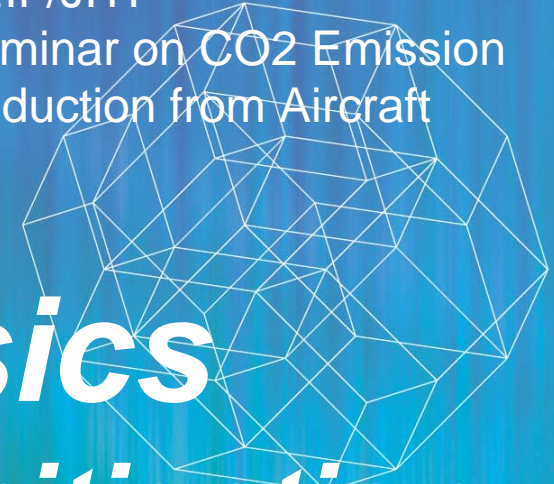


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Seminar on CO₂ Emission
Reduction from Aircraft



Back to Basics

- Basic issues on mitigation of CO₂ emission from civil aviation-

October 9, 2007

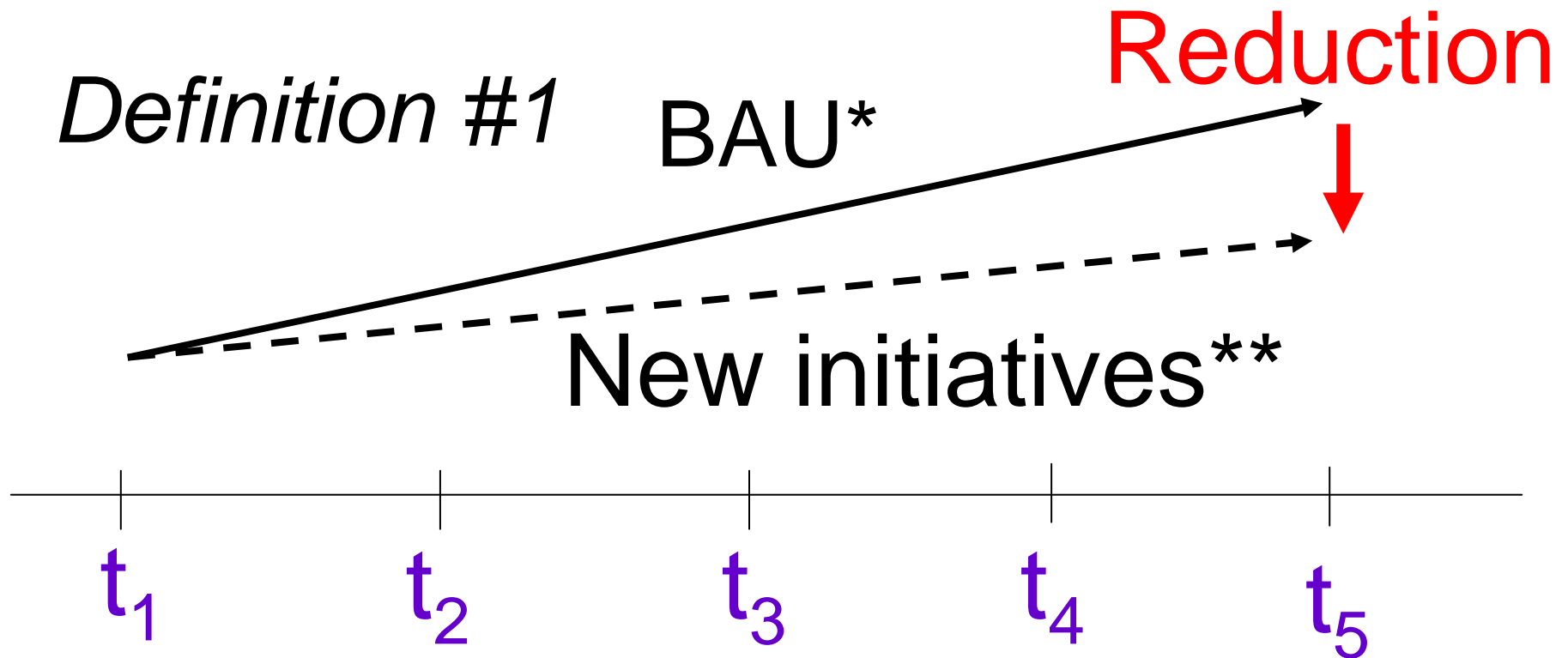
Katsuhiro Yamaguchi
Professor, The University of Tokyo

