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Can COP21 ever be a success?

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Based on

Beyond Kyoto, plan B: A climate policy master plan based on transparent metrics. *Ecological Economics* 68 (2009) 2930-37

A Turbo Drive for the Global Reduction of Energy-Related CO_2 Emissions. *Sustainability* 3 (2011) 632-48

Preparing the design of robust climate policy architectures. *Int. Environmental Agreements: Politics, Law and Economics* 11 (2011) 275-95

Design, Process and Performance Criteria provide structure to Climate Policy, SISC Proceedings (2014) 166-175

Europe's electricity regime: Restoration or thorough transition. International Journal of Sustainable Energy Planning and Management 5 (2015) 57-68

Sustainability assessment of nuclear power. Discourse analysis of IAEA and IPCC frameworks. Environmental Science & Policy 51 (2015) 170-180

A lesson of foregone 20 COPs

There are problems when – on its own terms – COP21 fails or succeeds.

Problems are	Why?
• minor when COP21 fails,	• *Failure* reveals necessity of U-turn: thoroughly rethink, revise, revert, present COP working
• major when COP21 succeeds	• *Success* prolongs policy flaws, transgress 2° C limit, create irreversible risks, likelihood of crippled transitions [Annex]

Prior task: policy transition = overhaul the COP terms

Overview

- COP caravan & INDCs
- What kind of policy?
- Issue #1: MRV
- Issue #2: Carbon pricing
- Rescue or re-invent COPs?
- Annex (slides 17-24)

COP caravan 2015

Positive

- Higher awareness of Climate Change risks
- Curbed ambitions on global instruments [⇔ intensive care for EU ETS]
- More local & national mitigation / adaptation efforts
- Softer divide Annex1 / non-Annex1 [no graduation yet]

Negative

- 2° C emission budget handled as target, rights, …
  not as a risky extreme to avoid by all means
- Focus on patchworks of INDC pledges
- Voluntary Initiatives
  - Remind 'CANZ' in 90s; how today?
  - Walk the talk? EU guidelines impair Energiewende [Annex]
  - Solid MRV is prerequisite for 'binding'

INDCs
Intended Nationally Determined Contributions

What is on the table:	What should be:
Zero-sum game: 'You win=I lose • I win=You lose': negative spiral, suspicion, reluctant cooperation	**Common resolve**: cooperation for sustainable energy systems, resilient when climate changes
Messy, opaque contributions: incomparable actions; emissions quota cover too many factors; **MRV not doable**	**Performance indicators**: clear, apply on all countries (e.g. carbon intensity of energy use); workable MRV (now available certified data)
By 2030: dilutes urgency, erodes responsibility for acting now, defect, engages future politicians	**Immediate steps**: year-by-year; improve indicators; yearly pledges added on rolling baselines
Voluntary - Intended: mostly unclear; unstable over time; too little effective change; unfair (free-riders gain)	**Agreed upon coercion**: global, lean regime advantageous for sovereign parties with common but differentiated responsibilities

What kind of policy?

1. Uniformity Fetish: simplistic policies of mainstream economics

2. Complexity Syndrome: Clumsy & messy policy, result of clumsy analysis

3. Rational policies:
Optimal specificity = address diversity
Decompose: multilevel, itemize, time-sequential
Strategic planning & operational management:
- **Identify problem & context**
- **Adopt and respect principles**
- **Criteria (results to obtain, attributes to own)**

[see Annex]

Climate policy issues + answers

Urgency: deliver by proven institutes; trained, experienced people; available, certified data; established MRV; energy transition as mitigation spearhead

Global commons: nested and polycentric governance (Ostrom); 'mutual coercion, mutually agreed upon' (Hardin)

Multilevel: lean pinnacle as framework to guard the commons; all the rest at national state and lower levels

Time-sequential by the year: rolling baselines; start here & now; irrevocable yearly progress on quantitative indicators

