Belgium

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1. SUMMARY

Belgium's 2007 Monitoring Mechanism submission projects total 2010 emissions of approximately 3.7% below the Kyoto base year.

In comparing Belgium's progress to its Kyoto target of 7.5% below base year emissions (134.8 MtCO₂-eq), Belgium is not on track to meet this target 'with existing measures' (WEM) only. Under the 'with additional measures' (WAM) scenario Belgium may reduce the gap to some extent, however this amount has only been quantified for 2020, not 2010.

With the use of 7.04 MtCO₂-eq of Kyoto flexible mechanisms, Belgium's emissions are projected to be 8.5% below base year emissions by 2010, thereby meeting and indeed overachieving its target. Belgium foresees at this moment more use of flexible mechanisms than is strictly needed, in order to account for uncertainties.

All sectors, except transport, are expected to have reduced emissions in 2010 compared to 1990 levels. The greatest reductions relative to 1990 emissions are expected to occur in the Waste and Industrial Process sectors (table 2). Significant reductions are also expected in the Agricultural sector.

2. GHG PROJECTIONS AND PROGRESS TO KYOTO TARGETS

The Kyoto base-year for Belgium is 1990 for CO2, CH4 and N20 and 1995 for fluorinated gases.

Belgium provides only one scenario, WEM, for the first commitment period 2008-2012 (known as '2010'). WEM and WAM scenarios are provided for the year 2020. Belgium also provided three different scenarios for 2020 based on climate assumptions, as domestic energy demand, especially for heating and air conditioning, will be highly dependent on weather conditions.

Belgium's GHG emissions have reduced significantly in certain sectors in recent years, but not enough to meet Kyoto targets, as emissions in other sectors have increased. However, Belgium expects to meet its 2010 target with the use of Kyoto flexible mechanisms.

Sectoral projections for 2010 predict a reduction in most sectors compared to 1990 levels, particularly in the waste sector. The exception is an increase in emissions from transport.

According to 2020 projections, which include additional measures unlike the 2010 projections, overall emissions for Belgium are only expected to be reduced by a further 2% of base year level between 2010 and 2020. The effect of these additional measures therefore seems minor as population growth is expected to be slow (less than 2% over 10 years) during the period and therefore not the primary causing factor.

Table 1 shows, for all gases and main sectors:

- GHG emission projections for the 'with existing measures' (WEM) scenario, as reported by Belgium;
- Historic emissions (in the 'reference year') as reported together with projections. For Belgium the reference year is 2000.

Table 1 Summary of reported projections by sector and by gas in 2010 (Mt CO₂-eq.)

