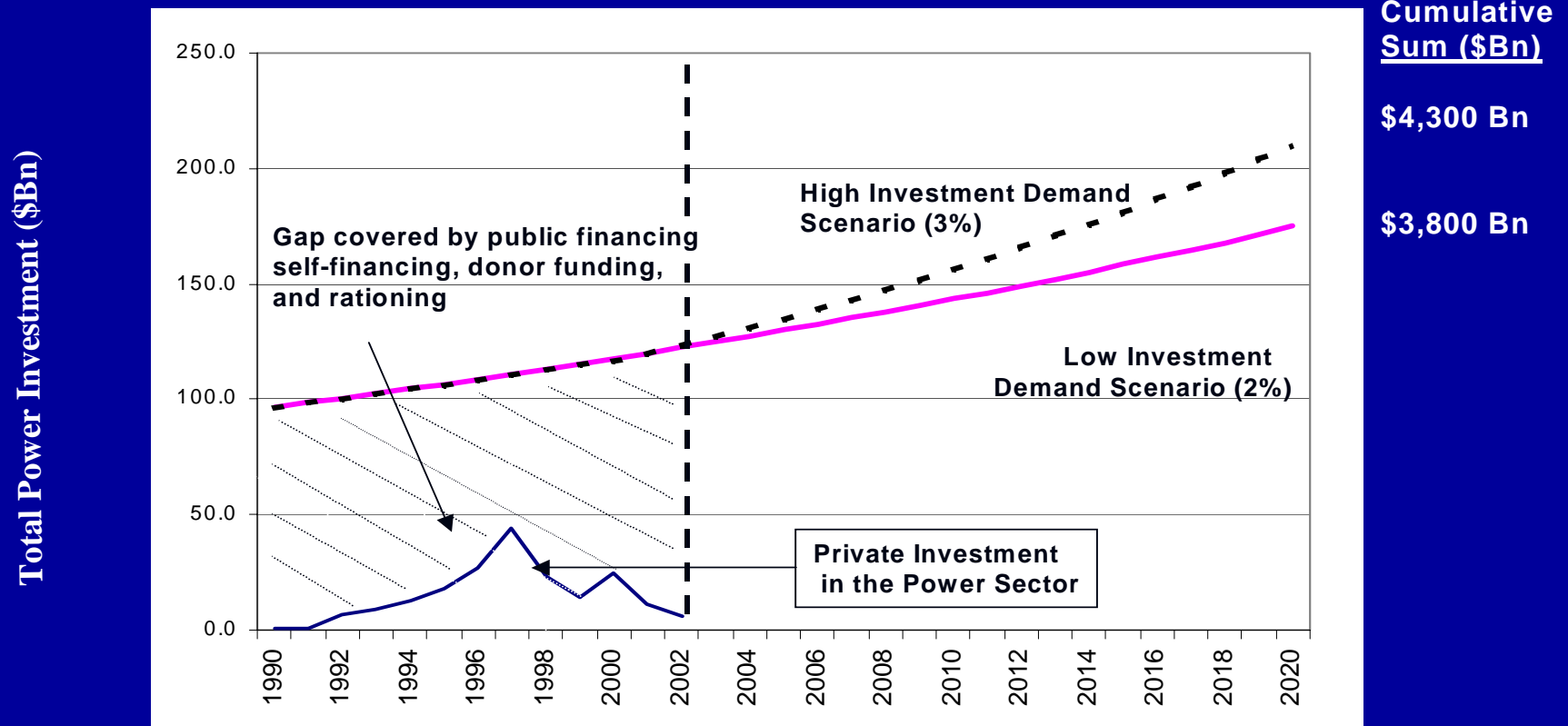
# Investment Framework Initiative

## Major Challenges – No single answer!

- Decisions on energy, urban and transport infrastructure over next 25 years will lock in the carbon intensity of the global economy for most of the rest of the century
- Bank is a leader in renewable energy – exceeding its global target for expanded RE lending
- Coal is Key – renewables and energy efficiency are important
  - But there is no silver bullet!
  - Coal power is 25% of global CO<sub>2</sub> emissions
  - China currently building coal power plants at rate of about 1000MW per week. India and China will comprise >40% of installed coal power capacity by 2030
  - Coal power rehabilitation, highest efficiency clean coal power are crucial near term initiatives
  - Coal power emissions capture and storage the most important medium term technology for development
- Improvements in energy efficiency are critical in every activity
- All Hydropower is an important and underdeveloped renewable energy source: large Hydro and Rehabilitation of existing assets can no longer be ignored

