Benchmarking in Belgian Allocation Plans

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Voor de
promotie van WKK
in Vlaanderen

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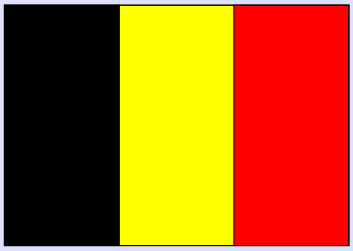

Belgium

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Belgium: an overview (1)

- Emissions in 1990 (approximate values):
  - GHG : 140 Mton
  - CO_2 (total) : 120 Mton
  - CO_2 (combustion) : 109 Mton
  - CO_2 (electricity production): 22,5 Mton
- Kyoto-target (burden sharing): -7,5%
- Evolution of emissions:
  - CO_2 1990-2000 : + 8 Mton
    : + 6,67 %

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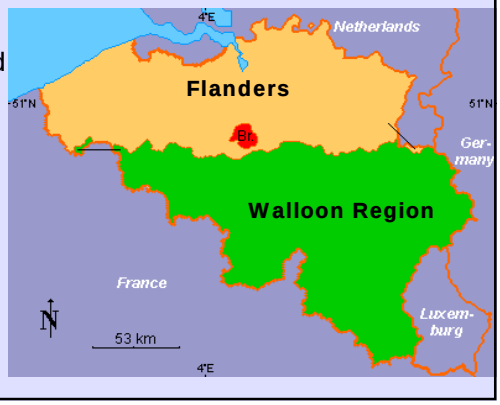
Belgium: an overview (2)

- National Allocation Plan ???
  ➔ 3 Regional Allocation Plans (Brussels, Flanders, Walloon Region)
- Regional allocation plans will be combined into one National allocation plan
- Problem: burden sharing between the regions



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Belgium: an overview (3)

- Last week's newspaper:
  « Federal Minister of Environment has to reconsider how Belgium is going to meet Kyoto targets, and how the effort is spread over the regions. »

  – Flanders: strong increase of industry since 1990
  : CO_2-emissions 1990-2000: + 11%
  – Walloon region: closedown of some polluting industrial sites
  : CO_2-emissions '90-'00: + 1%

  ➔equal percentages (7,5%) or equal efforts/costs?

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Flanders

The Benchmarking Covenant (1)

- Voluntary agreement between an industrial site and government
  - Industries commit themselves to bring/keep their energy-efficiency on the best international standard by 2012
  - Government guarantees not to impose other measures for those industrial sites that signed the covenant, e.g. energy- or CO_2-levy
- After signing in, an 'Energy Plan' has to be drawn up, containing all measures necessary to reach top-class level

The Benchmarking Covenant (2)

Who can sign in?

- Large energy intensive industries, from all industrial sectors
  - First: total primary energy consumption of a site > 0,5 PJ/year
  - Later: in some cases (ET) also smaller sites (> 0,1 PJ/year) can sign in
- Power sector is excluded (however ET)
- 176 sites signed in yet

The Benchmarking Covenant (3)

What is the Best International Standard?

- full benchmark : best decile of all similar installations in the world
- regional benchmark : the average of all similar installations in the best region
- best practice method : energy consumption of the very best similar installation + 10%
- if none of the previous methods is feasible, the potential energy efficiency improvements will be estimated (audit)

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The Benchmarking Covenant (4)

Why did Government prefer this Covenant?

- In order to meet Kyoto, Government:
  - doesn't want absolute caps for industry, as this would obstruct expansion
  - doesn't want equal reduction percentages for each enterprise either, as this would
    - harm industries that have taken early action
    - harm growing industries
    - favour industries that are still spilling
    - favour industries cutting down
  - does want objective standards

➔ Benchmarking method (cf. the Netherlands)

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Allocation Method (1)

- It is estimated that 170 sites/34 Mton CO_2 are involved.
- As Flanders has to make substantial emission reductions, an allocation method based on objective standards was preferred

  ➔ Benchmarking
- Not all sites affected by ET did sign the covenant
  - Covenant is a voluntary agreement
  - Power sector excluded

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Allocation Method (2)

1. *Industrial sites that signed the Covenant*

Number of allowances =
emissions in 2003 * improvement rate

- Improvement rate based on 'Energy Plan'
- These sites should receive enough allowances, at least if the 'Energy Plan' is executed

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Allocation Method (3)

