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Emissions trading – European Union experiences

Dr. Regina Betz

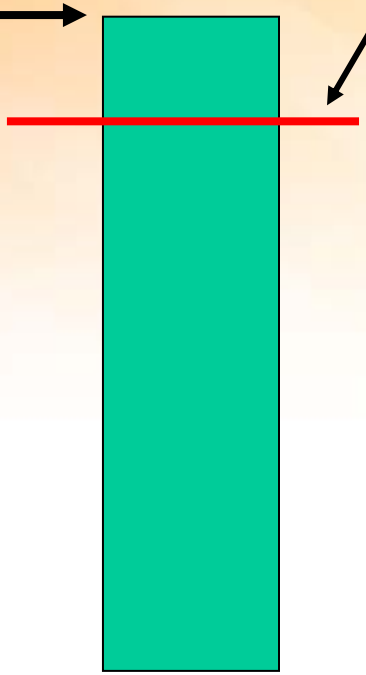
Content

- What is emissions trading?
  - Advantages
- Baseline and credit vs. cap and trade
- Design options
- EU ETS
  - Overview
  - Phase 1: lessons learnt
  - Phase 2: outlook
- Conclusions

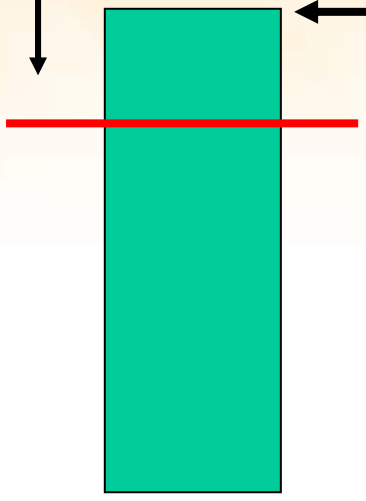
Emissions trading I

Emissions **target =** emissions reduction

Emissions (t CO_2)



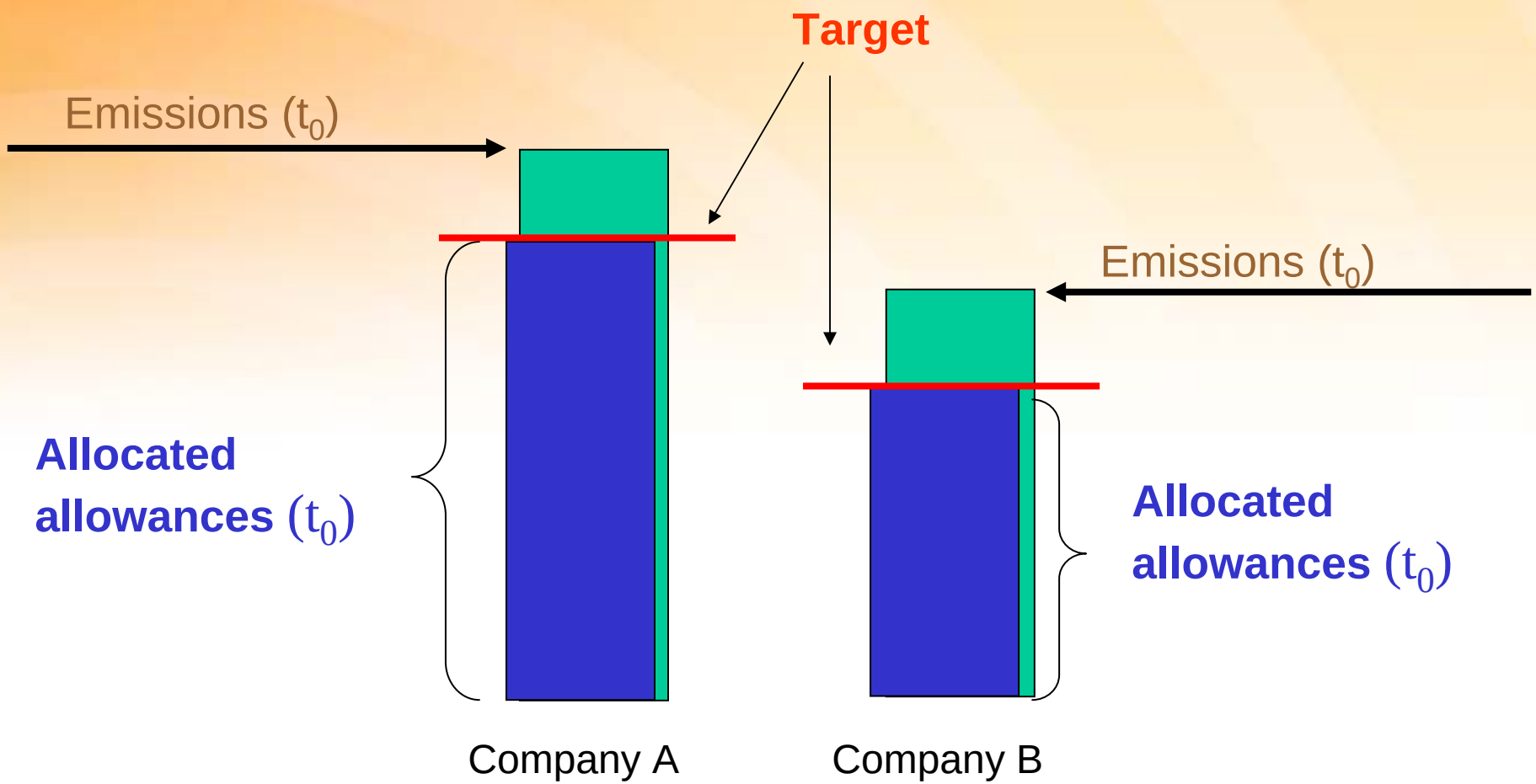
Emissions (t CO_2)



