



Powering a Sustainable Future

An agenda for concerted action

WBCSD Council | Liaison Delegates Meeting
New York 23-27 October 2006



World Business Council for Sustainable Development



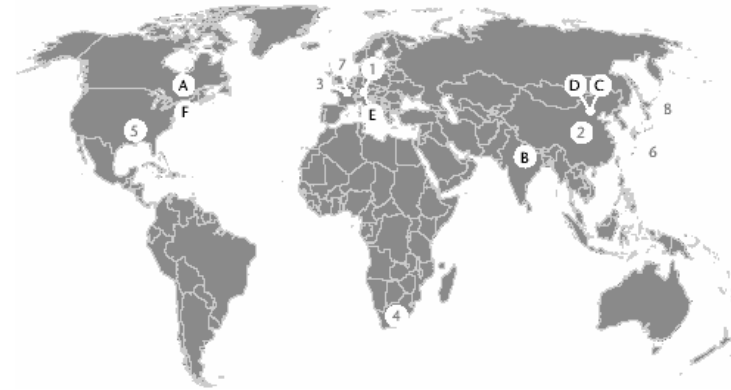
The key players



The Electricity Utilities Sector Project



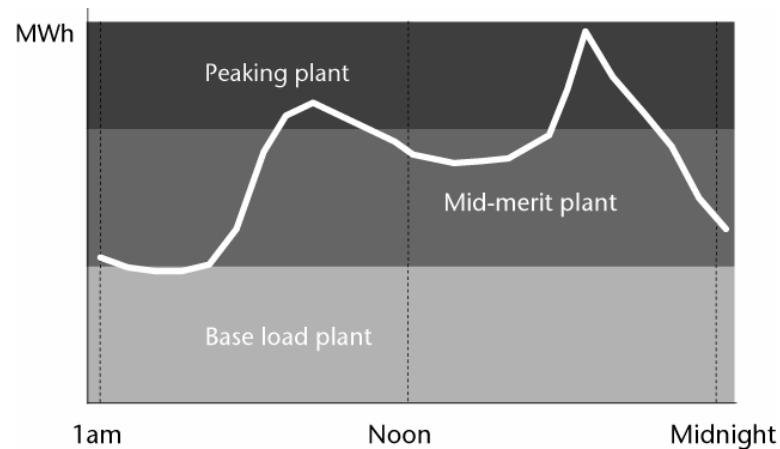
- Member companies represent 10% of global generating capacity
- CEO level commitment
- Objectives
 - ✓ Develop a global industry perspective on how the sector as a whole should address its sustainability challenge
 - ✓ Communicate technology options, dilemmas and solutions



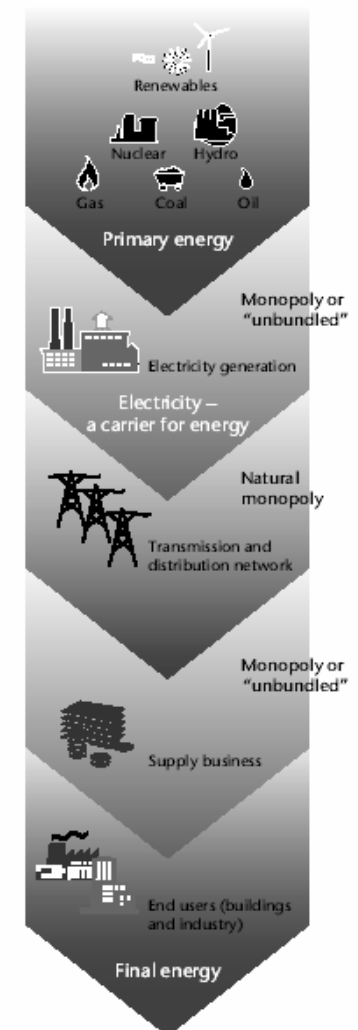
- Stakeholder engagement as a key ingredient of our work
- Independent Assurance Group of international experts

Key features of the power sector

- Electricity is a flexible carrier that can be generated from any resource but cannot easily be stored
- Long time horizons



- Natural monopoly element; liberalization has had mixed results
- Despite liberalization, continued government involvement is required



