# ECON4910 Environmental economics, Spring 2015

**Michael Hoel:**

**Lecture 13: Supply-side climate policy**

Updated March 16, 2015

Please bring lecture note to lecture.

*Reading:*

Hoel (1994)

Harstad (2012)

**Outline of lecture:**

1. The effect of taxes on use and production of fossil fuels when all countries cooperate (Hoel)
2. Only some countries have a climate policy; carbon leakage (see below)
3. Optimal combination of demand and supply policies (Hoel)
4. Reducing the supply of marginal resources (Harstad)

**Carbon leakage**

*Reduced demand*

Countries A and B with demand shares  and 

Reduced demand in country A

Market equilibrium



where  is a shift parameter and  initially.



Demand change in A: 

Demand change in B: 

Leakage is defined as increase in B relative to reduction in A:



Defining  and  and inserting gives





*Reduced supply*

Countries A and B with supply shares  and 

Reduced supply in country A

Market equilibrium



where  is a shift parameter and  initially.



Supply change in A: 

Supply change in B: 

Leakage is defined as increase in B relative to reduction in A:



As above,  and  , now giving