| Carb | on dioxi | de | [N | lethane | | Nitr | ous oxid | le | F | -gases | | | Total | |
|--------------------------|---|---|---|--|---|---|--|---|--|---|--|---|---|--|
| Reference year | 2010 WEM | 2010 WAM | Reference year | 2010 WEM | 2010 WAM | Reference year | 2010 WEM | 2010 WAM | Reference year | 2010 WEM | 2010 WAM | Reference year | 2010 WEM | 2010 WAM |
| 90.1 | 87.9 | NE | 0.6 | 0.5 | NE | 1.3 | 1.3 | NE | NE | NE | NE | 92.0 | 89.7 | NE |
| 33.1 | 31.1 | NE | 0.5 | 0.4 | NE | 0.2 | 0.2 | NE | NE | NE | NE | 33.8 | 31.7 | NE |
| 27.8 | 25.1 | NE | 0.1 | 0.0 | NE | 0.3 | 0.3 | NE | NE | NE | NE | 28.1 | 25.4 | NE |
| 29.2 | 31.7 | NE | 0.1 | 0.1 | NE | 0.8 | 0.8 | NE | NE | NE | NE | 30.1 | 32.6 | NE |
| 23.9 | 24.3 | NE | 0.1 | 0.0 | NE | 0.8 | 0.9 | NE | NE | NE | NE | 24.8 | 25.2 | NE |
| 9.9 | 10.7 | NE | 0.0 | 0.0 | NE | 4.6 | 2.3 | NE | 1.4 | 1.9 | NE | 15.8 | 14.9 | NE |
| 0.1 NE NE 124.0 | 0.1 NE NE 123.0 | NE NE NE NE | 1.8 7.0 NE 9.5 | 0.6 5.7 NE 6.9 | NE NE NE NE | 0.3 5.5 0.3 12.6 | 0.3 4.9 0.3 9.9 | NE NE NE NE | NE NE NE 1.4 | NE NE NE 1.9 | NE NE NE NE | 2.2 12.5 0.3 147.5 | 1.0 10.6 0.3 141.6 | NE NE NE NE |
| | Reference year 90.1 33.1 27.8 29.2 23.9 9.9 0.1 NE NE | Reference year 2010 WEM 90.1 87.9 33.1 31.1 27.8 25.1 29.2 31.7 23.9 24.3 9.9 10.7 0.1 NE NE NE | year WEM WAM 90.1 87.9 NE 33.1 31.1 NE 27.8 25.1 NE 29.2 31.7 NE 23.9 24.3 NE 9.9 10.7 NE 0.1 NE NE NE NE NE NE NE NE | Reference year 2010 WEM 2010 WAM Reference year 90.1 87.9 NE 0.6 33.1 31.1 NE 0.5 27.8 25.1 NE 0.1 29.2 31.7 NE 0.1 23.9 24.3 NE 0.1 9.9 10.7 NE 0.0 0.1 NE NE 7.0 NE NE NE NE | Reference year 2010 WEM 2010 WAM Reference year 2010 WEM 90.1 87.9 NE 0.6 0.5 33.1 31.1 NE 0.5 0.4 27.8 25.1 NE 0.1 0.0 29.2 31.7 NE 0.1 0.1 9.9 10.7 NE 0.0 0.0 0.1 0.1 NE 1.8 0.6 NE NE NE NE NE NE NE NE NE NE | Reference year 2010 WEM WEM 2010 WEM WAM Reference year 2010 WEM WAM 2010 WEM | Reference year 2010 WEM 2010 WAM Reference year 2010 WEM WAM Reference year 90.1 87.9 NE 0.6 0.5 NE 1.3 33.1 31.1 NE 0.5 0.4 NE 0.2 27.8 25.1 NE 0.1 0.0 NE 0.3 29.2 31.7 NE 0.1 0.1 NE 0.8 9.9 10.7 NE 0.0 0.0 NE 4.6 0.1 0.1 NE 1.8 0.6 NE 0.3 NE NE NE NE NE NE 0.3 NE NE NE NE NE NE 0.3 | Reference year 2010 WEM 2010 WAM Reference year 2010 WEM 2010 WEM Reference year 2010 YEAR Reference year 2010 WEM Reference year 2010 WEM Reference year 2010 WEM Reference year 2010 WEM RE 0.2 0.2 0.3 0.3 0.3 0.8 0.9 0.9 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 | Reference year 2010 WEM 2010 WAM Reference year 2010 WEM WEM WEM WEM WEM WEM WAM Year WEM WAM WAM Year WEM WAM WAM WAM Year WEM WAM NE O.0 NE NE NE NE NE NE | Reference year 2010 WEM 2010 WAM Reference year 2010 WEM 2010 WAM Reference year 2010 WAM <th< td=""><td>Reference year 2010 year 2010 year 2010 year 2010 year 2010 year Reference year 2010 year WEM WAM Reference year 2010 year WEM WAM Perence year 2010 year WEM WAM Perence year 2010 year WEM 90.1 87.9 NE 0.6 0.5 NE 1.3 1.3 NE NE NE 33.1 31.1 NE 0.5 0.4 NE 0.2 0.2 NE NE NE 27.8 25.1 NE 0.1 0.0 NE 0.3 0.3 NE NE NE 29.2 31.7 NE 0.1 0.1 NE 0.8 0.8 NE NE NE 23.9 24.3 NE 0.1 0.0 NE 0.8 0.9 NE NE NE 9.9 10.7 NE 0.0 0.0 NE 4.6 2.3 NE 1.4 1.9 <!--</td--><td>Reference year 2010 WEM 2010 WAM Reference year 2010 WEM Reference year 2010 WEM WAM Reference year 2010 WEM Reference wEM 2010 WEM Reference wEM 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM WAM Pear 2010 WEM WAM WAM Pear WEM WAM NE NE</td><td>Reference year 2010 year 2010 wem Reference year 2010 wem 2010 wem Reference year 2010 wem <t< td=""><td>Reference year 2010 year 2010 year Reference year 2010 year WEM WAM Year WEM WE NE</td></t<></td></td></th<> | Reference year 2010 year 2010 year 2010 year 2010 year 2010 year Reference year 2010 year WEM WAM Reference year 2010 year WEM WAM Perence year 2010 year WEM WAM Perence year 2010 year WEM 90.1 87.9 NE 0.6 0.5 NE 1.3 1.3 NE NE NE 33.1 31.1 NE 0.5 0.4 NE 0.2 0.2 NE NE NE 27.8 25.1 NE 0.1 0.0 NE 0.3 0.3 NE NE NE 29.2 31.7 NE 0.1 0.1 NE 0.8 0.8 NE NE NE 23.9 24.3 NE 0.1 0.0 NE 0.8 0.9 NE NE NE 9.9 10.7 NE 0.0 0.0 NE 4.6 2.3 NE 1.4 1.9 </td <td>Reference year 2010 WEM 2010 WAM Reference year 2010 WEM Reference year 2010 WEM WAM Reference year 2010 WEM Reference wEM 2010 WEM Reference wEM 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM WAM Pear 2010 WEM WAM WAM Pear WEM WAM NE NE</td> <td>Reference year 2010 year 2010 wem Reference year 2010 wem 2010 wem Reference year 2010 wem <t< td=""><td>Reference year 2010 year 2010 year Reference year 2010 year WEM WAM Year WEM WE NE</td></t<></td> | Reference year 2010 WEM 2010 WAM Reference year 2010 WEM Reference year 2010 WEM WAM Reference year 2010 WEM Reference wEM 2010 WEM Reference wEM 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM Pear 2010 WEM WAM WAM Pear 2010 WEM WAM WAM Pear WEM WAM NE NE | Reference year 2010 year 2010 wem Reference year 2010 wem 2010 wem Reference year 2010 wem <t< td=""><td>Reference year 2010 year 2010 year Reference year 2010 year WEM WAM Year WEM WE NE</td></t<> | Reference year 2010 year 2010 year Reference year 2010 year WEM WAM Year WEM WE NE |

