

Temporal Emission Trading Markets

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Spatial markets

- Non-uniformly mixed pollutants
- If there are two points in space, 'receptors', where quality matters, have two markets
- Each market is for pollutants that impact on one receptor.
- Usually approximated by zones or limits on directions of trade



Greenhouse gases

- 6 greenhouse gases: CO₂, methane, nitrous oxide
- Not strictly accumulative
- Currently compare using global warming potentials which assume a target 100 years away.
- In reality we are concerned about the path of concentrations



Multiple targets with 'vintage' emission units?

Example

Ten types of unit created – different 'vintages' matching 10 year periods.

Total number of units of each vintage is equal to concentration target for that year relative to currently committed concentration



Initial period: two targets, 20 and 100
year

- CO₂ emissions must be matched by two units: vintages less than 20 years and 100 years
- Methane emissions must be matched by one unit: vintages less than 20 years only



Next commitment period

- Old vintage units (dated before current period) expire
- A new vintage of units is created, 110 year units
- Targets which must be matched move out by 10 years



Advantages

- More accurate targetting across gases
- Address both short and long term targets
- Flexibility (banking/borrowing) over longer period



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