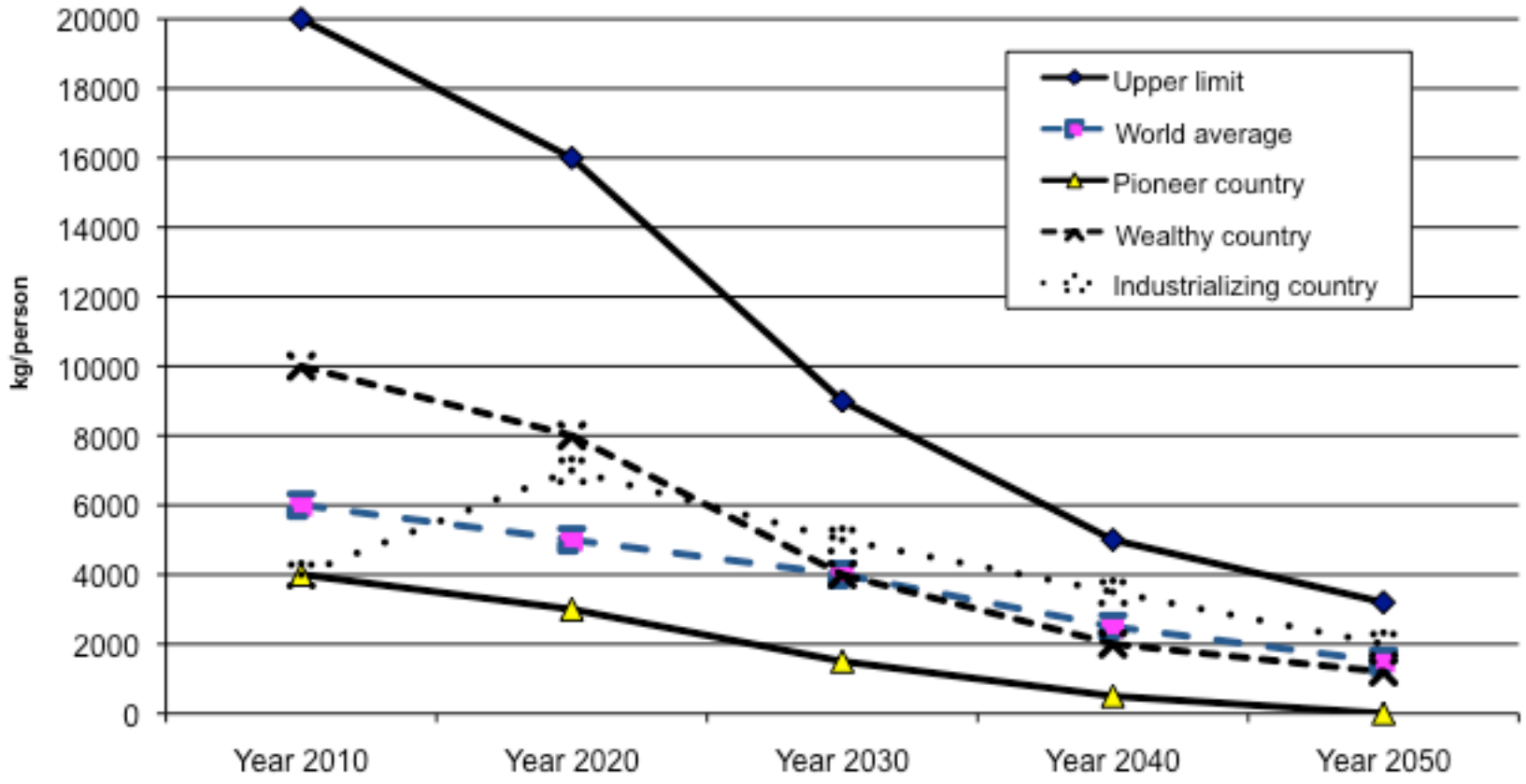
Incentivize interests:

* boost national GDP reforms, also by levies + subsidies
* yearly transfers, rich to developing (based on GDP/person), also dependent on progress made by countries

Serious about 2° C

Common responsibility = energy-related CO_2 emissions / person
contract+converge to zero via 100% renewable energy systems

Differentiated responsibilities = inclinations differ [rich countries most+first]



At UNFCCC
(pinnacle of myriad multilevel policies)

