

BEYOND
*(The first
commitment
period of)*
KYOTO

**Cédric Philibert &
Jonathan Pershing**

Expert Workshop on
Climate Change and
Sustainable Development,
Seoul, 19/11/2002

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- Global action and deeper cuts are needed
- Solutions exist, but at a cost
- Uncertainties & inertia: the ultimate objective dilemma
- Instrument choice theory and climate change
- Options for commitments
- Timing and burden-sharing
- Broadening & deepening action:
 - Non-binding targets/Price cap/Dynamic targets

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Global action & deeper cuts

WRE CO ₂ Stabilisation profiles (ppm)	Accumulated CO ₂ emissions 2001 - 2100 (GtC)	Global emissions should peak in:	Global emissions should fall below 1990 level in:
450	365-735	2005-2015	<2000-2040
550	590-1135	2020-2030	2030-2100
650	735-1370	2030-2045	2055-2145
750	820-1500	2040-2060	2080-2180
1000	905-1620	2065-2090	2135-2270

Source: IPCC TAR Synthesis Report table 6.1

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Solutions exist, but at a cost

- Improving energy efficiency
- Fuel switching (coal to oil to gas to non carbon energy sources)
- CO₂ capture and storage
- Enhancing sinks
- Reducing other GHG emissions

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The ultimate objective dilemma

- Costs and benefits uncertain – and costs matter
- Inertia constrains - and requires - early action
- Possible way out: Aim at low concentration levels with achievement conditional on costs
- Stringency matters, not emission certainty
 - Instrument choice theory would suggest price instrument, not quantity instruments, in the case of climate change

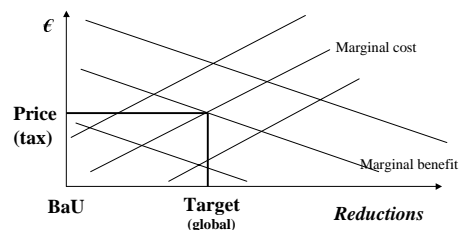
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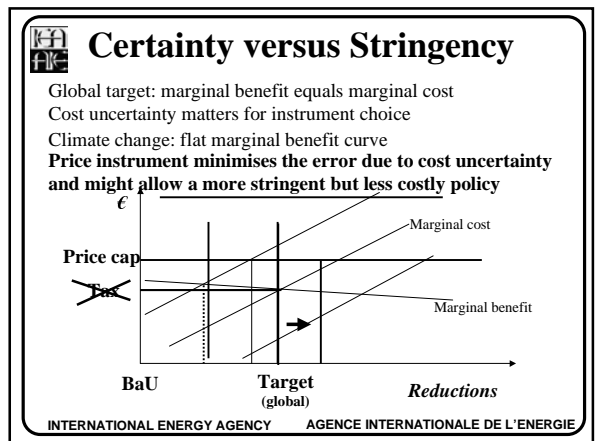
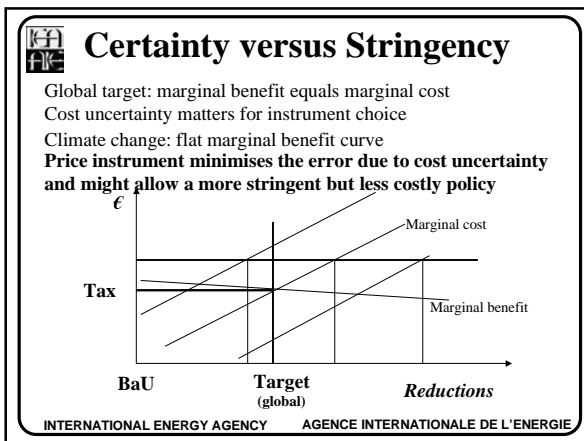
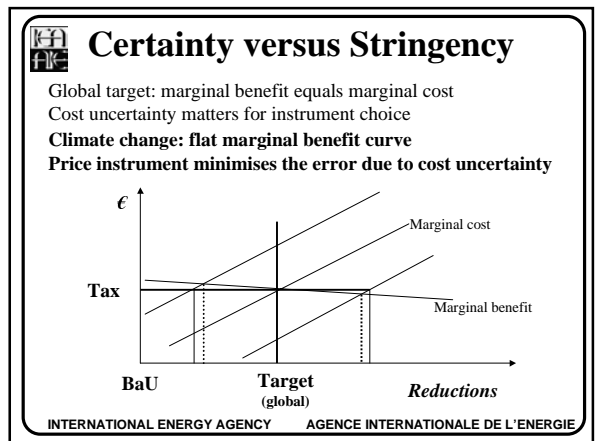
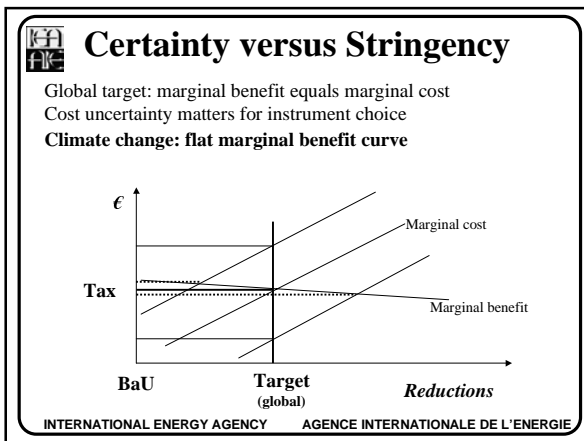
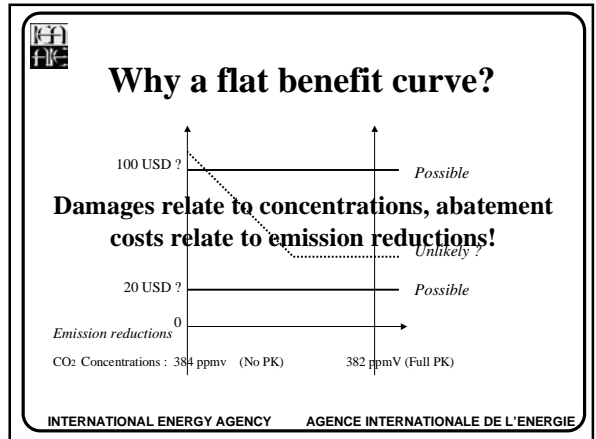
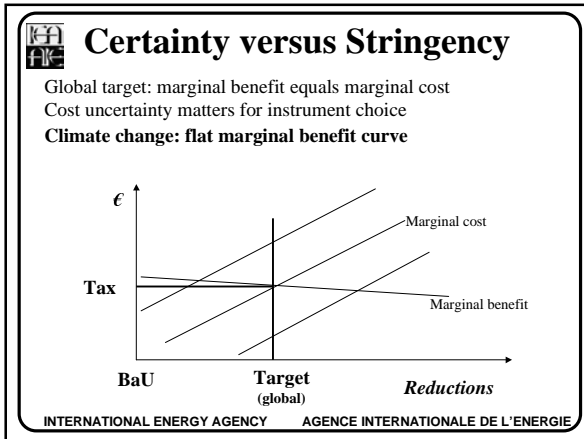
Certainty versus Stringency

