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Environmental Economics and Environmental Policy
No. 6

1. CAC and MBIs

Conventional Approach: Public Nuisance; CAC

1. Performance Based
2. Technology based

Economic (Neoclassical) Approach for Market Failure

1. Internalization of social cost: Pigovian Tax, Baumol and Oats Tax
2. Property (Ownership) of Environment (Marketalization)

Coase Theorem: Ronald Coase(1960), the Problem of Social Cost, *J. of Law and Economics*

Dales, J. H. (1968), Pollution, Property, and Prices, University of Toronto Press

ETS

TDR, Air Rights

Static Efficiency and Dynamic Efficiency

Innovation: Porter Hypothesis

2. MBIs: Pollution (Emission) Rights Trading

2.1. Cap and Trade System

Concept of Emission Right: Cap and Trade System

Initial Cap Allocation of Emission Rights: efficiency and fairness

Baseline (Grandfathering) for free allocation

Benchmarking for free allocation

Auctioning

Design of System

Banking

Borrowing

Monitoring and Sanction

2.2. SOx and NOx in USA

USA: 1990 CAA Amendments, CAP Program for SO2 (EPA Acid Rain Program)

Phase Ⅰ(1995-2000): 110 Electric power plants, from 8.7 Mt (1990) to 4.9 Mt (1999)

Phase Ⅱ(2000-): about 1,000 Electric power plants, from 1.12 Mt(2000) to 9.4 Mt (2006)

NOx CAP Program (2005-2009)

2.3. GHGs (CO_2)

UNFCCC (1992): Kyoto Protocol (1997, enacted 2005): Kyoto flexible mechanism

Emission Trading: ET

Joint Implementation: JI

Clean Development Mechanism: CDM

EU-ETS : EU-ETS Ⅰ(2005-2007), EU-ETS Ⅱ(2008-2012), EU-ETS Ⅲ(2013-2020)

- 1997 Kyoto Protocol and EU
- EU-ETS Phase 1: 2005-2007, Phase 2: 2008-2012, Phase 3: 2013-2020
- Phase 1: 25 countries, Big Industrial Plants: 11,500 , Coverage 49% of EU
  Grandfathering 95%, Auction 5%
  Too much EUA, 5% + compare to 2005, Sanction 40EU/t
- Phase 2: 27countries
  Grandfathering and benchmark 90%, Auction 10%
  EUA, Sanction 100EU/t
- UK Auction, 2008/11/19
  Barclay Capital, PJ Morgan, BNP Paribas, Morgan Stanley
  One shot, 4Mt-CO2、Price: 13.60SP/CO2t
- Phase 3: from 2013, annually 1.74% minus 、2020: 21% minus
  2013: Auction, 60%, 2020: 100%

Japan: JVETS(2008)

Voluntary base

523 firms in 2009

Tokyo Metropolitan Government: Environmental Conservation Ordinance (2008)

25% reduction in 2020 (base year 2000)

Grandfathering: baseline x (-6% ~ -8%)

ETS Ⅰ(2010-2014)

ETS Ⅱ(2015-2019)

Plants and Offices >1,500kl/year

About 1,300 plants: 80% Offices and Commercial Facilities

13% of total CO2 in Tokyo

ICAP (International Carbon Action Partnership): EU, USA (States 2009), Canada (2010), NZ (2008), Australia (2011)

3. References

Field, B. and M. K. Field (2009), *Environmental Economics: an Introduction, 5th ed.*, McGraw-Hil

Matsuoka, S. (2000), Implementation of environmental policy in the developing countries: Regulatory Instrument and their efficiency, *Journal of International Development Studies*, 9 (2), pp.11-36. http://www.f.waseda.jp/smatsu/

4. Schedule of Course Work

1. Introduction: Theory and practice of Environmental Economics and Environmental Policy (9/28)

Part 1: Historical Development of Environmental Policies

We will review the history of pollution and combating against pollution in Japan.

2. Air Pollution and Policy (10/5), (10/12 will be closed)
3. Water Pollution and Policy (10/19)
4. * Students have to make a short report and presentation about the situation of major pollution issues (air and water) and ambient standards in your home country. (10/26)

Part 2: Theory of Environmental Policies

We will see three basic types of environmental policies, Command and Control (CAC), Market Based Instruments (MBIs), and Voluntary Approach (VA) and their efficiency.

5. CAC and MBIs and the comparison of their efficiency (1) 11/2
6. CAC and MBIs and the comparison of their efficiency (2) 11/9
7. Voluntary Approaches and theory of Policy Mix 11/16
8. Climate Change Policy 11/30
9. * Students have to a short report and presentation about the pollution control policy (air, water and climate) in your home country. 12/7

Part 3: Economic Evaluation on Environmental Policy and Project

In this part, we will discuss policy evaluation and economic evaluation of environmental policy, focusing on Cost of Illness (COI), Stated Preference (SP), and Revealed Preference (RP).

10. PDCA Cycle and Policy Evaluation 12/14
11. Cost Benefit analysis in Environmental Policy 12/21

12. Economic Valuation on Environmental Policy-COI, SP and RP 1/11

13. Contingent Valuation Method (CVM) and Travel Cost Method (TCM) 1/18

14. The Design of Environmental Policy 1/25

15. * Students have to a short report and presentation about Policy Evaluation of the pollution control policy (air, water or climate) in your home country. Concluding remarks 1/25