

CGE Analysis

~ How nuclear power generation affects marginal cost ? ~

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About model -sectors and commodities-

- Original data (IO table by METI)
 - 107 sectors
 - 113 commodities
- Integrated data
 - 41 sectors
 - 46 commodities

About model -environment and year-

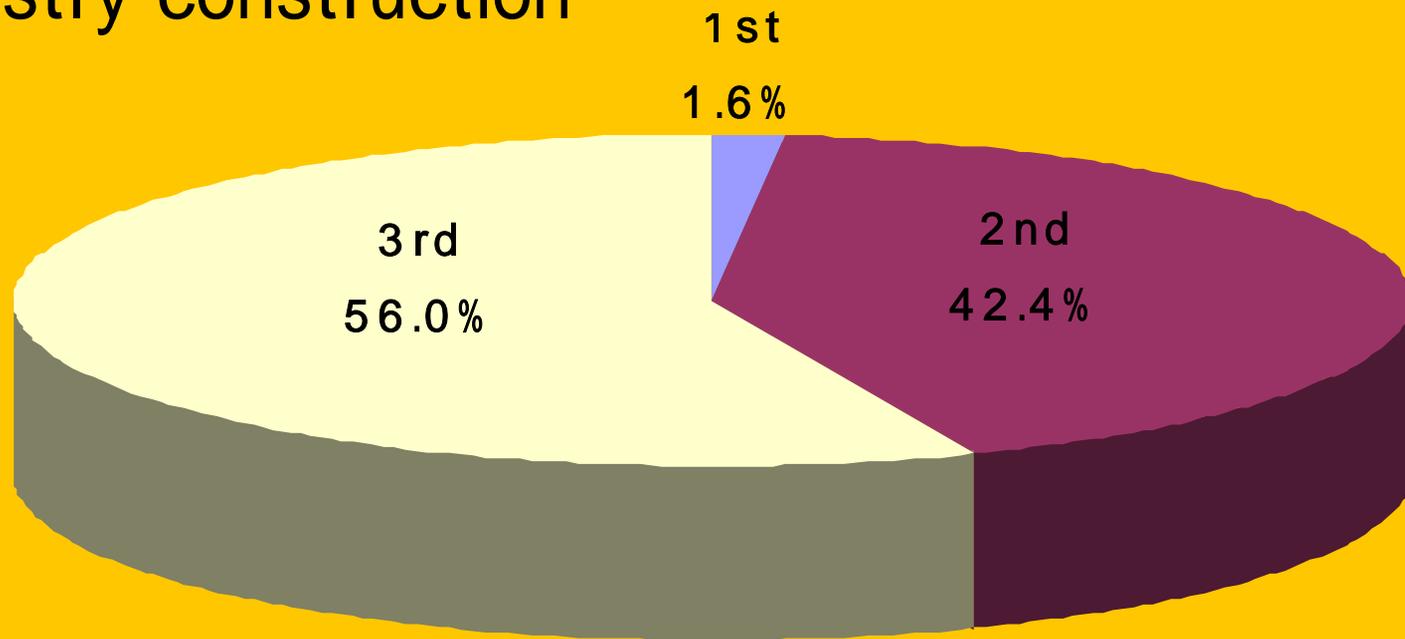
- Treated environment
CO₂
- Benchmark year and Target year
From 2000 to 2010
Recursive calculation