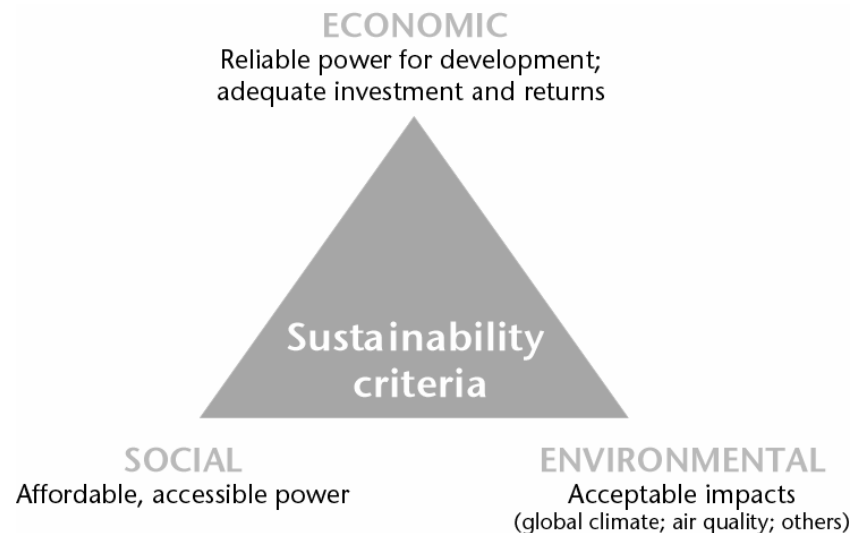


The global energy challenge

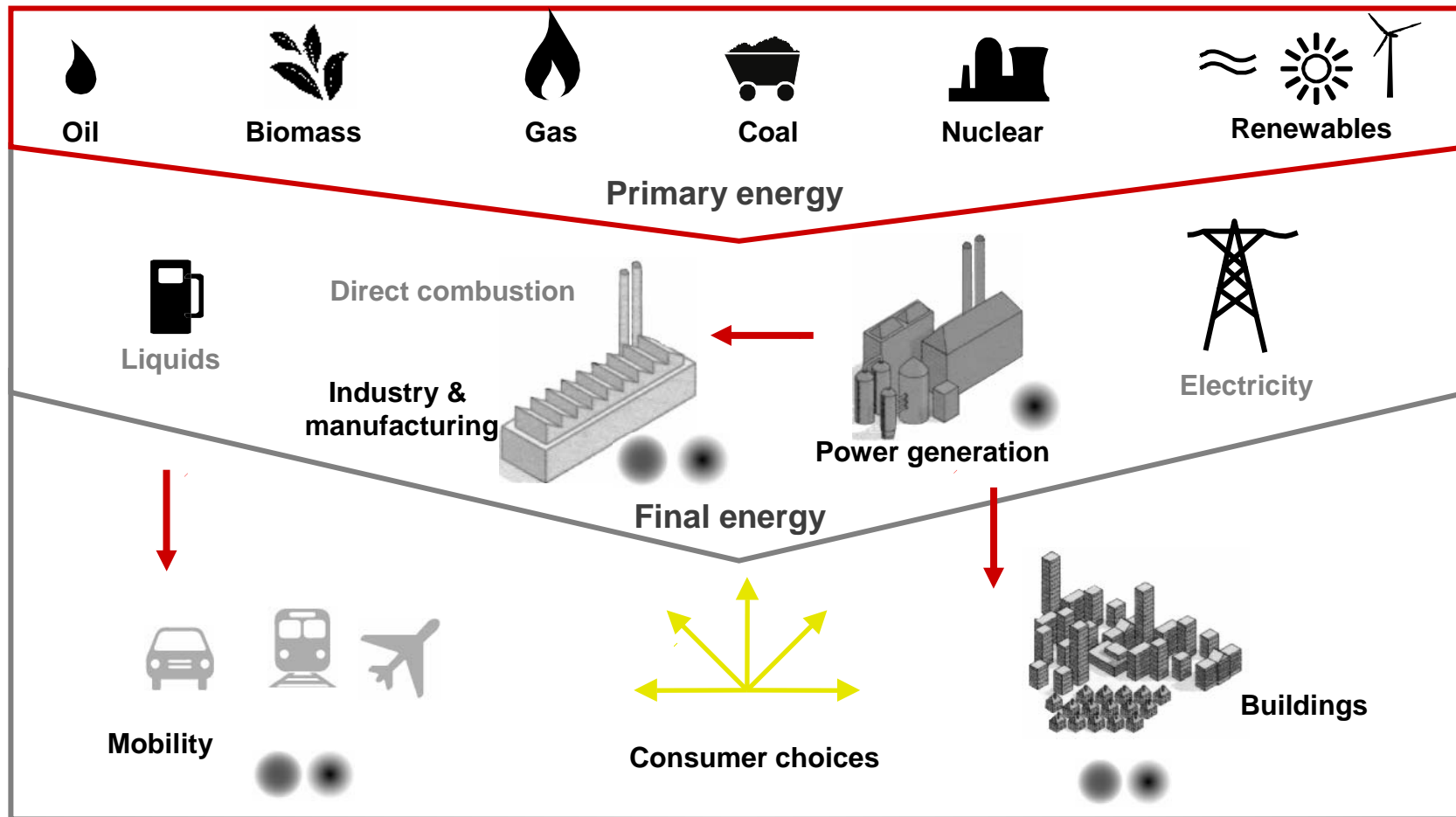





- The world's appetite for energy may increase by more than 50% by 2030, requiring huge investments
- Energy security concerns are on the rise

- Carbon emissions from growing use of fossil fuels are the main driver of climate change
- In 2002, more than 2 billion people still relied on biomass for cooking and heating



The energy sector