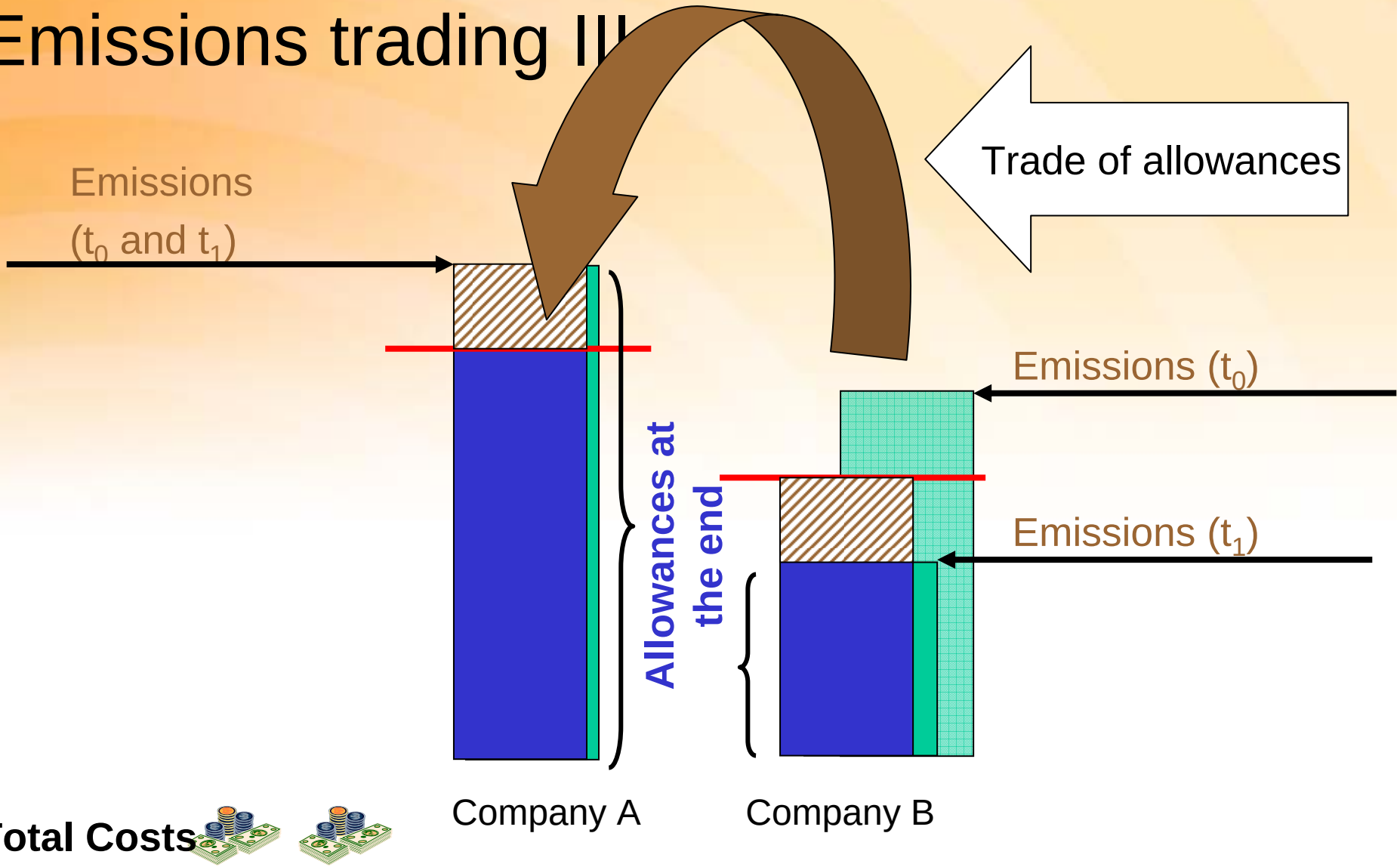
Company A Company B

Total Costs

Emissions trading II



Emissions trading III



Total Costs

Advantages of emissions trading

Emissions reductions are reached at least costs

Or

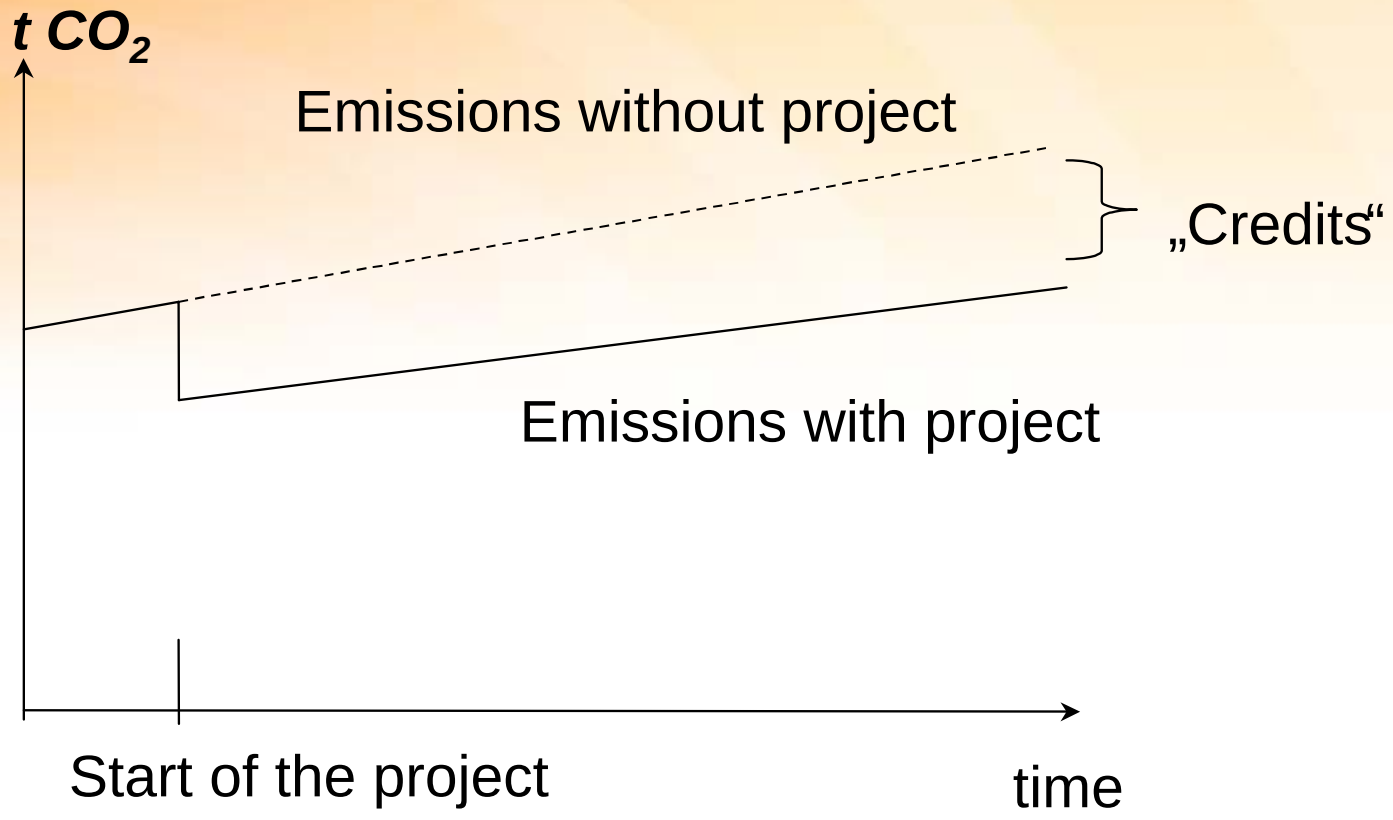
Reduction is maximised at given costs

- Emitting is not for free anymore (a price exists)
- Awareness with regard to Greenhouse Gas Sources is increased
- Reduction options are discovered
- Incentives for innovation (emissions reducing techniques) is given

Baseline and credit vs. Cap and trade

Baseline and credit	Cap and trade
Only emissions reduction compared to baseline or target are tradable	Allocated allowances are tradable
Ex-post Credits are generated after verification (and certification)	*Ex-ante* Allowances are allocated to covered entities
Wide participation in credit generation	Tradable surplus of allowances can only be created by covered entities