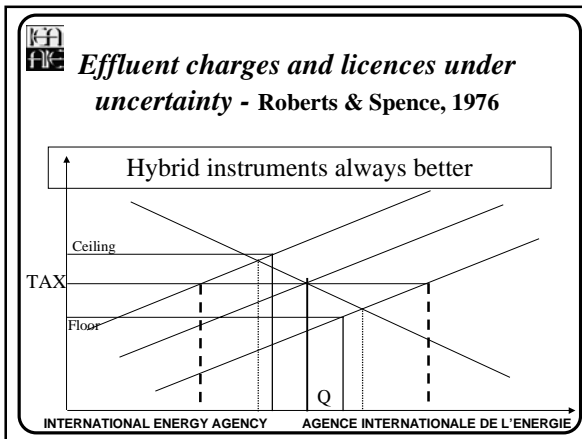
Global target: marginal benefit equals marginal cost
Cost uncertainty matters for instrument choice



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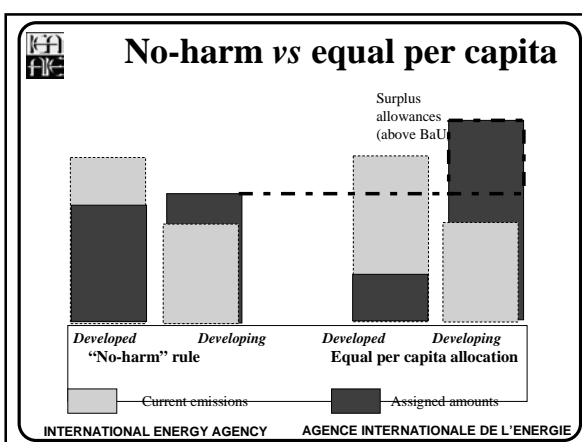




- Certainty versus stringency**
- *Regulating Stock Externalities under Uncertainty* (Newell & Pizer, 2000):
 - Weitzman's model modified to take into account persistent benefits and technical changes
 - Damage estimates would need to be orders of magnitude greater to reverse preference for price instruments
 - Fixed targets would be consistent with at least 40% global cuts (short term)
 - A price instrument would allow deeper cuts at lower expected costs
 - Giving up certainty favours stringency
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- Options for Commitments**
- Co-ordinated carbon taxes not widely accepted
 - Technology accords may not be enough
 - Quantitative targets allow emissions trading
 - Cost-effective and environmentally effective
 - Key for equity
 - Fixed binding targets provide certain emission levels, but entail uncertain costs
 - Developing countries concerned that binding targets may threaten their economic growth
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- Timing and burden-sharing**
- Undirected development will not solve climate problem
 - «Slow» phase in of commitments under Kyoto not enough; implies high concentrations
 - Equal per capita allocation or contraction and convergence are not obvious solutions:
 - May limit environmental effectiveness
 - May eventually constrain economic development
 - No-harm rule with alternative forms of quantitative targets may offer better prospects
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- Broadening and deepening action: Non-binding targets**
- Surplus sellable, if any
 - Incentive, no hard law
 - Responsibility limited to units sold
 - Targets on/close to BaU emission levels
 - No risk for growth: development first!
 - An option for developing countries only
 - Close to CDM
 - A zero price cap
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The Price Cap

- Supplementary permits at a fixed price
 - Price set in the upper range of expectations
 - Many possible uses of revenues (if any)
- For countries or only economic agents
- Trading necessitates one single price or restrictions
 - Differentiated assigned amounts
 - Cap price not marginal cost
- Capping the cost may help countries accept more stringent objectives

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Dynamic targets

- Assigned amounts based on economic projection, adjusted to actual growth
- Differentiated assigned amounts *and* indexation rules:
 - “Intensity targets” only a special case
 - Assigned amounts *and* level of efforts indexed
 - GDP measurement is a real issue
- Concerns for the ultimate objective?
 - Reducing cost uncertainty favours stringency

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To sum up...

- Global and deeper action “beyond Kyoto”
- Stringency matters more than certainty
- More flexible options could help countries adopting sufficiently stringent commitments
- Dynamic targets an option for all countries
- Non-binding targets for developing countries and price cap for developed countries
- Many combinations conceivable
- A trade-off efficacy versus complexity?

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