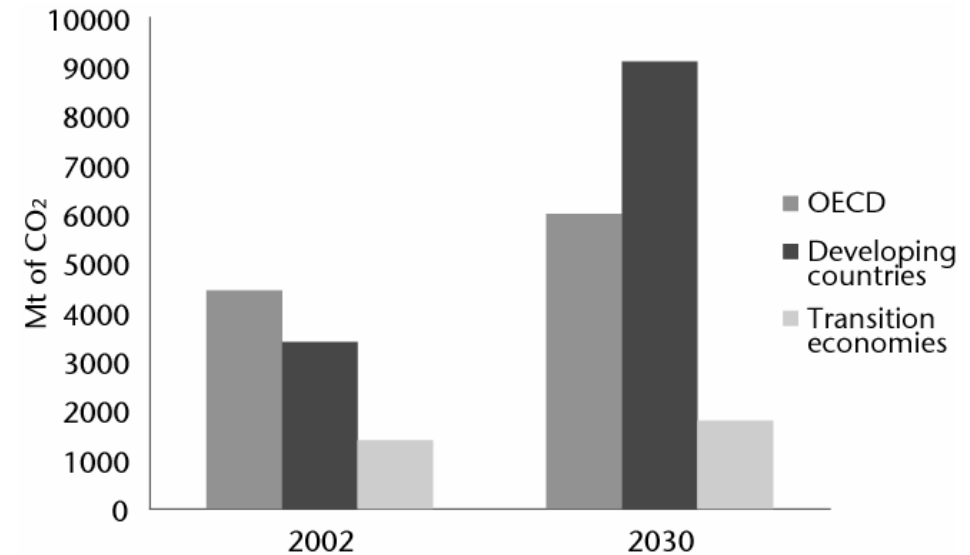


 Major energy users  Energy
 Major GHG emitters



The role of electricity

- Electricity demand is growing faster than that for other energy carriers
- Very capital-intensive: power sector will take lion share of energy investments
- Electrification plays a crucial part in reducing poverty levels
- A flexible energy carrier: can balance the world's energy mix



- *Power sector GHG emissions are 40% of those from energy sector and projected to double*

