ENERGY & ENVIRONMENT

Energy & Climate Policy

Latest analyses from the IEA

Chair: Philippe Benoit

Richard Baron: *Robust Energy & Climate Policies*

Antonia Gawel: *Tracking Progress on Clean Energy*

Ellina Levina: *CCS – The Critical Decade*

Bonn, UNFCCC, 15 May 2012

International Energy Agency

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Towards Robust Energy & Climate Policy Packages

Richard Baron

Head of Climate Change Unit

Bonn, UNFCCC, 15 May 2012

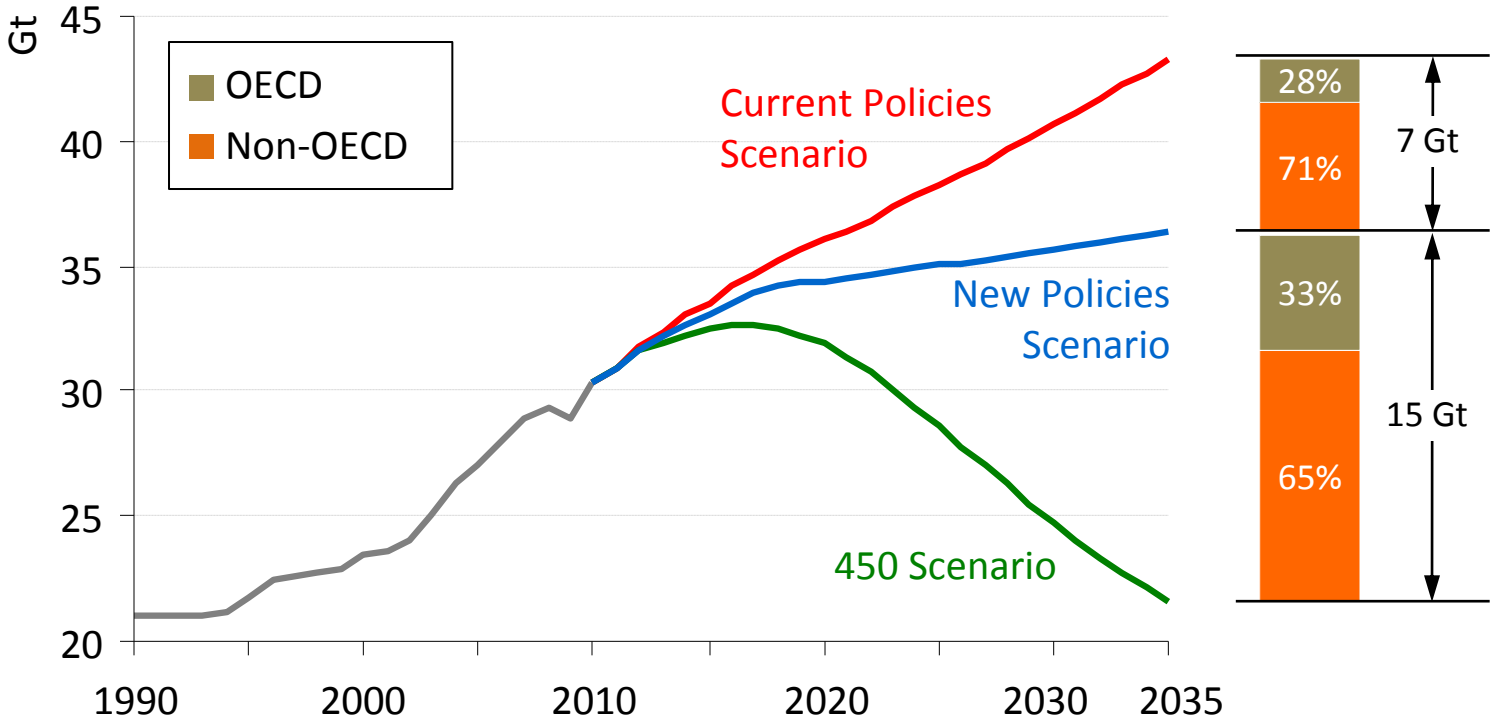
International Energy Agency

Outline

- After Durban – need to move forward
- Combining policy instruments for least-cost climate mitigation strategies in energy
- Lessons from project on implementing emissions trading in China power sector