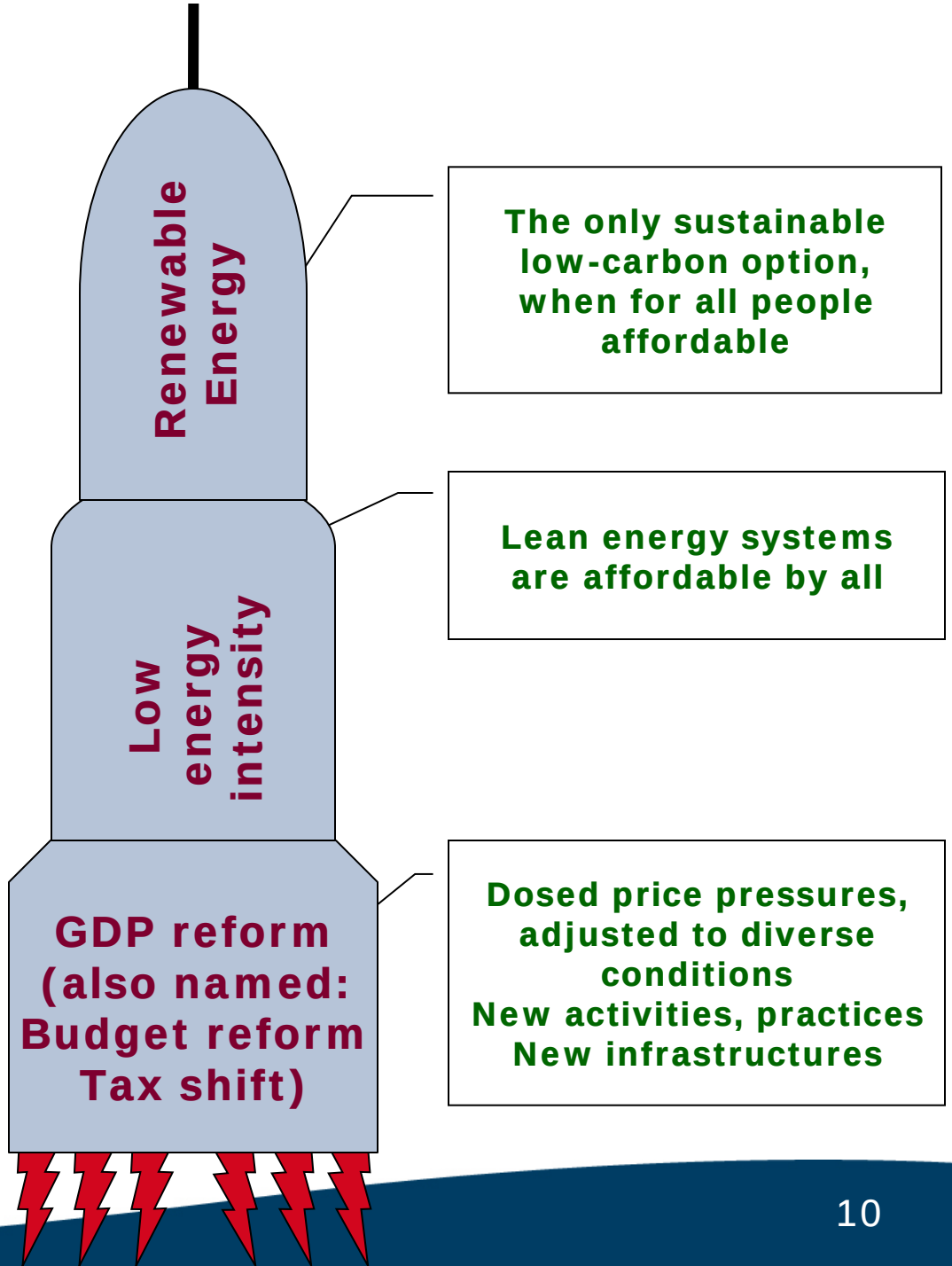
Decompose energy-related CO_2 emissions / person

$$\frac{CO_2 \text{ emissions}}{\text{Person}} = \frac{\$ \text{ GDP}}{\text{Person}} \times \frac{\text{kWh energy}}{\$ \text{ GDP}} \times \frac{CO_2 \text{ emissions}}{\text{kWh energy}}$$

- **Policy spearhead: mitigation of energy-related CO_2**
- **Population (migration, etc.) banned from climate debate**
- **MRV: 4 quantitative indicators already measured SDI**
  - *** Yearly, for all countries**
  - *** Necessary & sufficient to Monitor – Report – Verify**
- **Yearly country pledges on indicators; INDC is national issue**
- **Matches UN initiative SE4All (Sustainable Energy for All)**
- **Lean pinnacle of multilevel policy infrastructure**
- **Solid basis for structuring national and lower level policies**

Blow up the climate gridlock by

3-staged rockets



‘Climate tax revenues’ : indicator of GDP reform

4 money flows (2 positive – 2 negative)

	“Climate Goods”	“Climate Bads”
Levies, charges, taxes	B1-	B2+
Subsidies, support, feed-in tariffs	B3+	B4-

‘Climate tax revenues’ = (B2 + B3) – (B1+B4)

Carbon Pricing: the Economics Uniformity Fetish

Economics worship the uniform incentive:

- The Globally Harmonized Carbon Tax
- Unique Carbon Prices clearing global Emissions Tradings

'Uniform carbon price' is theoretical vanity

Globally harmonized carbon tax: what is it for Benin, Belarus, Belgium, Bolivia, Bulgaria, Buthan, …etc… ?

