EE375 Applied Economics for Natural Resources and Environment
Semester 1/2021 (August 9 - November 27, 2021)
Instructor: Dr. Supawan Saelim

Quiz 3

(5 points)

Time: 29 October 2021 at 14:50-15:20 (30 minutes)

There are 2 questions. You need to answer all two questions. Please **submit** your answers in a PDF file with a file name "**Quiz3_StudentID_FirstName Surname**" via BE Moodle class before **15:30**.

Question 1: (2.5 points)

"Thailand will formally announce a new pledge to achieve carbon neutrality by 2065 at the COP26 in UK in November 2021."

a. What could be the reasons driving Thailand to set carbon neutrality target at COP26?
b. What policies could be used to achieve carbon neutrality in Thailand?

Question 2: (2.5 points)

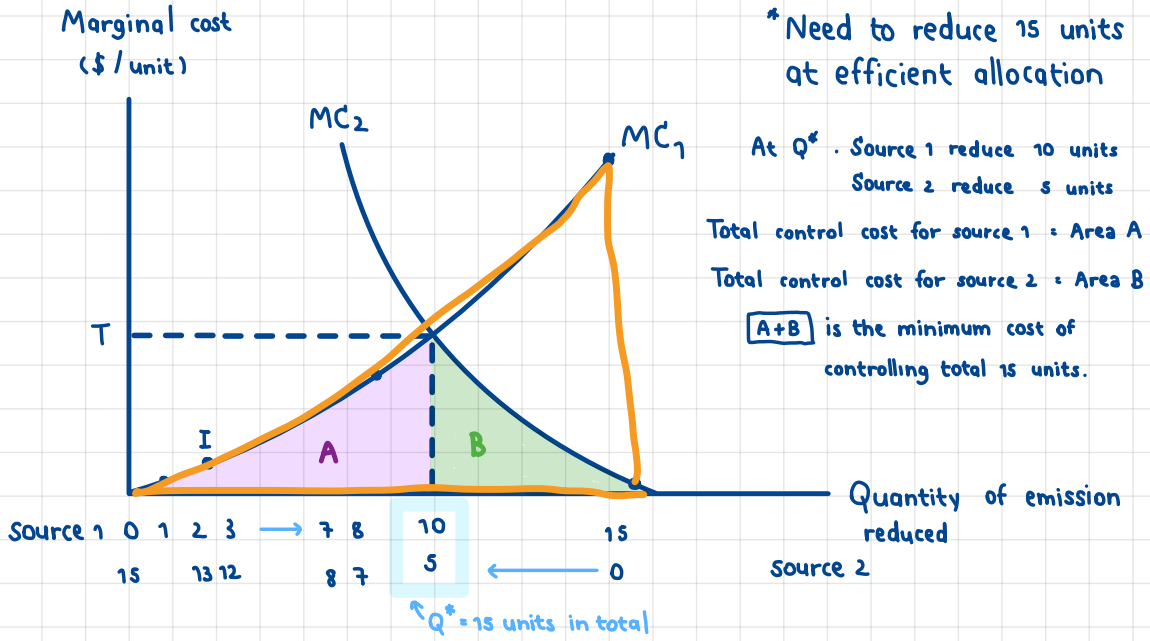
"A cost-effective allocation of a uniformly mixed fund pollutant is where marginal costs are equalized for all sources or firms." Do you agree with this statement? Explain the reasons supporting your answer.

1) a) - Climate change is one of the most concerning issues.
- Thailand as one of Paris agreement
- Long-term low greenhouse gas emission development.
- COP26 provide financial support.
- Slow the Cilmate change crisis.

b) Use Mitigration Policies

Carbon taxes and emission trading systems.
- Set a direct tax to the price of fossil fuels.
- Change relative price between renewable and fossil fuel resources.
- sets a limit or cap the level of emission.