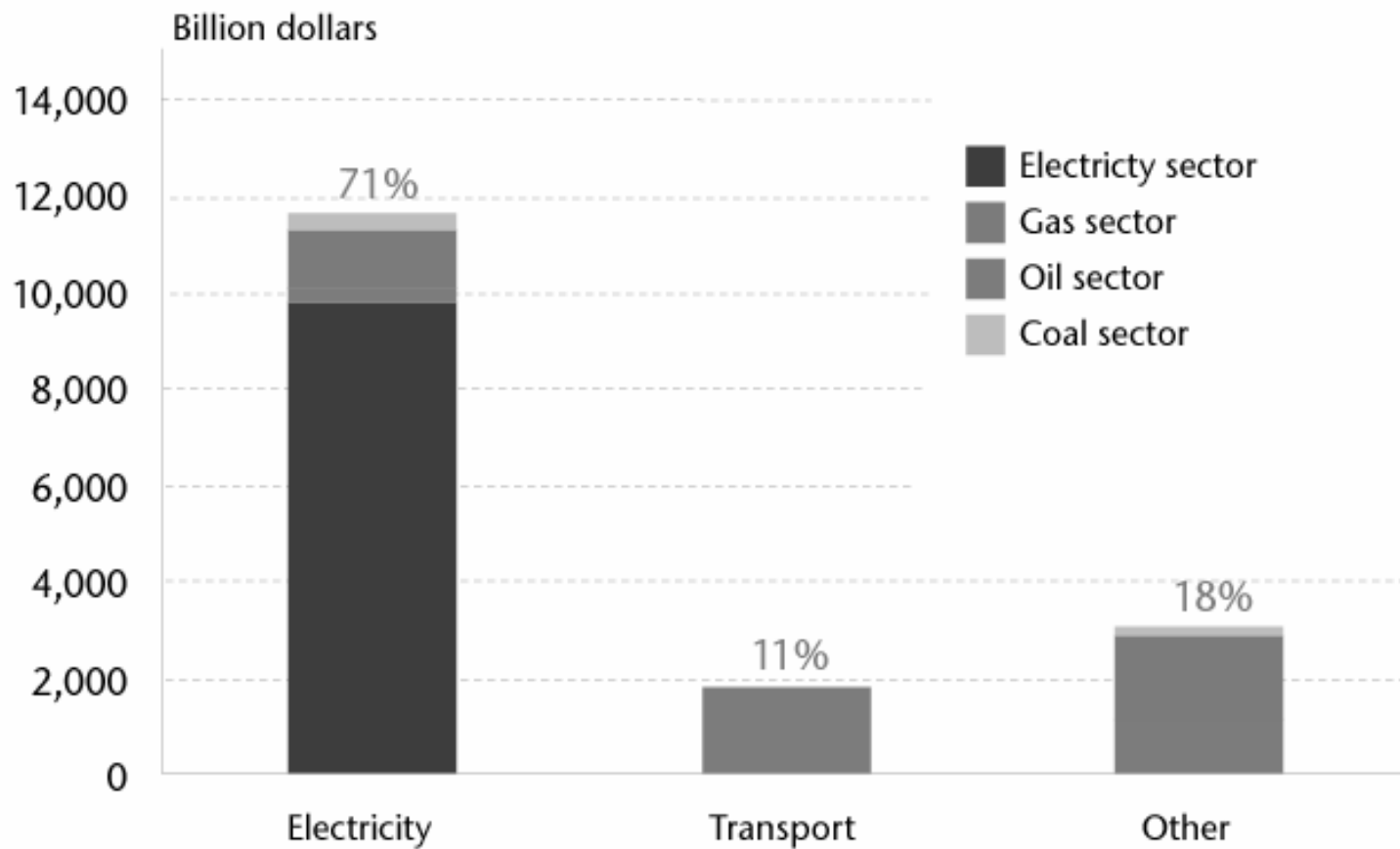


To power a sustainable future...