Key:

Reference year: 2000

WEM: 'with existing measures' projection WAM: 'with additional measures' projection

Source: Belgium's Monitoring Mechanism submission, 15 March 2007.

Table 2 shows, for all gases and main sectors:

- 1990 GHG emissions as reported in the latest (2008) GHG emissions inventory (1990-2006);
- Adjusted GHG emission projections for the WEM and WAM scenarios. This adjustment of the projections reported in Table 1 is carried out to allow consistency and comparability between projections and the latest (2008) GHG inventory data¹.

Table 2 Summary of projections by sector and by gas in 2010 compared to 1990 emissions (MtCO₂-eq.)

| | Car | bon diox | ide | | Methane | | Ni | trous oxi | ide | | F-gases | | | Total | |
|--|-------|-------------|-------------|------|-------------|-------------|------|-------------|-------------|------|-------------|-------------|-------|-------------|-------------|
| | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM |
| Energy (excl. | 90.5 | 87.1 | NE | 1.2 | 0.5 | NE | 0.4 | 1.3 | NE | NA | NA | NE | 92.1 | 88.9 | NE |
| transport) | | | | | | | | | | | | | | | |
| Energy supply | 30.0 | 30.8 | NE | 0.9 | 0.4 | NE | 0.2 | 0.2 | NE | NA | NA | NE | 31.1 | 31.4 | NE |
| Energy – industry, construction | 33.1 | 24.8 | NE | 0.1 | 0.0 | NE | 0.1 | 0.3 | NE | NA | NA | NE | 33.3 | 25.1 | NE |
| Energy – other (commercial, residential, agriculture) | 27.4 | 31.4 | NE | 0.2 | 0.1 | NE | 0.1 | 0.8 | NE | NA | NA | NE | 27.8 | 32.3 | NE |
| Transport (energy) | 20.1 | 24.1 | NE | 0.1 | 0.0 | NE | 0.4 | 0.9 | NE | NA | NA | NE | 20.6 | 25.0 | NE |
| Industrial | 7.9 | 10.6 | NE | NA | 0.0 | NE | 3.9 | 2.3 | NE | 4.5 | 1.8 | NE | 16.4 | 14.7 | NE |
| processes | | | | | | | | | | | | | | | |
| Waste | 0.3 | 0.1 | NE | 2.9 | 0.6 | NE | 0.3 | 0.3 | NE | NA | NA | NE | 3.4 | 1.0 | NE NE |
| Agriculture | NA | NA | NE | 6.2 | 5.7 | NE | 5.5 | 4.8 | NE | NA | NA | NE | 11.8 | 10.5 | NE |
| Other | NA | NA | NE | NA | NE | NE | 0.2 | 0.2 | NE | NA | NA | NE | 0.2 | 0.2 | NE |
| Total (excl. LULUCF) | 118.8 | 121.9 | NE | 10.4 | 6.8 | NE | 10.8 | 9.8 | NE | 4.5 | 1.8 | NE | 144.5 | 140.3 | NE |