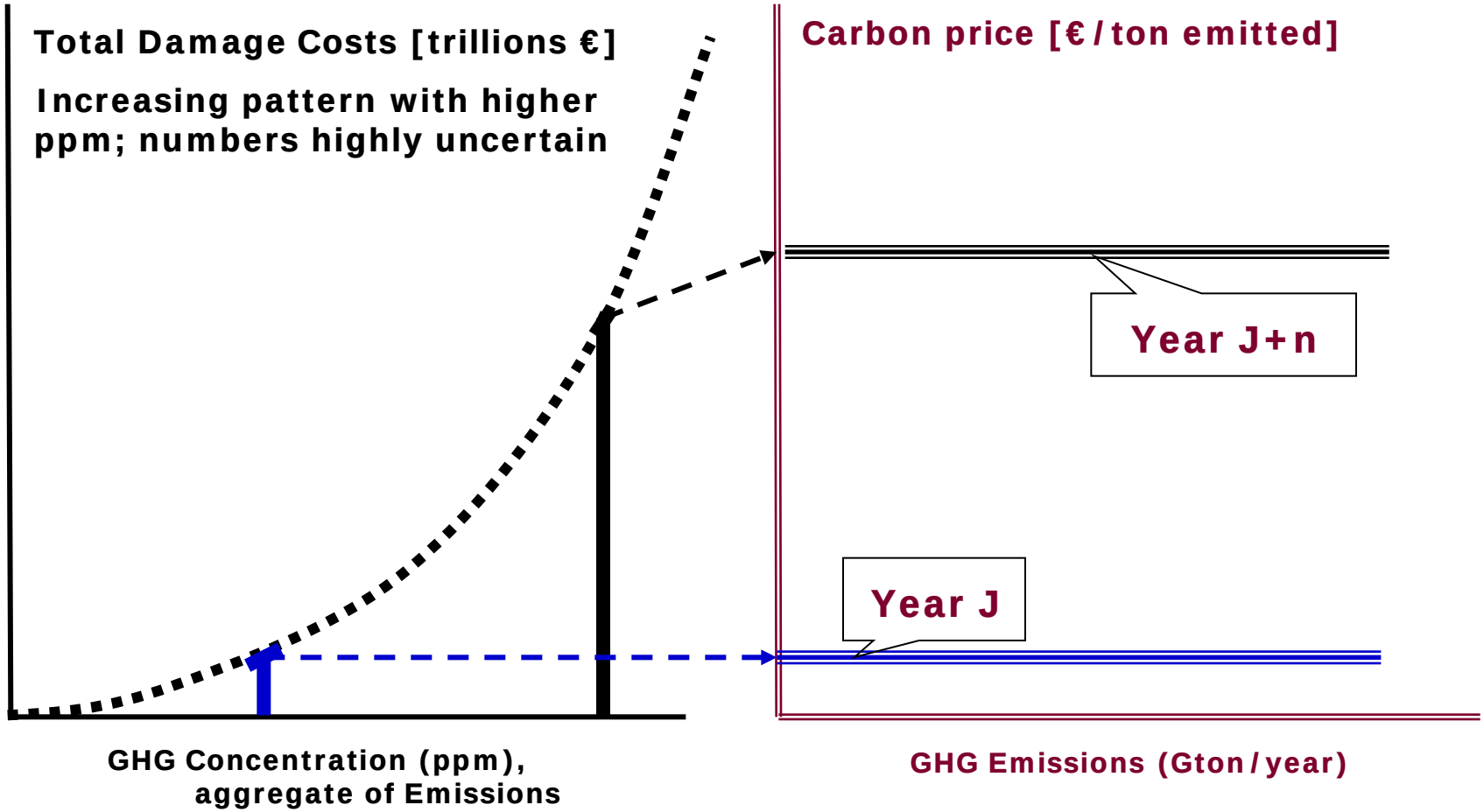
Emissions trading: disfunctional when diverse activities are amalgamated ⇔ markets function iff well segmented