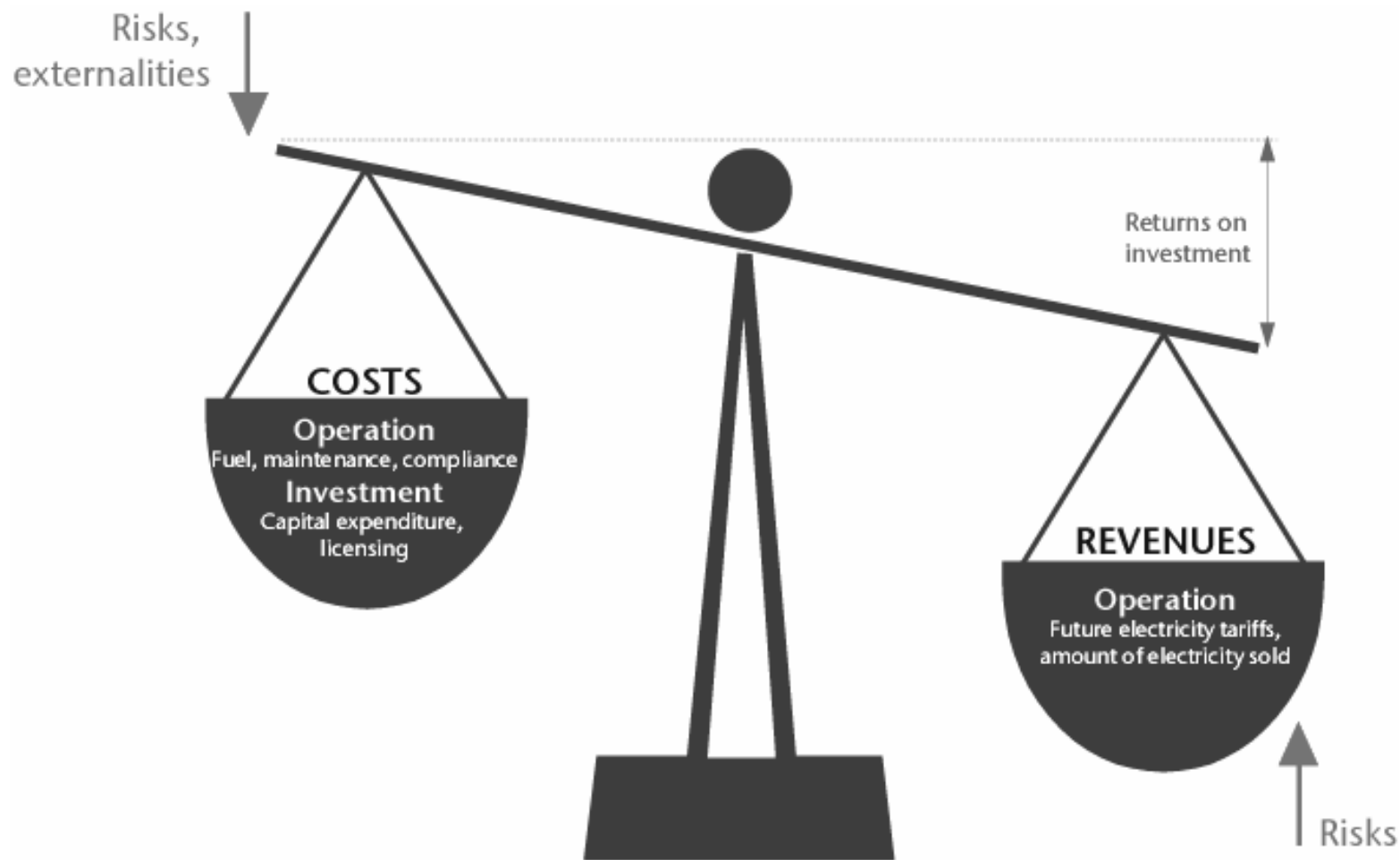
We need to:

- 1) Secure investment in infrastructure*
- 2) Get more power to more people*
- 3) Use the resource of end-use efficiency*
- 4) Diversify and decarbonize the fuel mix*
- 5) Accelerate R&D*
- 6) Reinforce and smarten the grids*