GraSPP
THE UNIVERSITY OF TOKYO



➤ **What is meant by
emission reduction?**

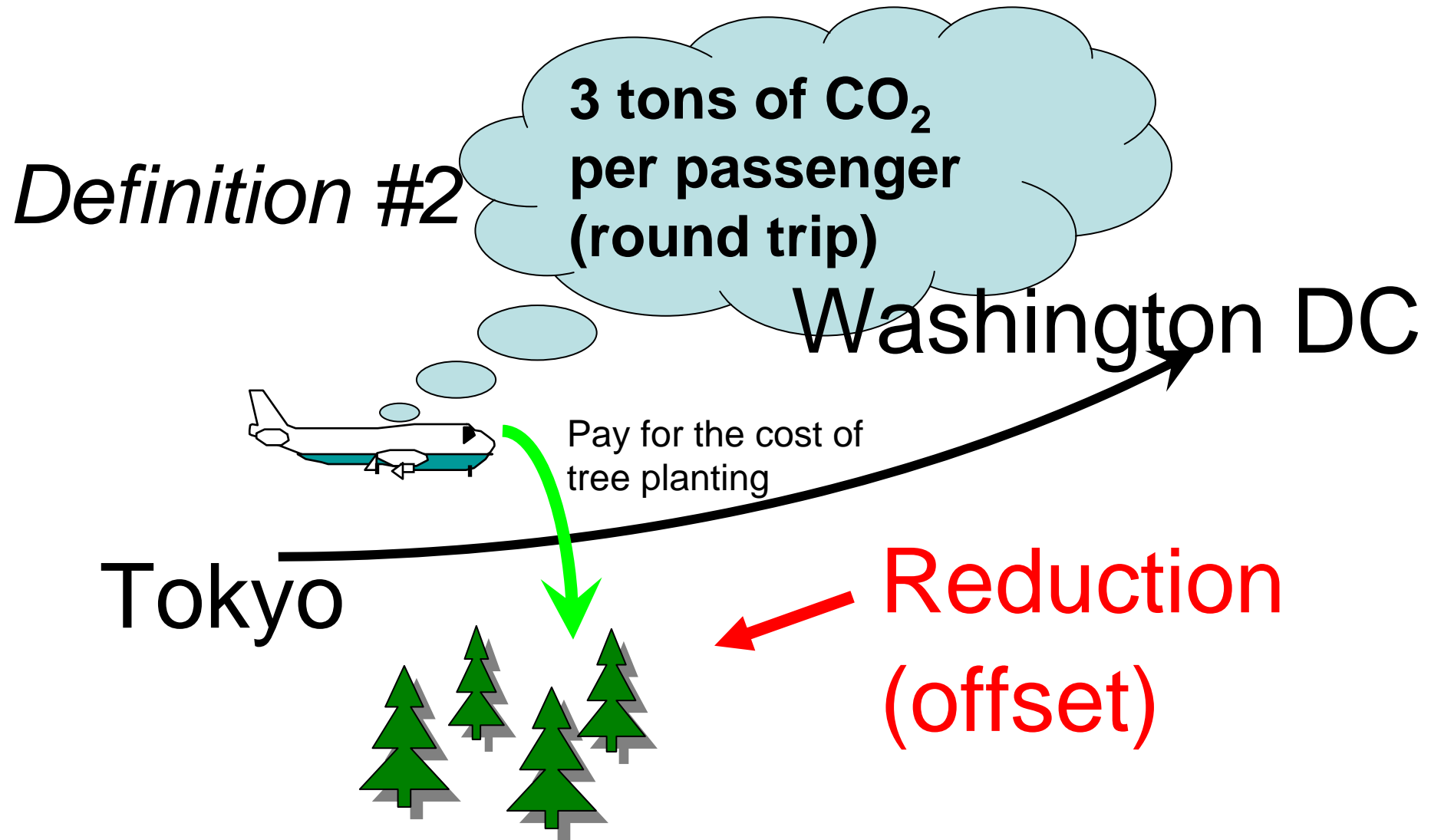
Basic Concepts