-Metaphore: cutting emissions requires hundreds 'cutting instruments' ⇔ single scythe on leveled playing field

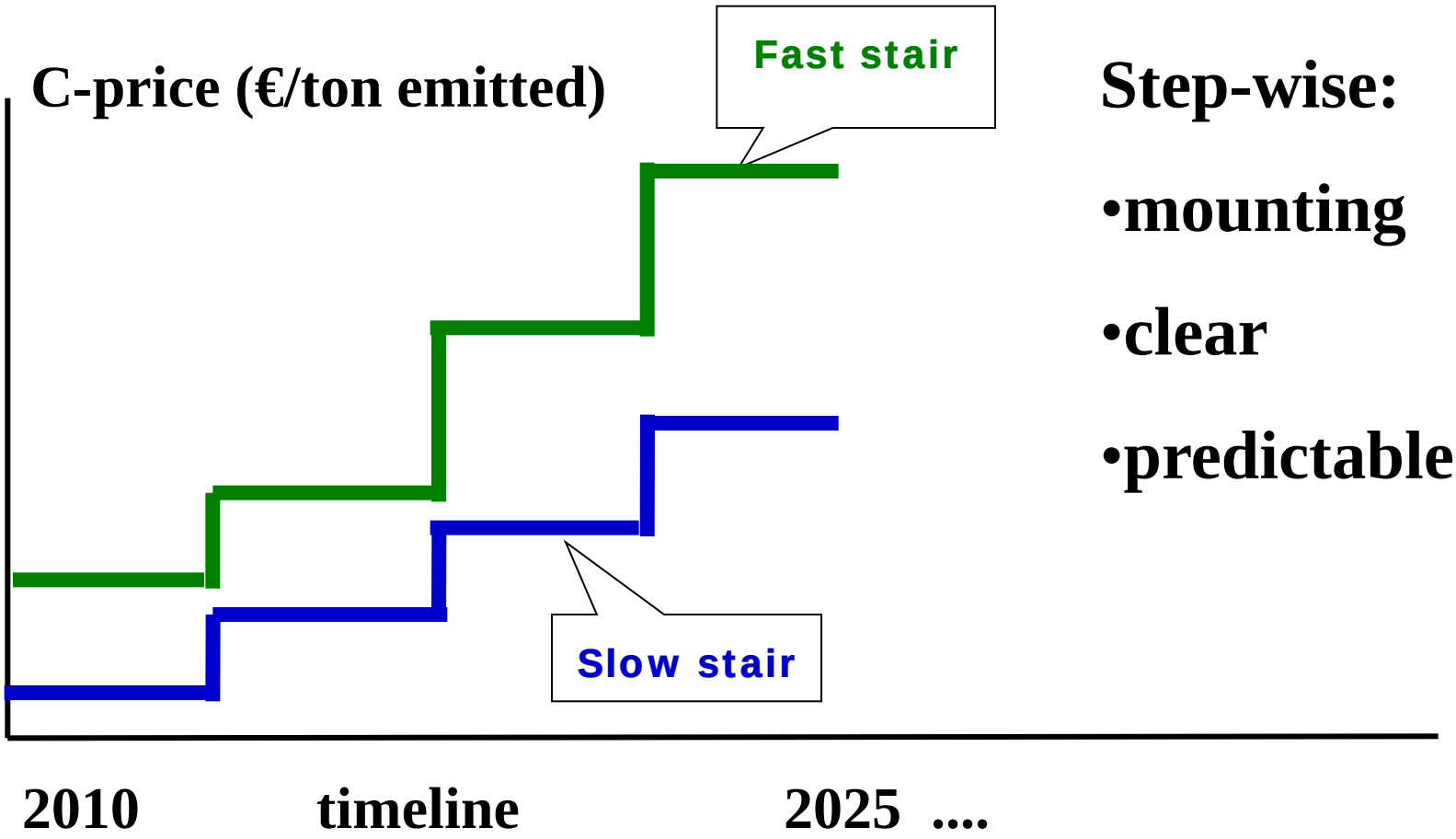
-Unequal fields are not leveled by uniform blanket cover