1 – Secure investment in infrastructure

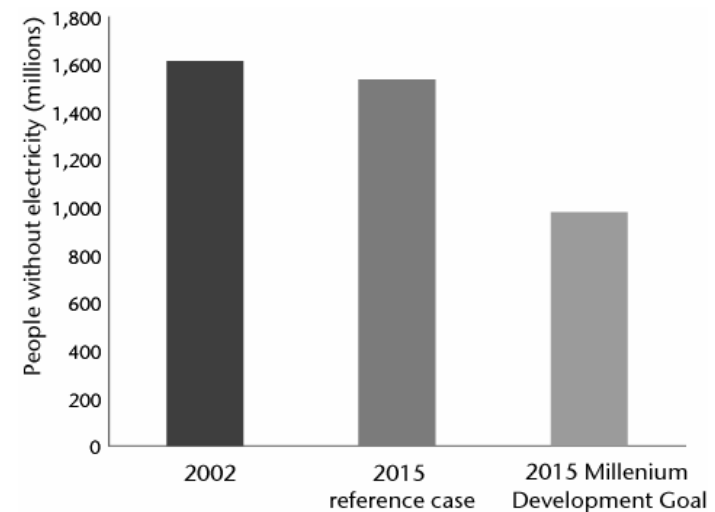
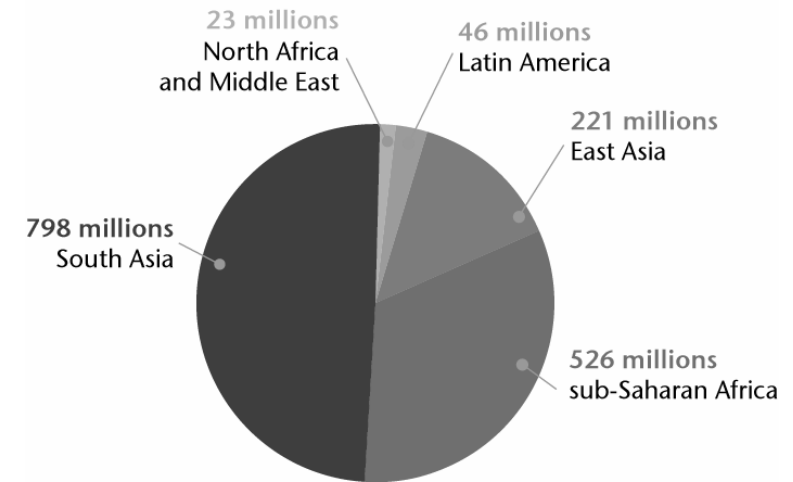


1 – Secure investment in infrastructure



2 – Getting more power to more people

- Only affordable schemes are successful: local business/industrial development is key
- Business case for rural electrification is weak, political and financial government support almost always needed
- Partnerships with private companies that effectively « deliver » electrification on the ground can be effective
- Electricity is one element in a broader energy for development strategy



3 – Use the resource of end-use efficiency

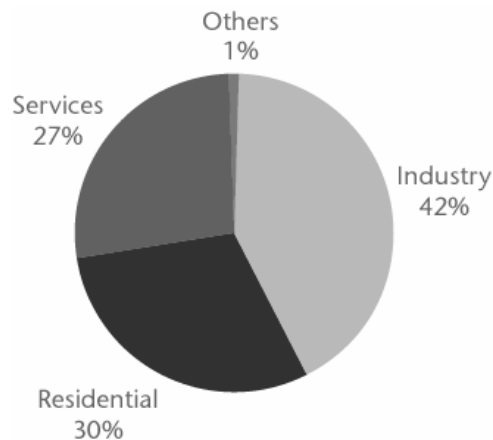
- A solution that addresses all problems at once (as long as cost-effective)

Key Barriers:

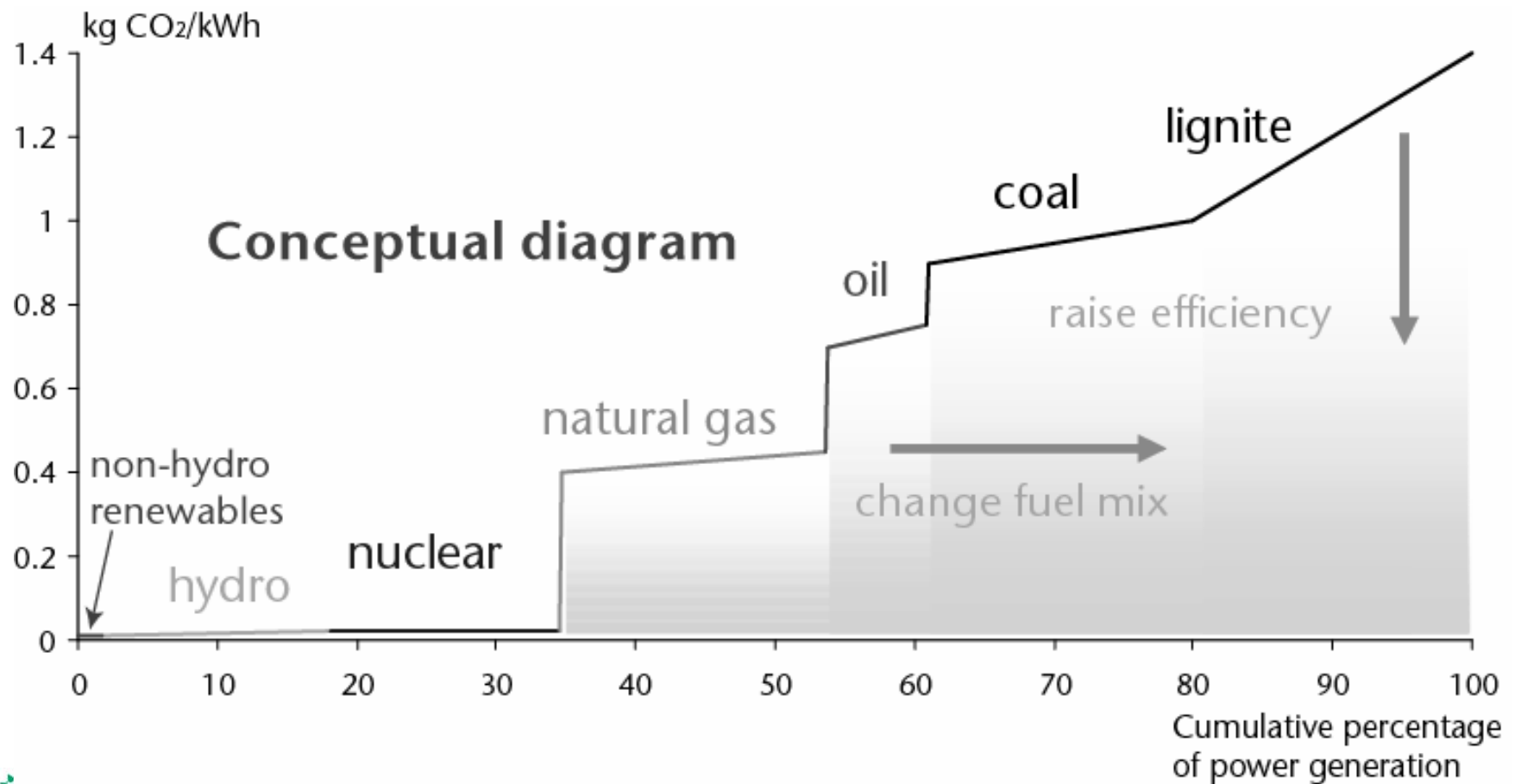
- Lack of information
- Time preferences
- Split incentives
- Snap-back effect

Raise the profile:

- Prices AND non-price measures (labels, standards etc., buildings, motors)
- Financial solutions
- Clear monitoring of results
- R&D by manufacturers
- To get leverage from utilities: turn lost sales into other type of value



4 – Diversify and decarbonize the fuel mix



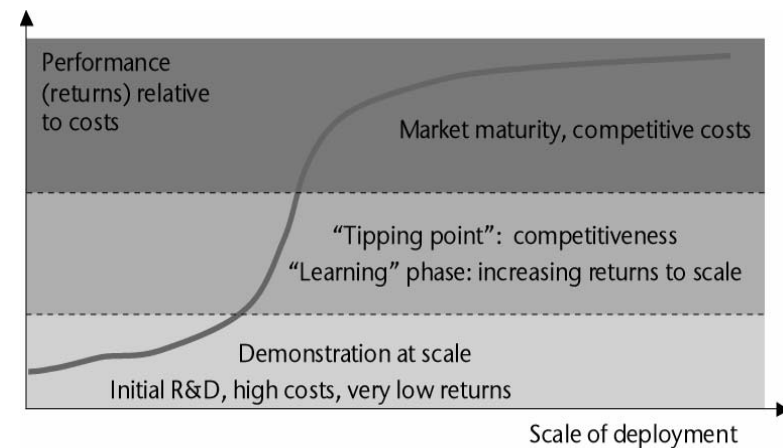
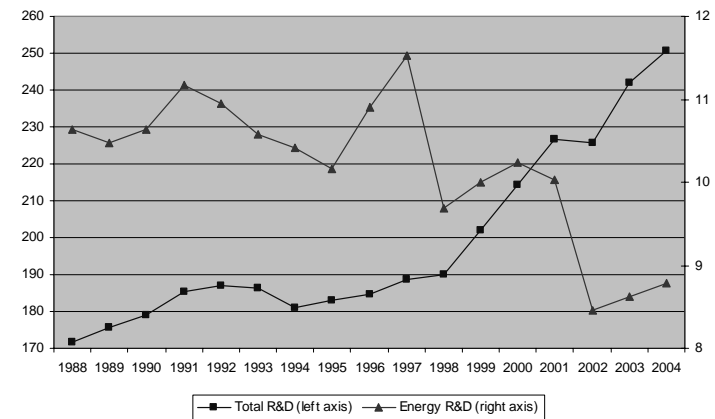