* BAU: Business as Usual

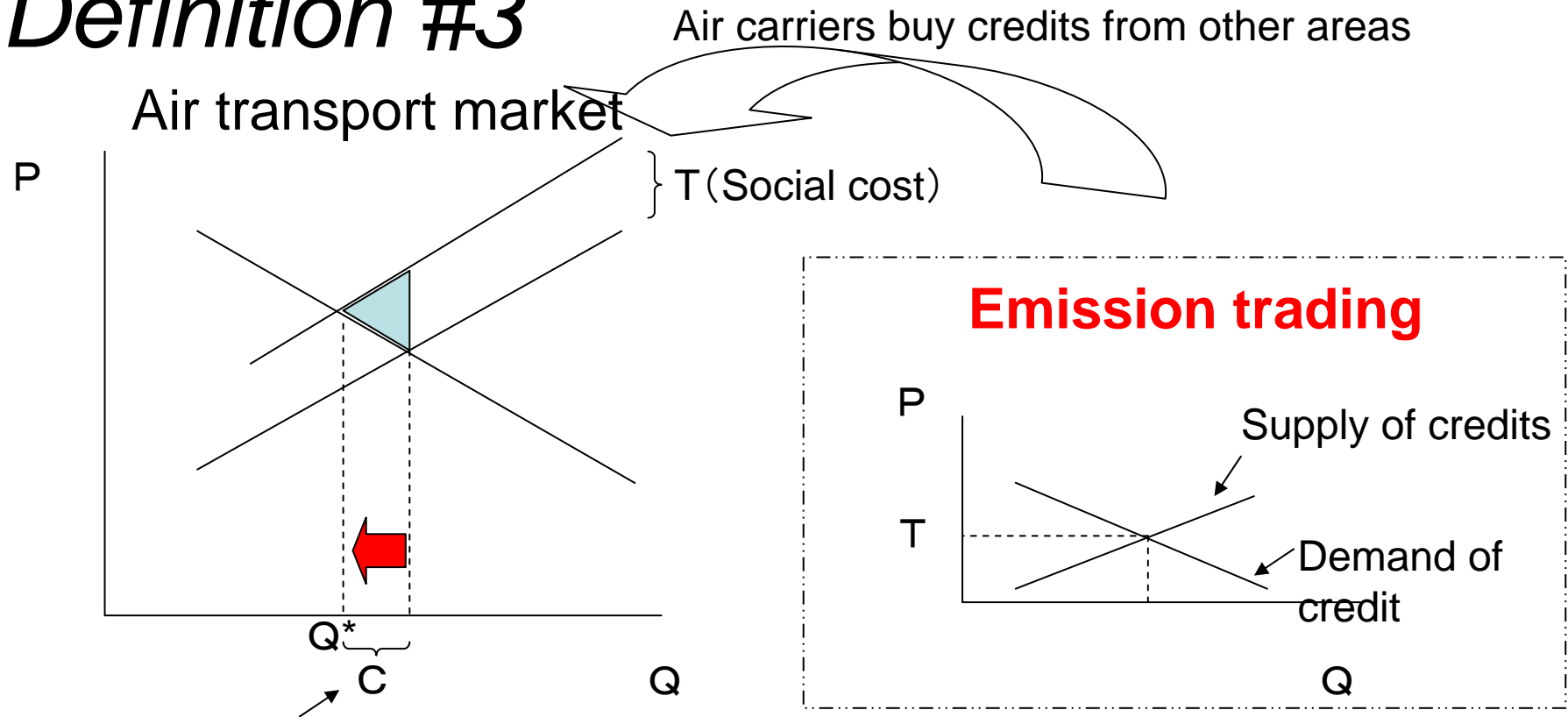
** New efficient aircrafts, efficient operational measures, alternative fuels, fly less? etc.