Triggering billions of actors in trillions of daily activities requires proper, fair, specific pressure levels

The Carbon price (= marginal damage costs)



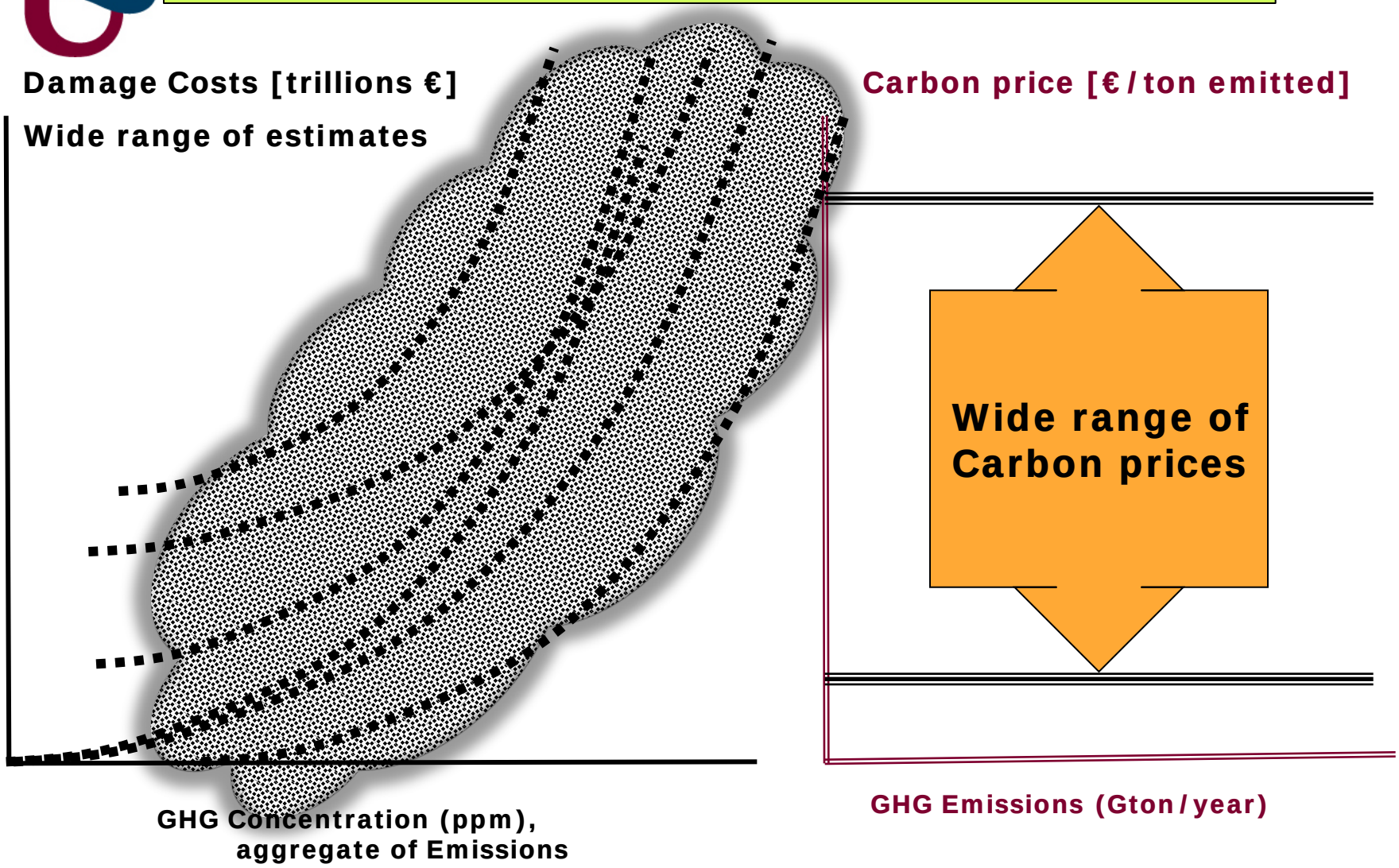
Well-behaving future Uniform Carbon Prices



Step-wise:

- **mounting**
- **clear**
- **predictable**

Uncertainty & ignorance cause Wide ranging Carbon prices



Stranded global climate policy: Rescue or re-invent?

Rescue what?

* Present COP process: added value?
* Clumsy bottom-up regime complexes (Keohane & Victor)?