Overall reduction **not ensured**	Overall reduction **ensured**
Examples: NSW Greenhouse Abatement Scheme Clean Development Mechanism Joint Implementation	**Examples:** EU Emissions trading Article 17 of Kyoto Protocol Proposed State Based Scheme

Baseline


t CO_2
Emissions without project
„Credits“
Emissions with project
Start of the project
time

Design options

- **Coverage**: Liable entity, Gas, Accountable unit
- **Target:** Relative or fixed
- **Unit to trade:** CO2, all greenhouse gases
- **Allocation:** existing entities, new entities, Early Action, Exceptions
- **Treatment of closure**
- **Flexibility:** banking and borrowing
- **Monitoring/ reporting / verification**
- **Sanctions**
- **Technical aspects:** yearly surrendering, phase

Brief overview on EU ETS

- A cap-and-trade type scheme …
- Operated in phases: 2005-07, 2008-12 etc.
- Covers initially direct CO_2 emissions of major emitting sectors (close to half of CO_2 emissions of EU) -> optionally from 2008 further GHGs
- Banking and borrowing from 2007 to 2008 not allowed
- Harmonised monitoring, reporting and verification of CO_2 emissions based on Monitoring Guidelines
- Harmonised financial sanctions for non-compliance (40 €/t in 2005-2007 / 100 €/t from 2008) + surrender missing allowances + public notification
- Links to project credits established – no forestry credits allowed
- Partially harmonised allocation rules: 95 % for free 2005-07 and 90 % in 2008-2012, rest to be auctioned

EU ETS I

- First phase (2005-2007): Lessons learnt
  - Emissions trading works but design is crucial
  - Marginal reductions compared to inflated emissions projections will lower effectiveness
  - High price volatility closely linked to information disclosure
  - Electricity generators benefits from free allocation (windfall profits)