Basic Concepts



Basic Concepts

Definition #3



- Too much consumption/production (C) that causes excessive CO₂ emission and dead-weight loss (◀)
- Impose cost equivalent to the social marginal cost of CO₂ to reduce emission and dead-weight loss in air transport market
- Could mitigate CO₂ in other areas through emission trading

Basic Concepts

Definition #4

➤ **Improving Intensity**

CO₂ per RPK, RTK per
Gallon of fuel, etc.

or

➤ **Reducing Absolute**

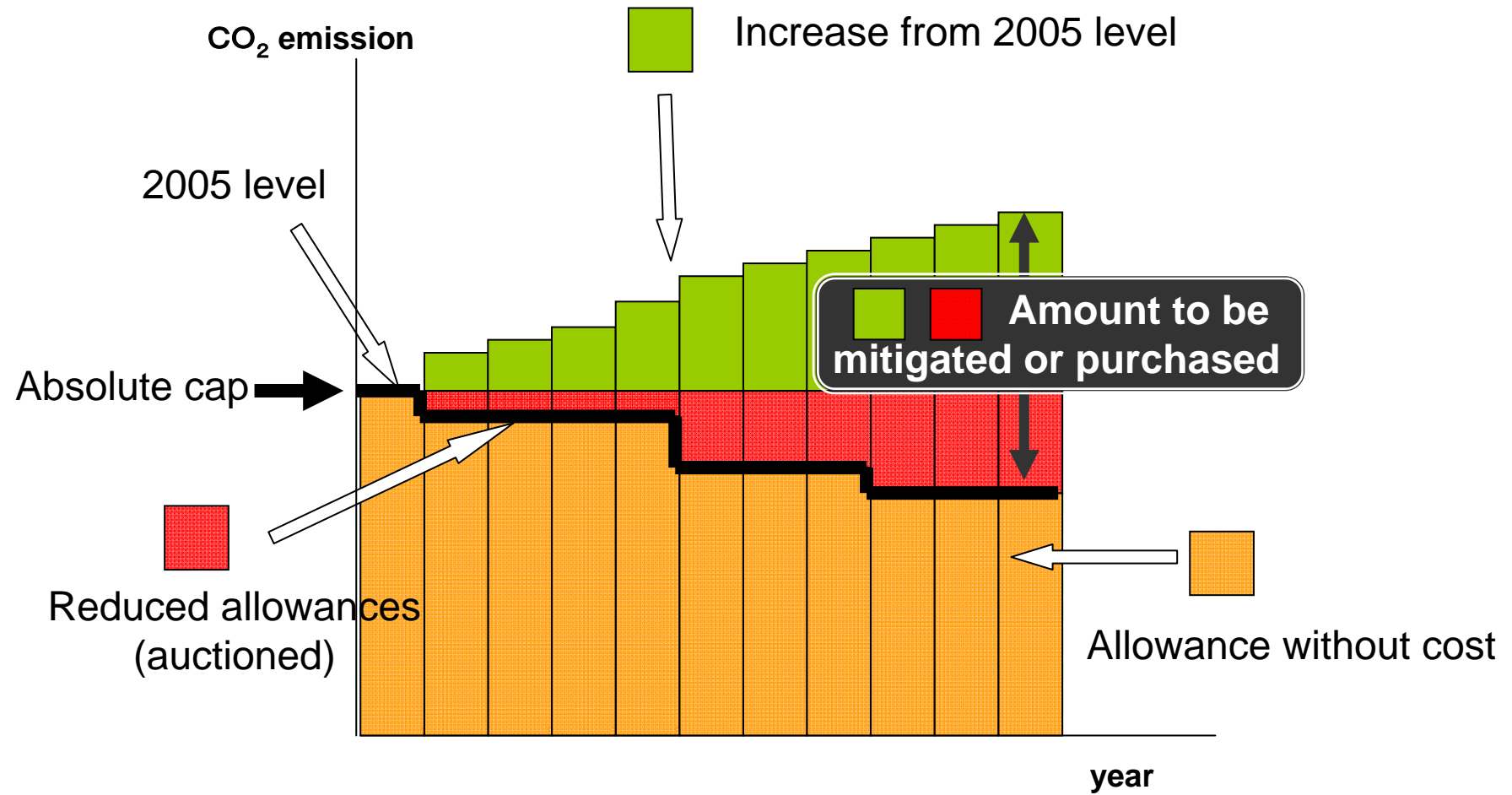
Emission CO₂ ton per annum

➤ **What could intensity cap do?**

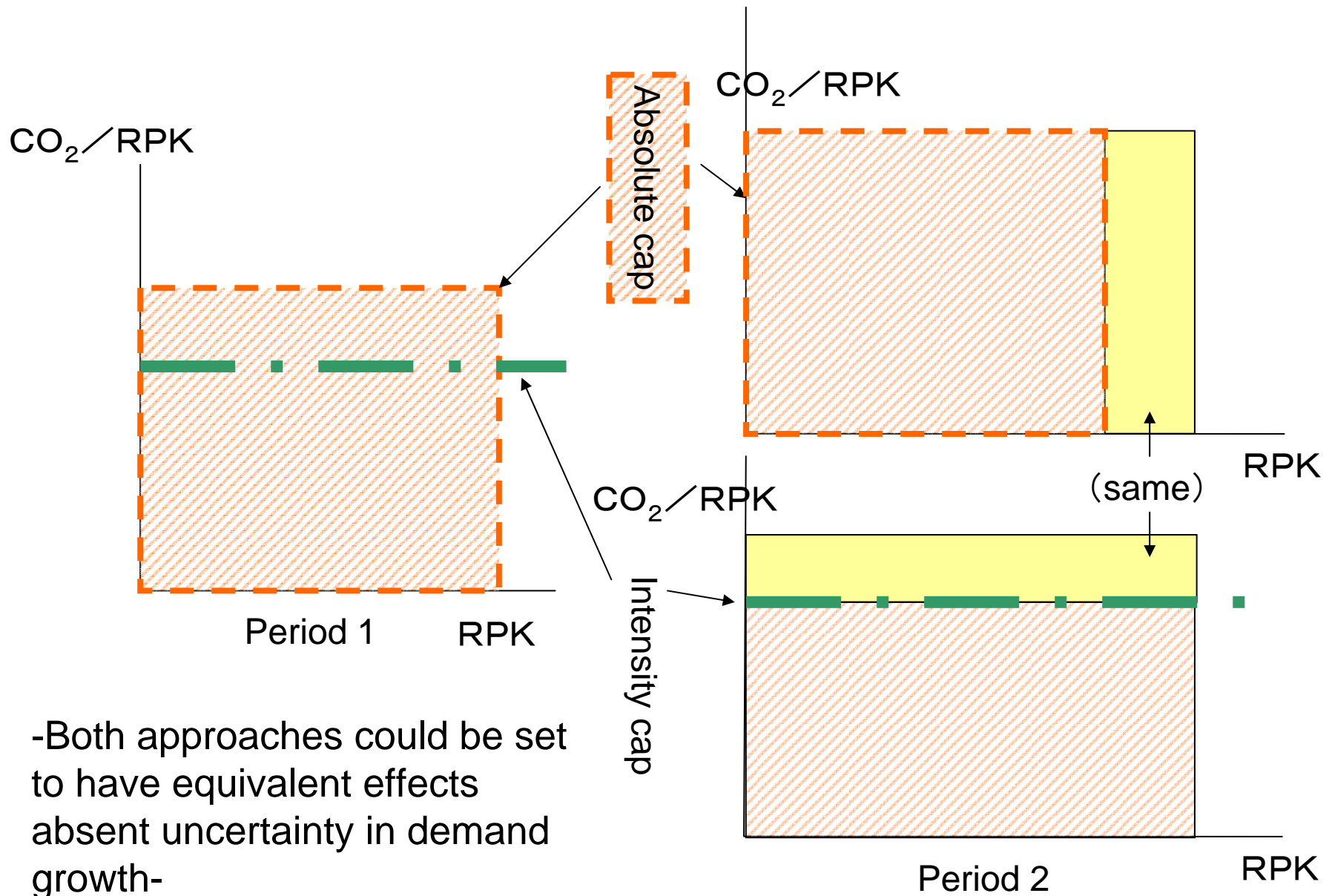
Intensity Targeting

- **Intensity targeting is more equitable when there is discrepancy in growth**
- **Intensity cap could be devised to achieve effects equivalent to absolute cap**

Absolute Cap



Absolute & Intensity Caps



-Both approaches could be set to have equivalent effects absent uncertainty in demand growth-

Intensity cap

- **Compatible with technology driven initiatives**
- **Capable of addressing multi-agent collective goal-seeking needed in international political economy**

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Thank you for your attention