Re-invent the evident

* Global treaty: lean pinnacle (of myriad multilevel policies)
* Assess sustainability of technologies, bend money flows
* Reinforce what works (budget reform; RE support)
  Delete what doesn't work (amalgamated emissions trading)
* MRV: yearly available, certified indicators
* Common-differentiated regime: intense Cpp emitters lead
* Structured, performance and GDP/person based yearly financial transfers from rich to developing countries

More to do ...

* Limit UNFCCC to climate – energy transition as spearhead
* Separate UN initiatives on population, technology transfer
* UN Ethics commission on wealth accumulation & distribution

Annex

Crippled transitions

The essence of climate policy

Five crucial principles merit respect

Criteria: Design, Process, Performance

Decomposition at country level

Rational climate policy

Case: electricity sector transition

Lock-in (2014-….) Large energy companies ⌘ EU Commission ⌘ Nuclear discourse

- **Magritte Group (March 19, 2014) recommends:**
  - Preference for 'mature renewables in the regular market'
  - Priority to the utilization of existing competitive power capacity rather than subsidizing new constructions
  - Restore the ETS as a flagship climate and energy policy
- **EU (April 9, 2014) New Energy State Aid Guidelines**
  - Impair the German Energiewende
  - Payments for UK coal power capacity
  - Subsidize planned EDF EPR at UK Hinkley Point (price guarantee of €115/MWh during 35 years)
- **Nuclear discourse molds fake reality**
  - IAEA & IPCC option low-carbon (⇔ renewables)
  - No real sustainability assessment
  - UK discourse substitutes 'low-carbon' for 'sustainability'

Urgent & Drastic Change

- **Thorough electricity / energy transitions**
  - Annex I countries develop & deploy technologies
  - Non-Annex I will emulate techniques & practices
- **Right reference = future sustainable energy systems**
  - Renewable energy + efficiency ⇔ portfolio, silver bullet
  - Local natural flows, prosumers first • complemented by centralized renewable plants
  - Kickstart transition, even stranding existing assets
  - Apply ‘polluter pays principle’: incumbents pay, not the sustainable challengers
  - New electricity economics: most capacities not on command but stochastic (and redundant)

The Essence of Climate Policy

1. **Unique atmosphere & climate: their saving gets priority above everything else (UNDP, 2007)**

2. **Ultimate global commons: "mutual coercion, mutually agreed upon" i.e. global policy (UNFCCC) needed**

3. **Excessive use of fossil fuels + existence atomic power: root cause of problems = Gordian knot of change [ban is necessary & sufficient, + desirable for SD]**