EU ETS II

- Second phase (2008-2012): Outlook
  - Major role for EU Commission in tightening allocation and increase effectiveness of scheme
  - Less price volatility since banking into the future allowed
  - Quantitative cap on use of international credits reduced in order to ensure domestic action
  - More use of auctioning and less allocation for free to electricity generators to lower windfall profits

Conclusions

- Emissions trading increases cost efficiency
  - Councils are able to meet a higher target with given budget or
  - Councils can meet the agreed target at lowest costs
- Cap and trade beats baseline and credit schemes
  - Cap ensures that overall reduction is reached and not affected by growth in emissions elsewhere
  - Councils need to set a cap (based on a reduction target in %)
- Trading scheme will increase information sharing and make reduction options, potentials and costs transparent
  - Councils will determine their reduction cost curves

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Pathways to abatement

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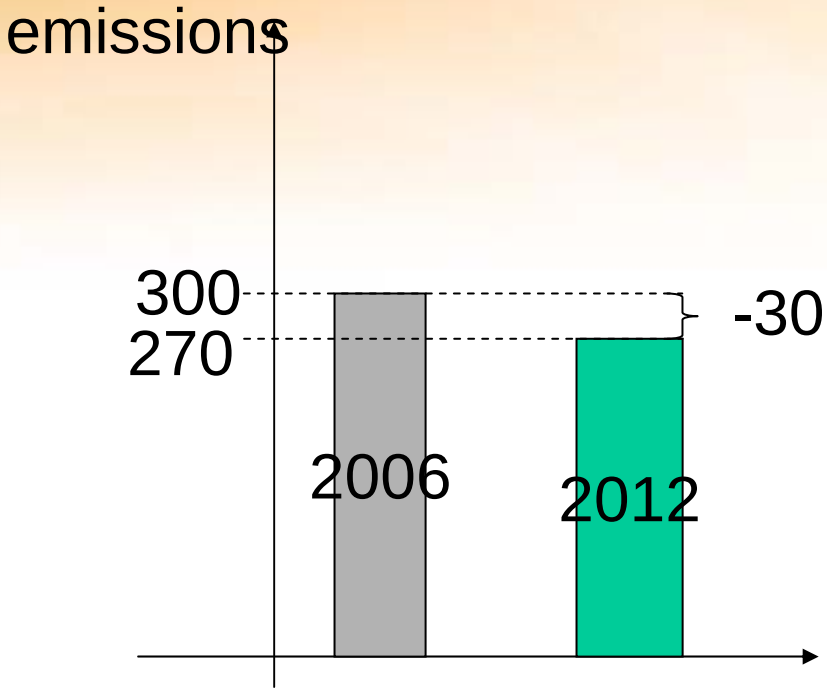
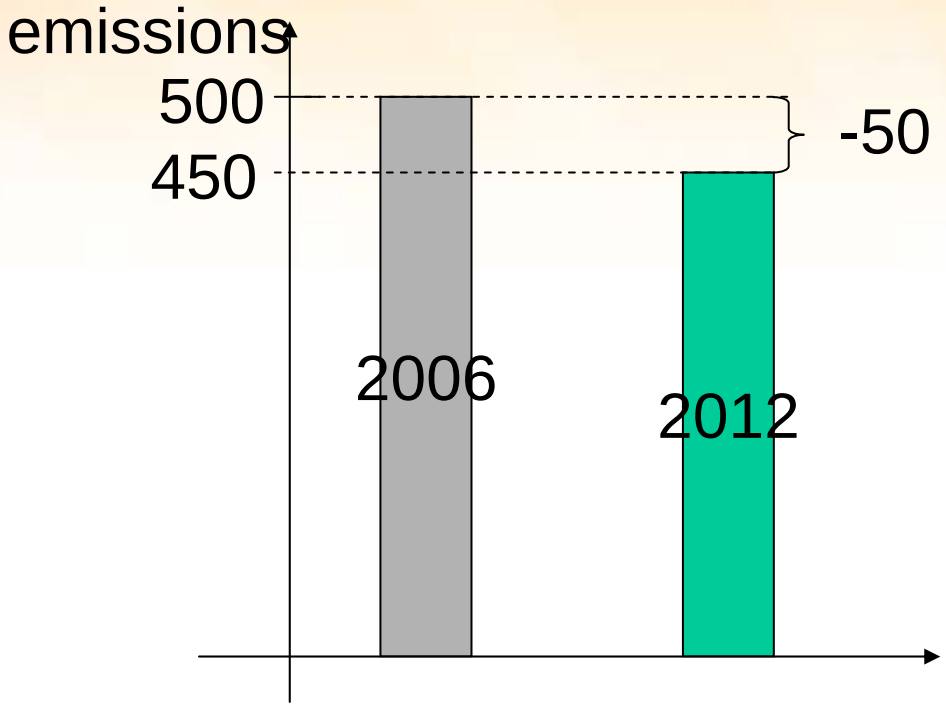
Example – Target setting