# Investment - a large and growing gap

## Financing Required for the Power Sector In Emerging Markets 1990-2020



Source: World Bank, IEA, Deloitte Touche Tohmatsu Emerging Markets Group

# Investment Framework Initiative

## Major Challenges – Mobilizing Foreign Direct Investment

- Private capital is available on a sufficient scale to meet the investment needs of the energy sector but:
    - OECD private investment in energy sector assets in the developing countries declined from \$40bn in 1997 to below \$10bn in 2002
    - Political risk insurance underwriting for major project financing has declined by 60-80% since 2000
- 50% of OECD power plant fleet likely to be replaced in next 15-20 years. OECD markets will be the most attractive use of project finance**
- Private Banks and Energy Technology suppliers tell us that they need:
    - A larger pipeline of good quality investments
    - A transparent and predictable regulatory environment with good debt service history
    - Means of transferring project risk in developing countries to the broader market (securitization, bond issues)
    - Initial grant financing to support commercialization of leading edge high efficiency coal technology (and other technology)
    - Better, faster political risk insurance
    - Sustained commitment to R&D in high efficiency and zero carbon coal options (IGCC, CCS)

# Investment Framework Initiative

## Major Challenges

### Capturing Synergy – Ensuring Continuity

- Great opportunity to create synergy between and within public and private sources of finance for low carbon infrastructure and adaptation.
  - GEF and Carbon Finance,
  - Export Credit and IFIs
  - IFIs product line largely uncoordinated and under-leveraged.
  - Under-utilized risk-bearing capacity
- Carbon finance is the most important new and additional source of development finance, potentially exceeding one billion per year over the next 2-3 years, \$50-120 billion/year long term
  - but growth constrained by deep uncertainty over continuity in carbon trade beyond Kyoto.

# Bank Assistance to Plus 5 Countries in the G8 Dialogue

New and expanded dialogue on lending and technical assistance is substantial

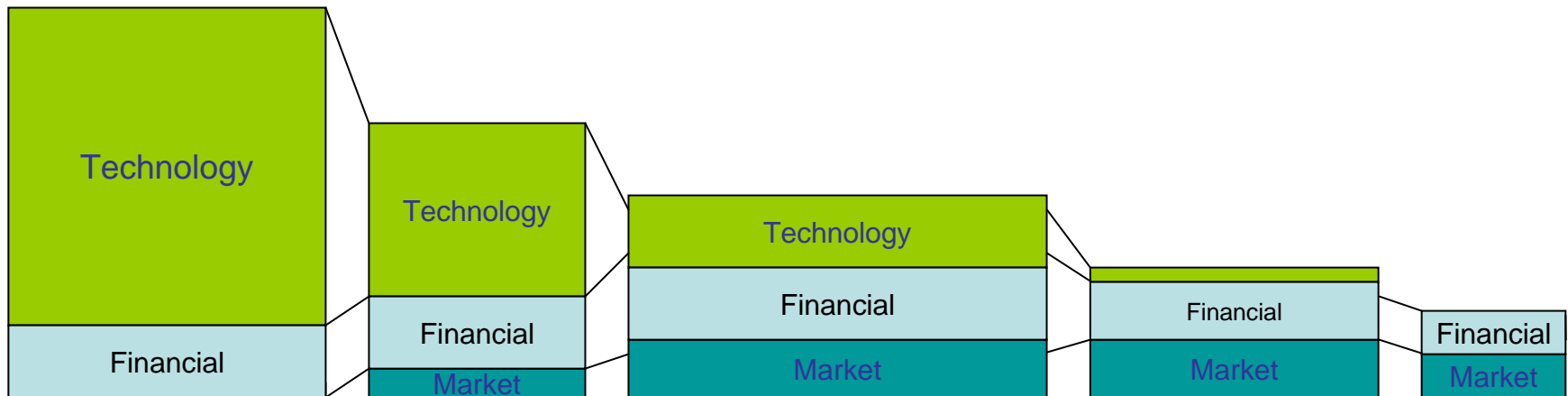
- **China:**
  - sustainable energy planning for 15 year horizon; proposed lending for energy efficiency (\$200mm); second RE project (\$87 mm); coal thermal efficiency and IGCC/CCS pilot (GEF \$19mm)
- **India:**
  - Proposed 30,000MW coal power rehabilitation and efficiency improvement (IBRD/GEF/CF); expanded support for hydropower development; small-scale enterprise EE under CDM.
- **Mexico:**
  - 100MW+ Wind project (CF); partnership with Bank to design program to develop Mexico's 20,000 MW RE potential over next 15 years.
- **Brazil:**
  - Collaboration planned on Bio-diesel; prospects of new hydropower development program; helping Brazil gain export markets for ethanol