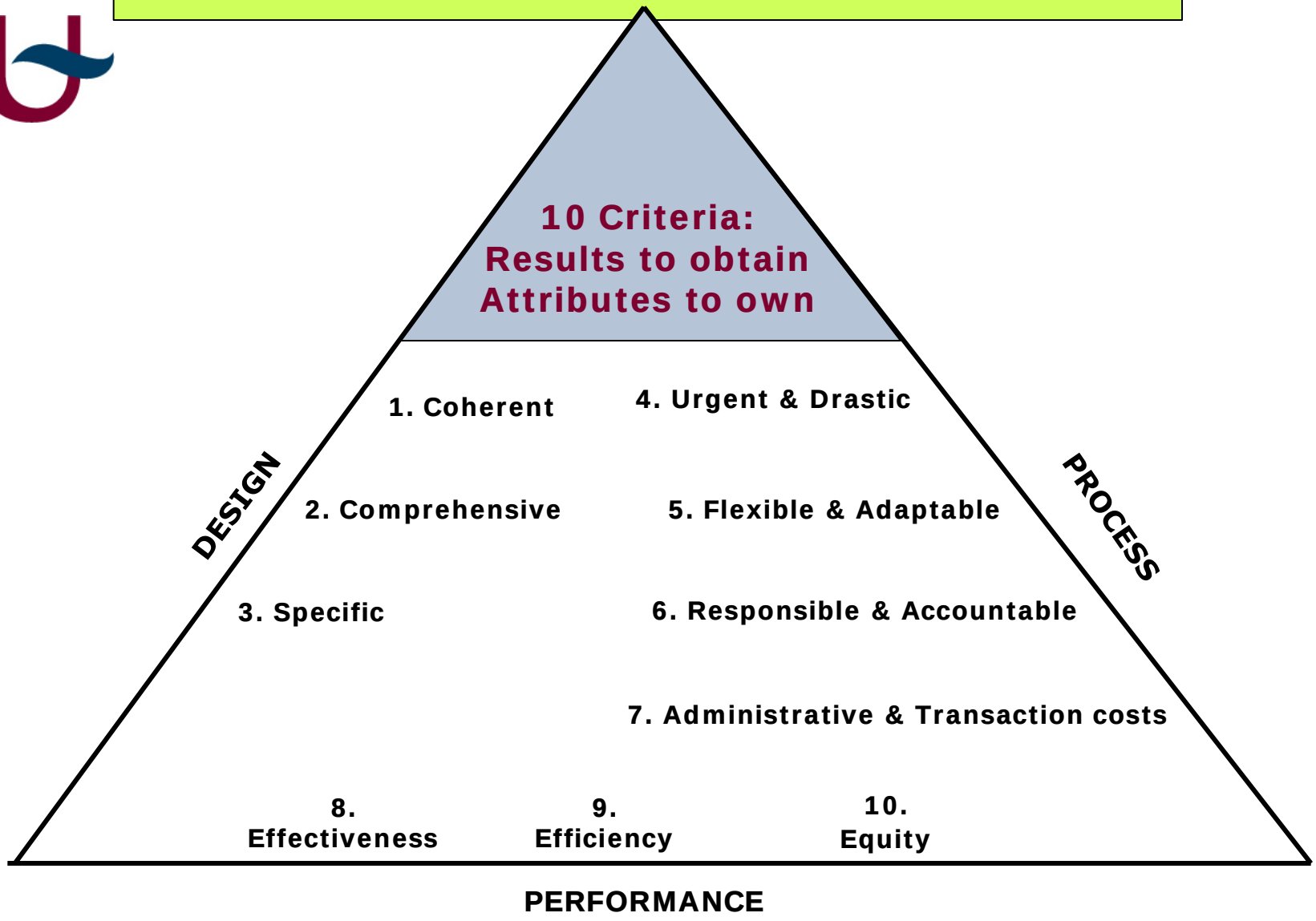
4. **Build distributed, efficient, renewable, sustainable energy systems: responsibility of the rich countries & people – other countries & people follow (emulate)**

5. **Decentralised levies + subsidies: by case apply fine-tuned pressure (⇔ scythe of global uniformity like amalgamated emission trading or global carbon tax)**

Five crucial principles merit respect

1. **Universality:** look at the world from the Universe
2. **Sovereignty:** of nations, organisations, people
3. **Realism:**
   interests prevail over intentions (political economy)
   find the fastest pace of change
   climate change threatens life (of the poor)
4. **Transparency:** comprehensible + clear metrics
5. **Diversity:** the world is diverse (ban the scythe)

Criteria: Design, Process, Performance



At country level: Decompose factors in activities & actors, down to specific policy niches

Wealth Intensity of Persons: prices x activities by whom?

$$\text{Wealth Intensity} = \frac{\$\ \text{GDP}}{\text{Person}} = \sum_A \frac{P_A \text{ x Activity}_A}{\text{Person}} \qquad (3)$$

Energy Intensity of Wealth: budget shares x efficiency

$$\text{Energy Intensity} = \frac{\text{kWh energy}}{\$\ \text{GDP}} = \sum_A \frac{P_A \text{ x Activity}_A}{\$\ \text{GDP}} \text{ x } \frac{\text{kWh energy}}{P_A \text{ x Activity}_A} \qquad (4)$$

CO_2 emissions Intensity of Energy: energy mixes

$$CO_2 \text{ Intensity} = \frac{CO_2 \text{ emissions}}{\text{kWh energy}} = \sum_E \frac{\text{kWh type}_E}{\text{kWh energy}} \text{ x } \frac{CO_2 \text{ emissions}}{\text{kWh type}_E} \qquad (5)$$

Rational climate policy

Climate *policy* is complicated, contentious, …
not complex if managed by

1) Problem decomposition

- **Mitigation: by GHG source: energy-related, land use, industrial gases; by societal-economic sector; by region; by emitting activities & related actors**
- **Adaptation: by hazard, sector, region, exposed people**

2) Time-sequential decision-making

- **yearly rolling baselines**
- **yearly pledges & reviews, e.g. reducing Cpp [CO_2 per person] and controlling main drivers**

3) Political economy of energy interests, power, money