Analysis on benchmark year

- GDP

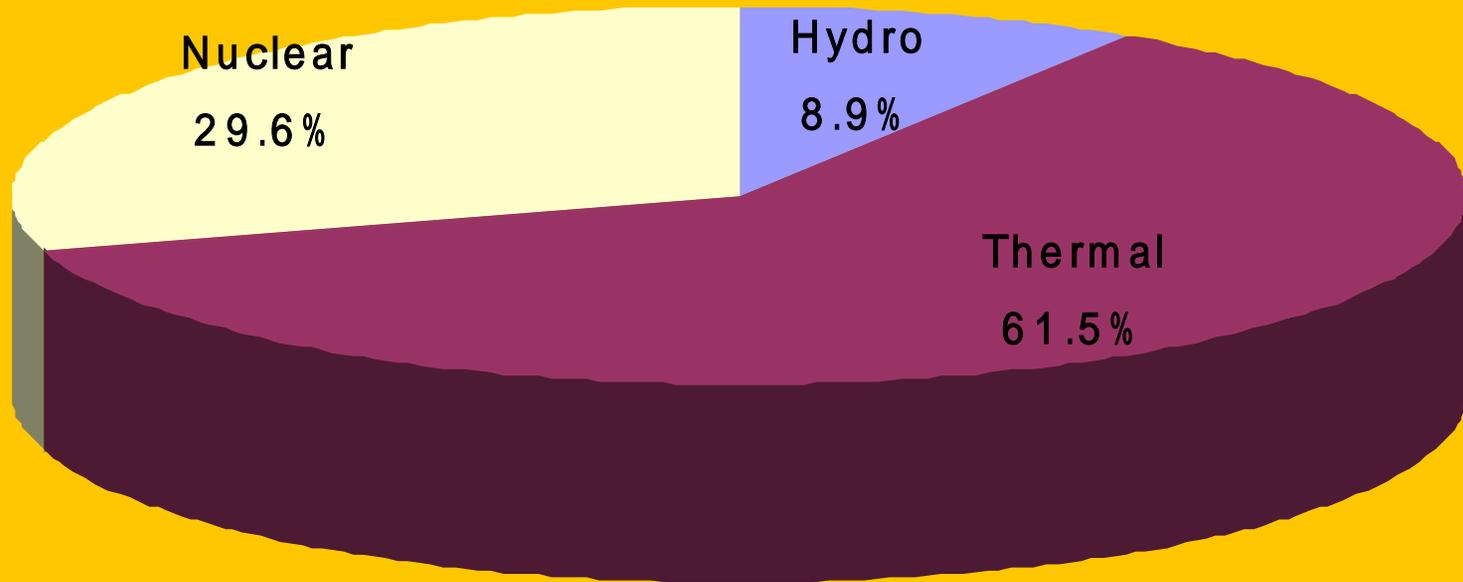
About 520 trillion yen

- Industry construction



Analysis on benchmark year

- Power generation construction



Purpose and Method

- Evaluate how the reduction depends on nuclear power generation

- Increase scenario

Annual 1% increase of nuclear power generation
lower limit

- Decrease scenario

Annual 0.1% decrease of nuclear power generation
upper limit

Purpose and Method

- Estimate marginal reduction cost

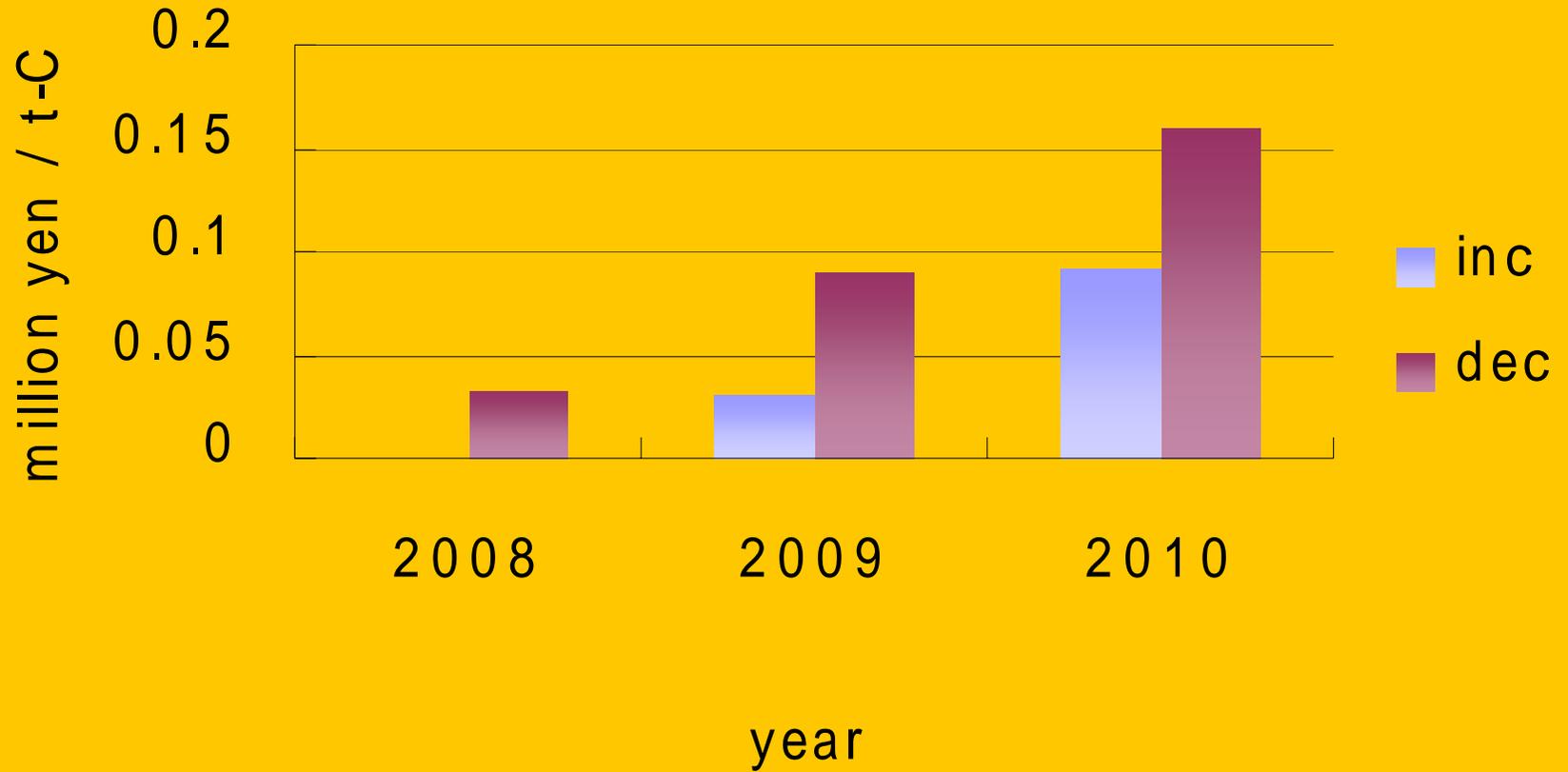
MOE represents 0.6% increase of emission in 2010 compared with 1990 (means annual 0.04% decrease)