2) ★Example



*Need to reduce 15 units at efficient allocation

At Q* . Source 1 reduce 10 units
Source 2 reduce 5 units

Total control cost for source 1 = Area A

Total control cost for source 2 = Area B

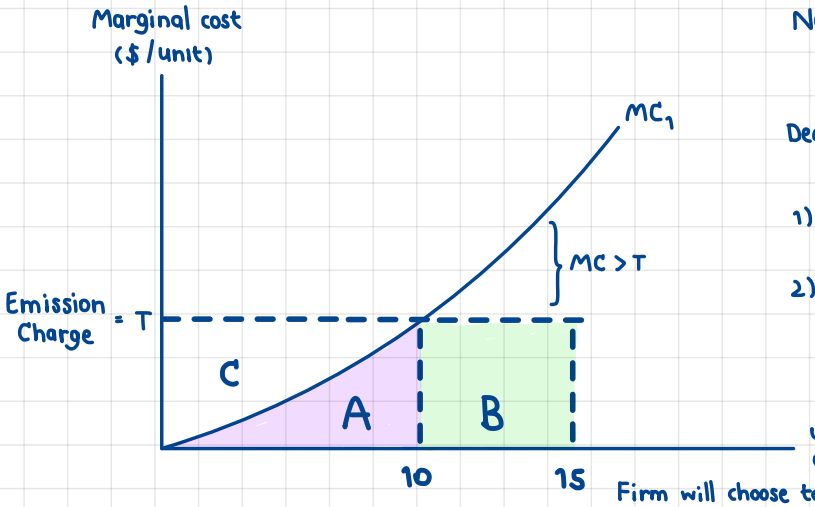
A+B is the minimum cost of controlling total 15 units.

I agree b/c if MC is not equal, there will be additional cost and Equ☑ point is the minimize cost to reduce the cost of firm A, B.

In the orange area, it will have extra cost because the orange area is very bigger than area A

There are two approach

1. Emission Charge



Need total 15 units of emissions (desired / efficient level)

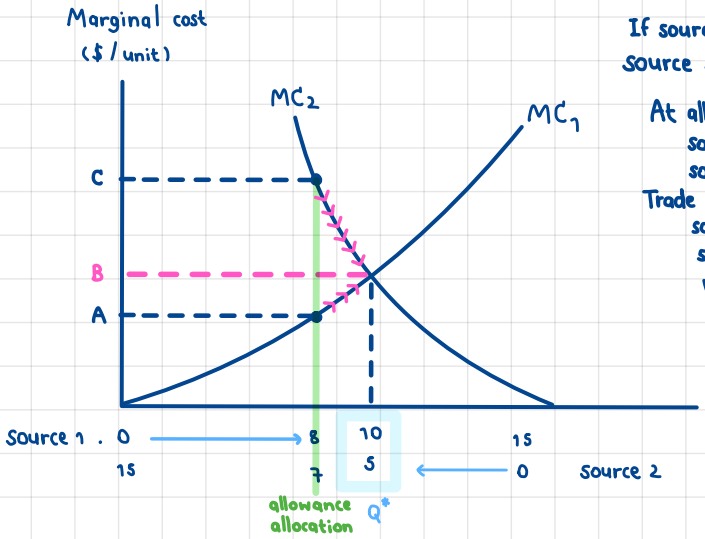
Decide: 1) not control and emit 15 units of emission
2) control & reduce emissions

1) Not control : Pay emission charge = T + 15 unit (A+B+C)

2) Control : Pay control cost = Area A
Emission charge = Area B

Firm will choose to control at point MC = T
Source 1 cont // d 10 units and emit 5 units

2) Cap-and-Trade



If source 1 is allocated 7 allowance to emit (need to control 8 unit)
source 2 is allocated 8 allowance to emit (need to control 7 units)

At allowance allocation,
source 1 have $MC_1 = A$
source 2 have $MC_2 = C$
} $MC_2 > MC_1$
incentive to trade allowance

Trade occur,
source 1 would be better off if allowance price > MC_1
source 2 would be better off if allowance price < MC_2
When allowance price = B = MV of allowances

.. Source 1 control 10 units (sell 2 allowance)
Source 2 control 15 units (by 2 allowances)
@allowance price = B