4 – Diversify and decarbonize the fuel mix

- Hydrocarbons: investments in cleaner technologies could be made now if appropriate incentives were in place (but they are not)
- Zero carbon technologies (create deployment conditions):
 - ✓ Further encourage renewables
 - ✓ Use as much hydro potential as possible
 - ✓ Nuclear as a climate mitigation measure
- Variety of sources: No resource is problem-free (trade-offs between performance, impact and costs)
- Incentive policies: every *new* project, when considered, should have long-term carbon incentives
- International cooperation: need to streamline CDM, international framework as a combination of technology-push and demand-pull, based on long-term goal for 2050

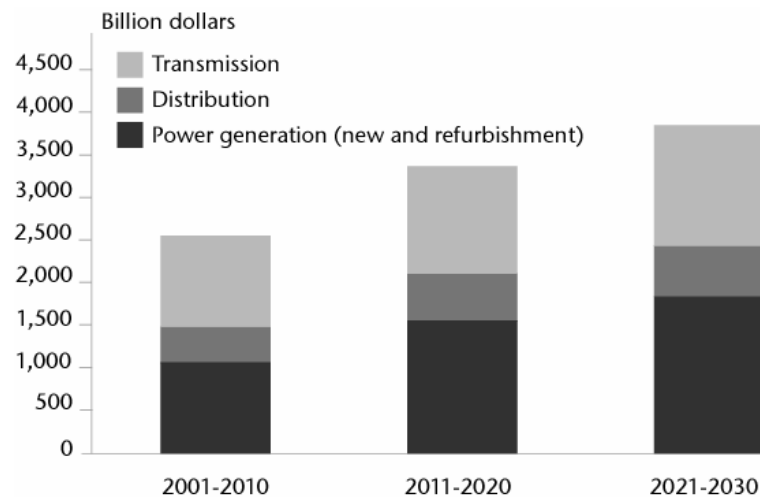
5 – Accelerate research and development

- Need to reverse the trend of decreasing energy R&D
- More effective technology transfer to developing countries, including mechanisms that protect intellectual property rights
- Bring carbon capture and storage, generation IV nuclear, advanced solar technologies and electricity storage on line



6 – Reinforce and smarten the grids

- Investment needs are huge and past trends inadequate



- Market integration as an opportunity, but appropriate capacity and technology is key
- Information technologies and « smart networks »
- Increased transmission investment to support renewable energy
- Reduce power losses further
- Environmental impacts and NIMBY: underground transmission; further research on SF6



The role of decentralized generation

- Stakeholder input: e.g. « Who will need the utilities? »
- DG has an important role to play as a complement to centralized generation but we need to consider a number of trade-offs:
 - ✓ Energy conversion efficiency vs. capital costs
 - ✓ Power grid issues and reliability
 - ✓ Attractiveness from the customer's perspective
 - ✓ Emissions management and carbon capture and CCS
- The way forward:
 - ✓ Important for rural access
 - ✓ Need more research
 - ✓ Change of business model depends on technologies



Facts and Trends / Issue Briefs

- 7 technology fact sheets
 - ✓ Coal
 - ✓ Gas
 - ✓ CCS
 - ✓ Nuclear
 - ✓ Hydro
 - ✓ Non-hydro renewables
 - ✓ Hydrogen
- 10 more detailed issue briefs (www.wbcsd.org)
 - ✓ All of the above, plus:
 - ✓ Transmission and Distribution
 - ✓ Access to electricity in developing countries
 - ✓ End use energy efficiency and the role of utilities