2012: -10% compared 2006 or -20% compared to Business as usual (BAU)
2006 = 300t + 500t = 800t
2012 = 270t + 450t = 720t = cap

Reduction against BAU: -160t



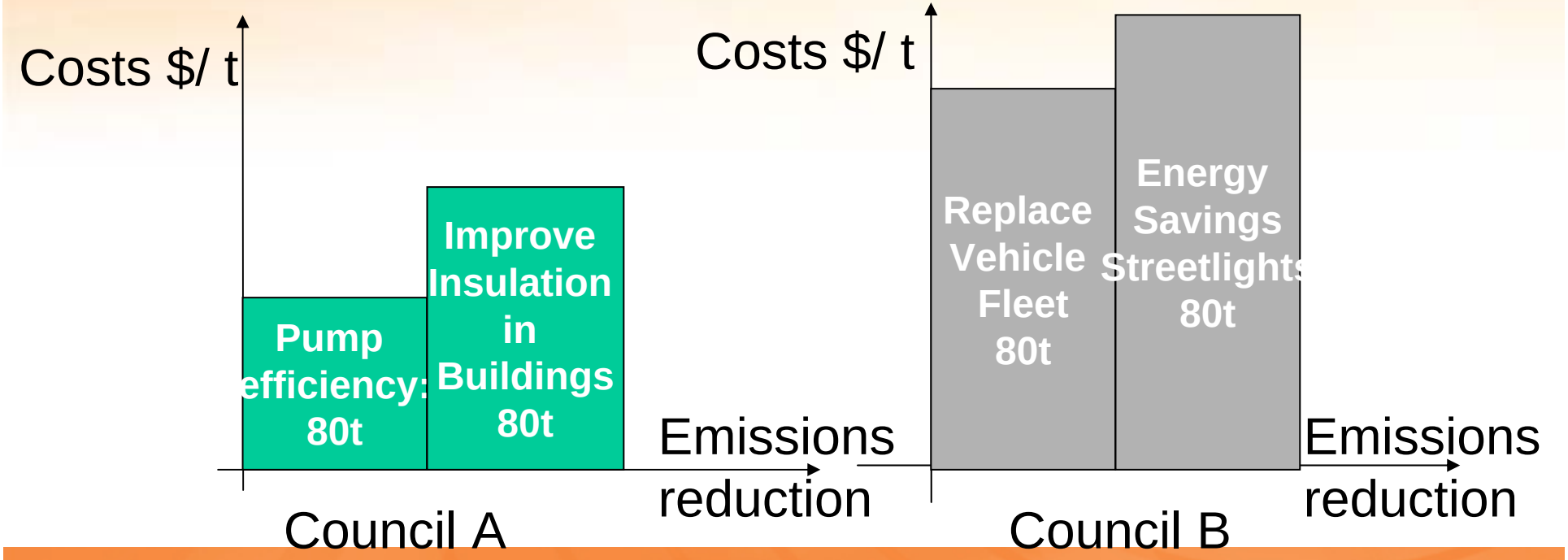
Council A



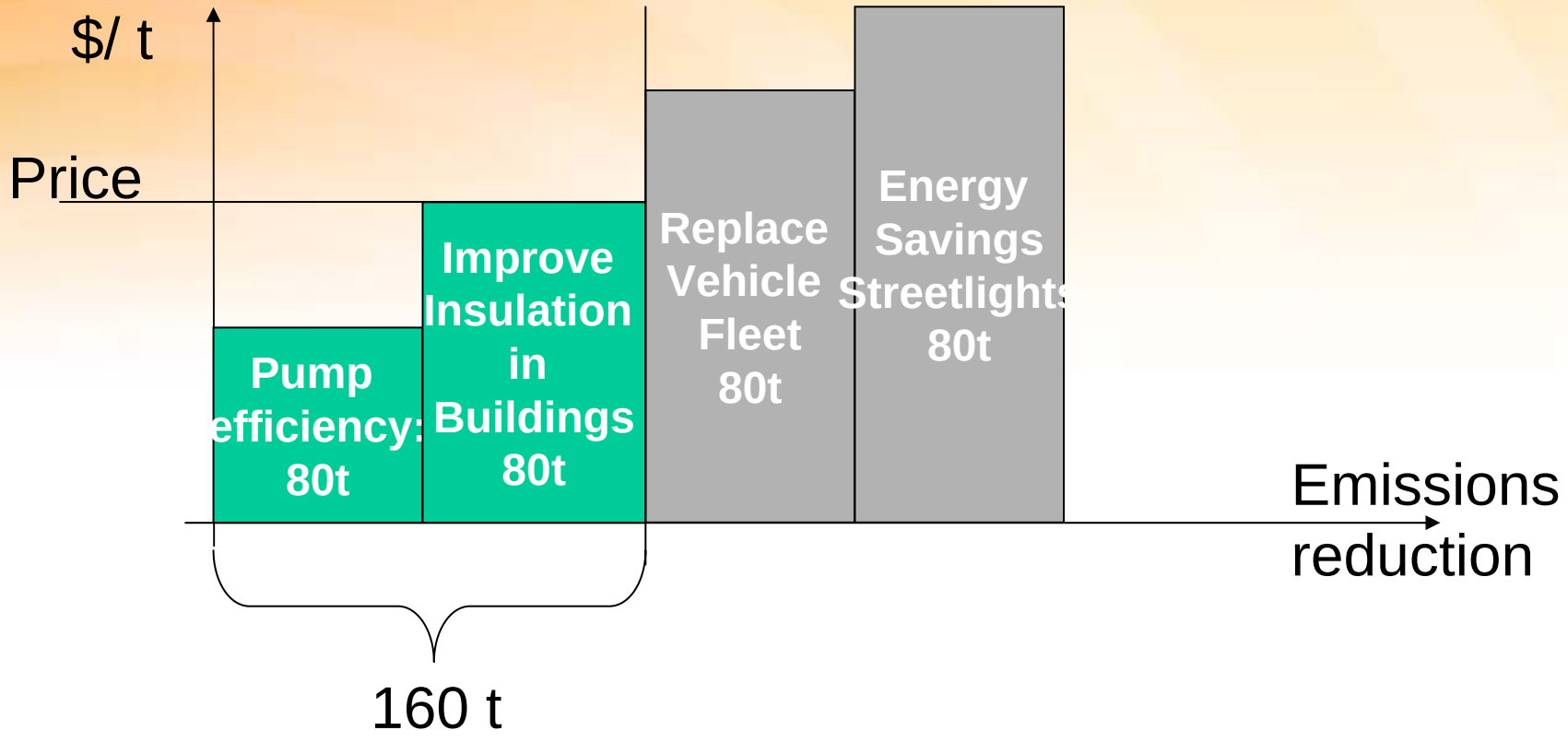
Council B

Abatement cost curve

- Identify abatement measures
- Identify abatement potential
- Identify costs for abatement measure



Determine Aggregate Abatement Curve



Conclusions

- Only council A will reduce and implement the following measures:
  - Pump efficiency
  - Insulation in buildings
- Council B will “buy” from council A permits for 100t
- Total reductions (160t) are met at least costs
- To ensure total cap of 720t is met: actual emissions are measured