2. *Industrial sites that did not sign the Covenant*

Number of allowances =
emissions in 2003 * arbitrary improvement rate

- Improvement rate = 0,85 for the period '05-'07
  = 0,70 for the period '08-'12

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Allocation Method (4)

3. Power Sector

- Electricity supplied to a third party:

Number of allowances =
MWh elec. supplied in ref. period * emission factor

- Emission factor :
  - 0,360 ton/MWh for new power plants
  - yearly decreasing value for existing plants, far below the actual average of CO_2-emissions of fossil power plants

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Allocation Method (5)

3. Power Sector

- Heat supplied to a third party:

Number of allowances =
TJ heat supplied in ref. period * emission factor

- The same emission factor for existing and new installations
  - should be based on the emissions of the best available boiler
  - is too low (38 ton/TJ) in first draft

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Allocation Method (6)

- Correction factor will be implemented to bring bottom up analysis in line with top down analysis
  - for all installations affected by ET ?
  - not for installations with BC ?
- Issues:
  - Ex post corrections (increase/decrease of production)
  - Number of allowances reserved for new entrants
  - Treatment of new entrants

Treatment of CHP (1)

- Number of allowances for CHP-installations strongly depends on the license-holder for the installation
  - Industrial company with Covenant
    Enough allowances
    No boost for more qualitative operation of the CHP
  - Industrial company without Covenant
    Not enough allowances, only 85% or 70%
  - Public utilities
    Number of allowances depends on performances of the CHP
- Not clear which method must be used if the industrial company is the license-holder, but electricity or heat is supplied to a third party

➔ Misuse? Switching licenses?

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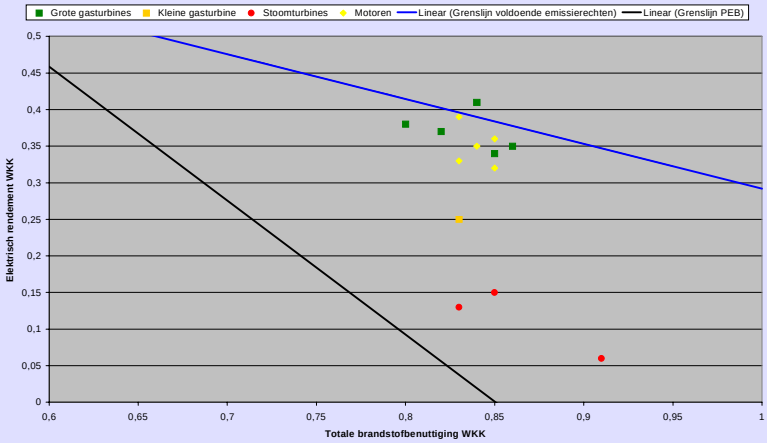
Treatment of CHP (2)

- Extremely low emission factor for heat supply harms CHP-installations with lower electrical efficiencies, though they save primary energy!



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Treatment of CHP (3)

- To avoid misuse and discrimination, the allocation for CHP should:
  - treat cogeneration as a distinct activity, and therefore use one method for all CHP-installations
  - have correct emission factors for both electricity and heat
- We propose:
  - to use the allocation method for the power sector for all CHP-installations
  - to adjust emission factors
  - (eventually) to limit overallocation

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Conclusions

- Only general principles are fixed yet, changes are still possible
- Most efforts required from power sector
  - ➔ shortage of allowances for utilities
    - ➔ rise of power costs
      - » + appr. 2 €/MWh (allowance = 15€)
      - » + appr. 4 €/MWh (allowance = 30€)
- Proposed allocation method for CHP is not an incentive towards more qualitative CHP

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Next steps

- Decision on burden sharing between the regions: within next two weeks
- Draft allocation plan: mid February
- Consultation period
- Final allocation plan

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Wallonia

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The Walloon Allocation Plan

- Similar to Flemish allocation plan
- Shall be based on benchmarking agreements with industrial sectors: 'Les accords de branche'
  - Chemical sector and Paper sector signed in
  - Other sectors can still sign in after 'benchmarking'

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The Walloon Allocation Plan

- Proposal:

  # allowances =
  estimated production * specific emissions

  – Specific emissions: decreasing, and based on 'Accord de branche'

  – Special measures for:
    - early action
    - emissions of CO2 not linked to energy consumption
    - new entrants

The Walloon Allocation Plan

- Consultants were asked to work out the allocation plan
- Draft published 29 January

➔ ???

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