# Innovation Chain

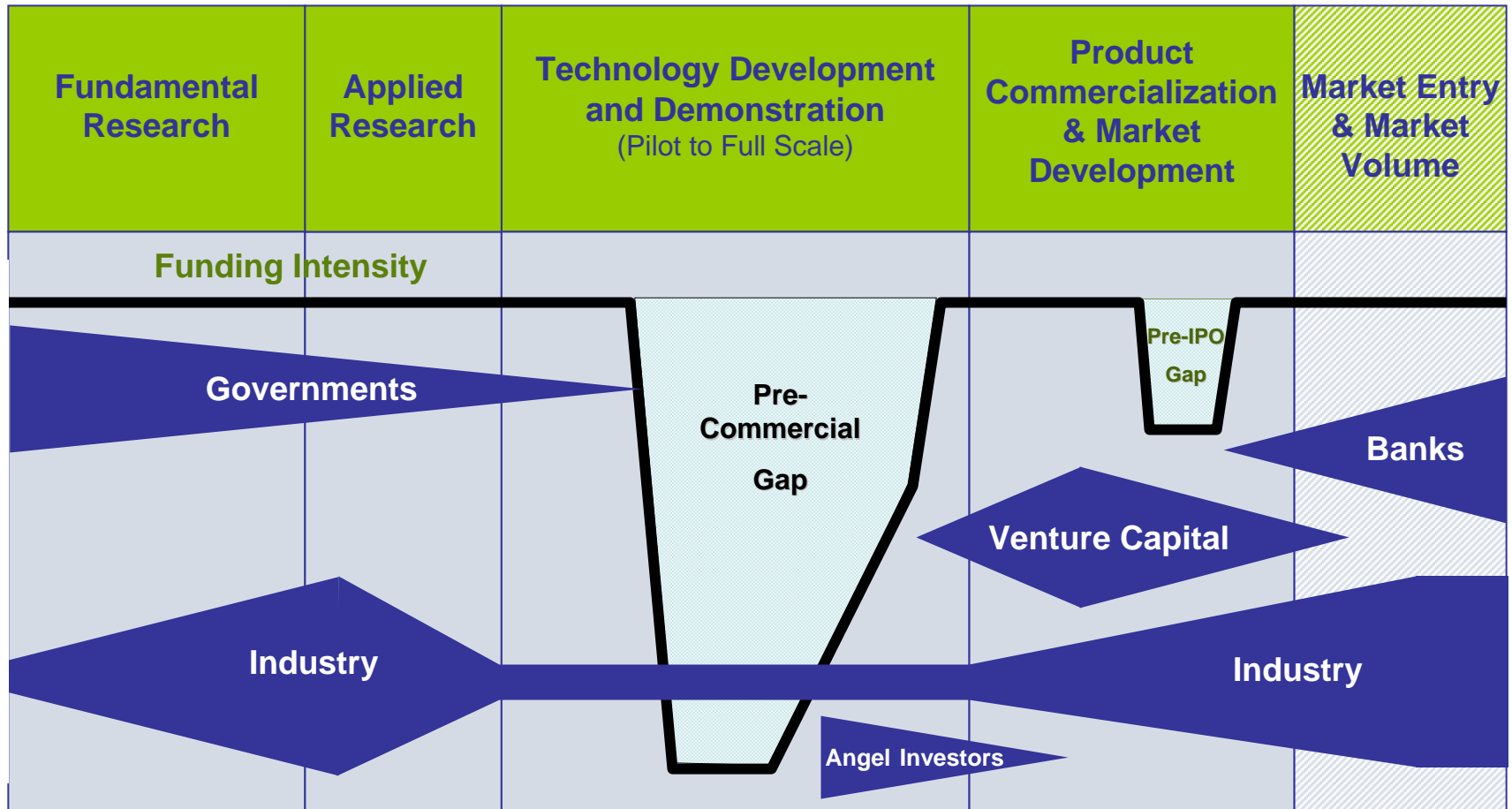
## Stages of Technology Development



## Risk Profile



# Funding Gaps



← Public and Private Sector Research →

12 130 10  
 # of energy & environment deals by stage-seed, expansion & mezzanine.  
 From 2000 – Q3 2004

Source: MacDonald and Associates, Oct 2004

# Catalyzing Innovation Upstream and Downstream

- New thinking is needed to accelerate creative thinking and innovation in low-carbon technology
- Options:
  - Sponsor and provide seed financing for global learning networks around the most promising technologies?
  - Redefining “contributions” to low carbon development to capture promising ideas?
  - Initiate “Chairs” in Universities and Research Institutes in Plus 5 countries on low carbon technologies and growth paths??