After Durban – urgent action required

World energy-related CO_2 emissions by scenario



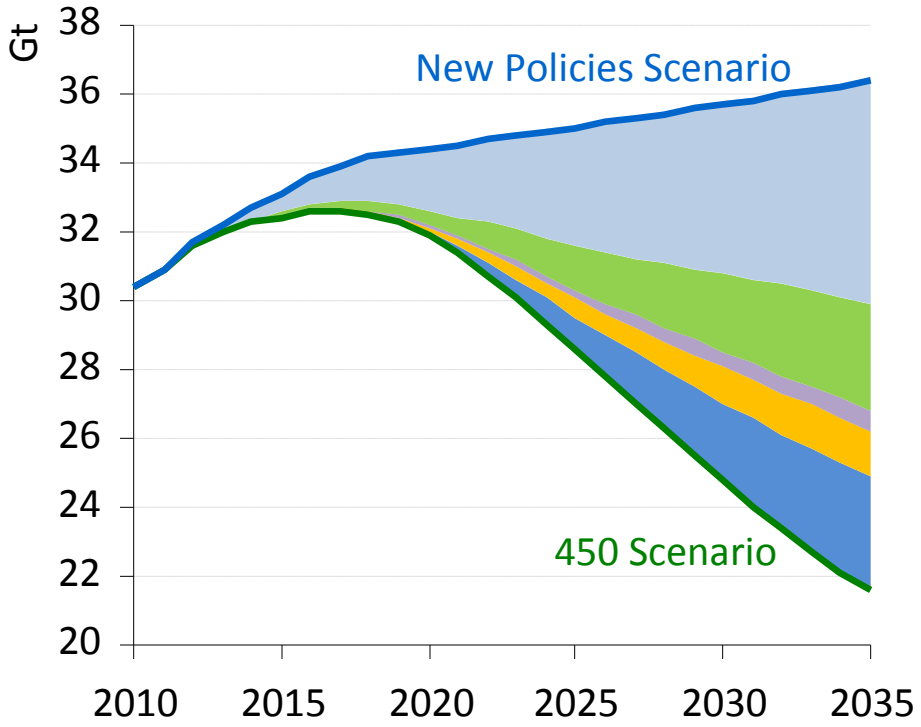
IEA (2011) *World Energy Outlook*

How to encourage actions that can deliver more ambitious goals by 2015?

Key: Robust energy & climate policies to establish the feasibility of low-carbon development strategies

Striking an effective policy and technology balance

World energy-related CO_2 emissions abatement in the 450 Scenario relative to the New Policies Scenario



IEA (2011) *World Energy Outlook*

	Abatement	
	2020	2035
Efficiency	72%	44%
Renewables	17%	21%
Biofuels	2%	4%
Nuclear	5%	9%
CCS	3%	22%
Total (Gt CO_2)	2.5	14.8

CO_2 pricing (taxes and emissions trading) & subsidies removal
Energy efficiency policies across end-uses (see IEA 25 EE recommendations)
Support to low carbon technologies