In this analysis, I assume annual 0.1% decrease of emission right

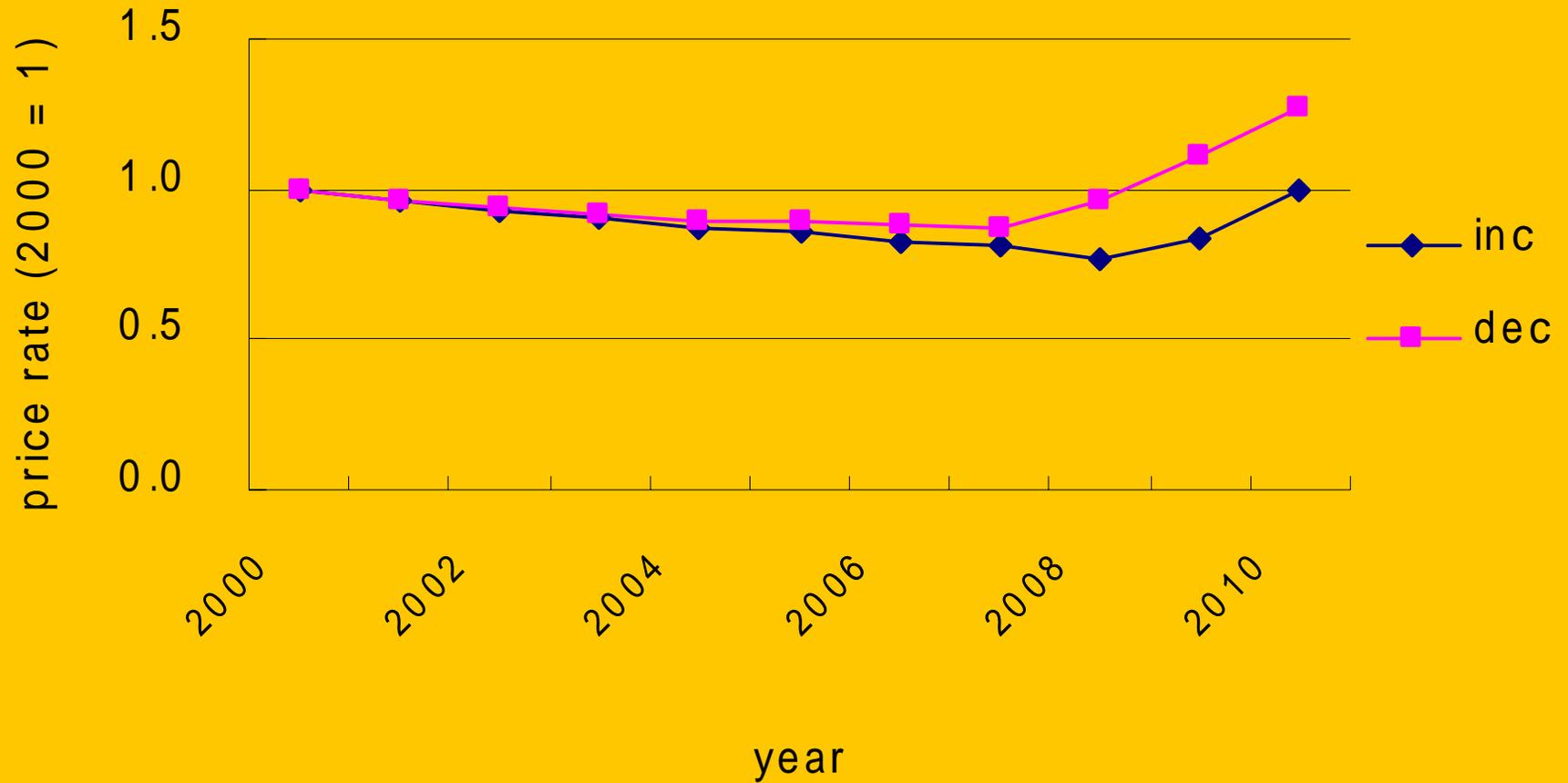
Excess emission demand generates the price of emission right

Output

Output (Marginal cost)



Output (Price of electricity)



Conclusion and problem

- Increase of nuclear power generation makes marginal cost and electricity price lower than the decrease case

But...

- Various costs and risks to increase nuclear power generation are not considered in this analysis