ENSURE POLICY COHERENCE

Combining policy instruments

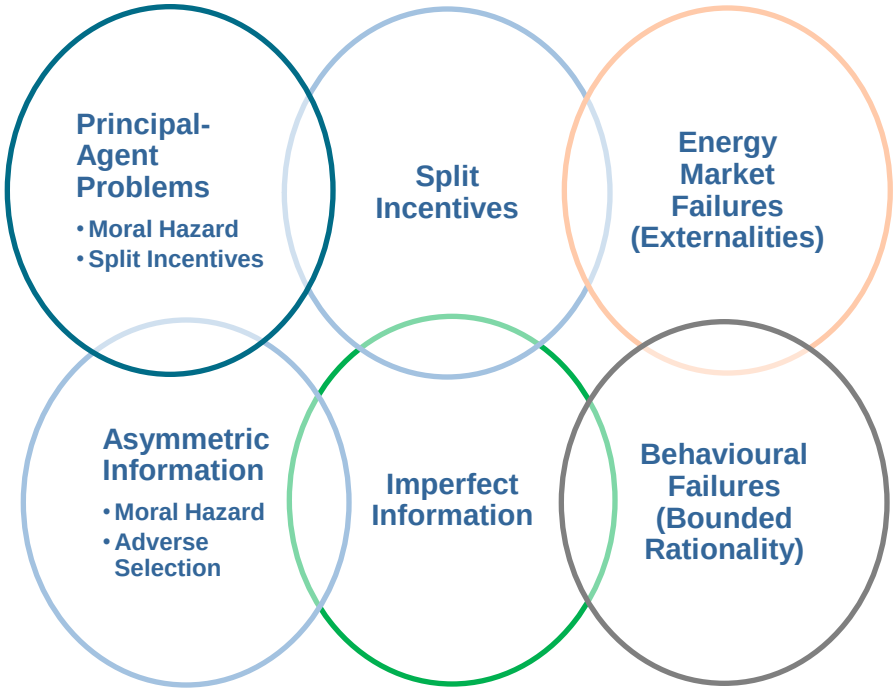
Formulating least-cost climate mitigation strategies

- **Carbon pricing: THE solution to least-cost CO_2 emission reductions in energy sector? Yes & No**

  {UNFCCC context: New Market Mechanism}

- **YES**
  - **Without a cost-reflective energy pricing system, policies to save energy 'run against the wind'**
  - **In principle a single price of carbon helps pursuing emission reductions at least cost overall**
- **NOT sufficient**
  - **Is today's CO_2 price an indicator of tomorrow's?**
  - ***Is the price signal received by end-users?***
  - **Not all economies are market-oriented when it comes to key emitting activities.**

Is the CO_2 price signal coming through? Market failures in energy efficiency



- Price important for removing certain barriers, e.g. negative externalities
- However, informational failures and principal-agent problems can prevent price signal from reaching consumers

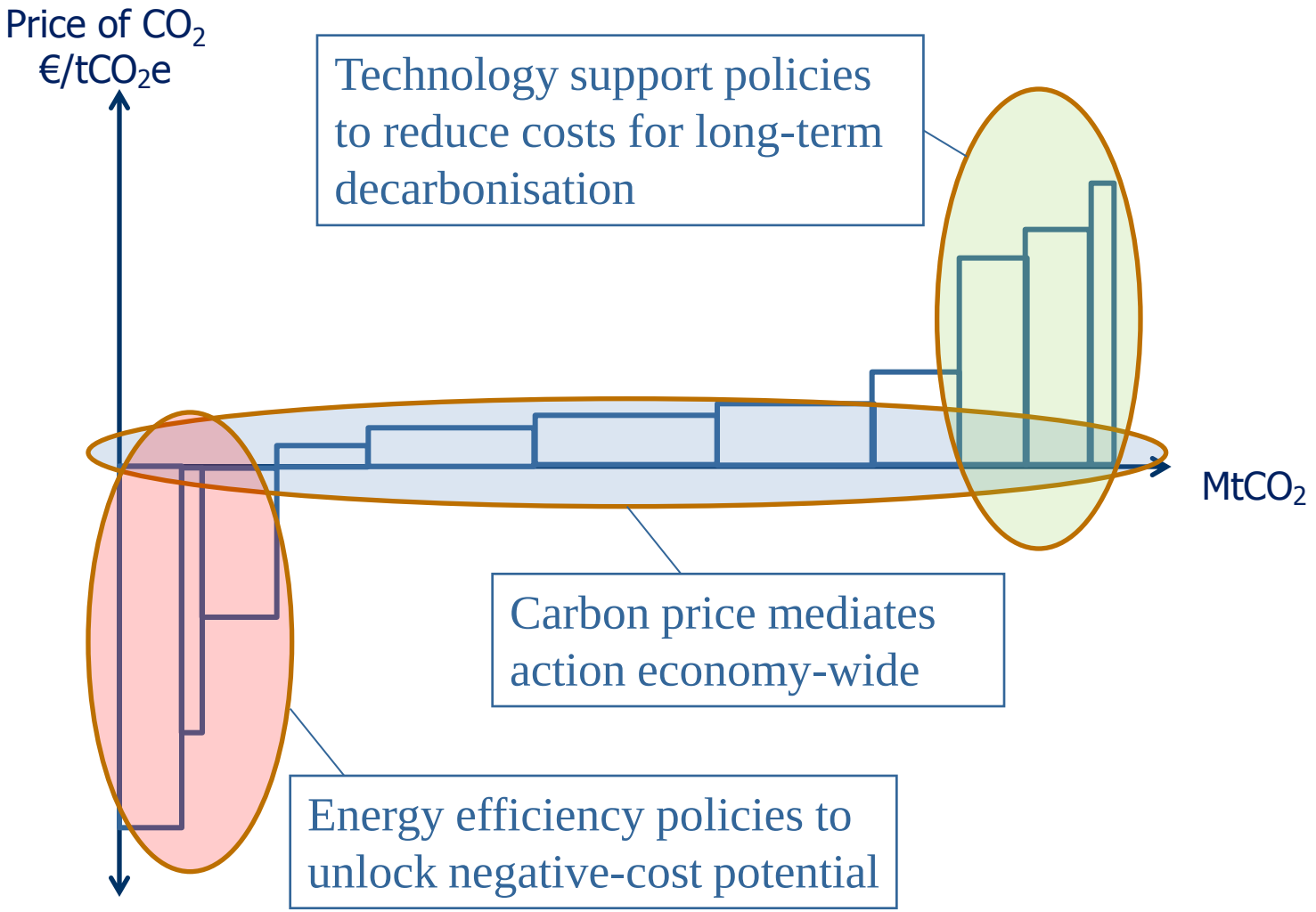
Main points

- CO_2 pricing necessary but not sufficient
- Other policy instruments often pre-exist carbon pricing (efficiency, renewables)
- Need to assess policy overlaps:
  - "With CO_2 pricing, efficiency and renewable policies become redundant wasteful"
  - "Energy efficiency and clean tech support undermine the carbon price"

➔ *Identify market barriers and remedies*

➔ *Calibrate various policy goals together*

In Summary: Target Policy to Potential



Integrating climate and energy policy instruments

Lessons from work on an CO_2 emissions trading system in China's electricity sector

IEA – Energy Research Institute (China National Development and Reform Commission)

6 June 2012, Beijing

China: Addressing Energy and Climate Issues

- Largest GHG emitter
- CO_2/intensity pledge under UNFCCC
- Determined to control emissions domestically
- Power generation: 3.3 GtCO2 (x5 since 1990)
- Emissions trading as priority policy area

- Question to IEA-ERI: emissions trading in electricity?

Context

- Carbon market pilots / national system
- Ambitious low-carbon developments in electricity
- Electricity: a regulated activity / state-owned companies
- China's record on emissions trading

Policy issues for an effective ETS in China power generation

- **Power generation plants:**
  - **How to tap the potential for cost-effective CO_2 savings (small coal ➔ large efficient plants)**
  - **How to move from annual planning towards flexible operations accounting for CO_2 caps?**
  - **Underlying infrastructure for optimised 'dispatch' of plants?**
- **How to reflect CO_2 cost in electricity prices?**
  - **Plant-by-plant, province-by-province pricing of electricity**
  - **Electricity price increases: sensitive policy question**
- **ETS must help unlock other power generation issues**

➔ Identify key changes in electricity regulatory framework for an effective response to an ETS

➔ Design choices (allocation, new entrants) to manage electricity sector priorities

Conclusions

- Start now with implementation of mitigation policies in energy sector & test feasibility
  - A wealth of country-level experience
- A package of instruments is required
  - Watch for overlaps and interactions of policy instruments – avoid unnecessary costs
  - Robust climate policy instruments need to work with energy policy goals (access, price, security)
  - Energy regulatory changes may (will) be required
- A scaled-up international market mechanism will require domestic engagement on energy policy – no longer just an 'add-on' *à la* CDM