Key:

WEM: 'with existing measures' projection WAM: 'with additional measures' projection

Source: Belgium's Monitoring Mechanism submission, 15 March 2007. Annual greenhouse gas inventory 1990 - 2006 and inventory report, 15 April 2008.

¹ The adjustment consists in applying an adjustment factor to projections from Table 1. This factor is the ratio between total emissions in the reference year as reported in the 2008 GHG inventory report (or, if the reference year is the base-year under the Kyoto Protocol, in the report of the review of the initial report under the Kyoto Protocol) and total emissions in the reference year as reported by the country with projections (Table 1).

Table 3 Summary of projections by sector and by gas in 2010 compared to 1990 emissions (index 100 = 1990)

| | С | arbon dio | xide | | Methane | | | Nitrous ox | ide | | F-gases | ; | | Total | |
|--|-------------------|------------------|----------------|-------------------|--------------------|----------------|-------------------|------------------------|----------------|-------------------|----------------|----------------|-------------------|-----------------------|----------------|
| | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM | 1990 | 2010 WEM | 2010 WAM |
| Energy (excl. transport) | 100 | 96.2 | NE | 100 | 43.4 | NE | 100 | 301.9 | NE | 100 | NE | NE | 100 | 96.4 | NE |
| Energy supply Energy – industry, construction | 100 100 | 102.6 75.0 | NE NE | 100 100 | 44.2 45.6 | NE NE | 100 100 | 91.7 460.2 | NE NE | 100 100 | NE NE | NE NE | 100 100 | 100.9 75.6 | NE NE |
| Energy – other (commercial, residential, agriculture) | 100 | 114.8 | NE | 100 | 39.8 | NE | 100 | 564.2 | NE | 100 | NE | NE | 100 | 116.5 | NE |
| Transport (energy) Industrial processes | 100 100 | 119.7 133.6 | NE NE | 100 100 | 31.2 NE | NE NE | 100 100 | 226.3 57.5 | NE NE | 100 100 | NE 40.5 | NE NE | 100 100 | 121.2 89.8 | NE NE |
| Waste Agriculture Other | 100 100 100 | 43.5 NE NE | NE NE NE | 100 100 100 | 19.7 91.0 NE | NE NE NE | 100 100 100 | 120.2 87.3 100.6 | NE NE NE | 100 100 100 | NE NE NE | NE NE NE | 100 100 100 | 30.0 89.3 100.6 | NE NE NE |
| Total (excl. LULUCF) | 100 | 102.6 | NE | 100 | 65.8 | NE | 100 | 90.9 | NE | 100 | 40.5 | NE | 100 | 97.1 | NE |

Key:

WEM: 'with existing measures' projection WAM: 'with additional measures' projection

Source: Belgium's Monitoring Mechanism submission, 15 March 2007. Annual greenhouse gas inventory 1990 - 2006 and inventory report, 15 April 2008.

Table 4 Summary of projections in 2010 compared to base year emissions under the Kyoto Protocol

| | Unit | Base-year emissions under the Kyoto Protocol | 2010 projections 'with existing measures' | 2010 projections 'with additional measures' |
|---------------------|-----------------------------------|---|---|---|
| Total GHG emissions | Mt CO ₂ -eq. | 145.7 | 140.3 | NE |
| (excluding LULUCF) | Index (base-year emissions = 100) | 100 | 96.3 | NE |

Source: Belgium's Monitoring Mechanism submission, 15 March 2007. Annual greenhouse gas inventory 1990 - 2006 and inventory report, 15 April 2008.

145

140

140

135

130

125

120

Base Year 2010 2015 2020 5

Figure 1 Greenhouse gas projections in 2010, 2015 and 2020 (Mt CO2-eq.)

Note: 'With existing measures' scenario presented, as no 'with additional measures' scenario was provided. The same correction factor used in Table 2 has been applied to the projections for 2010, 2015 and 2020. The red line indicates the Kyoto target of 134.8 Mt CO2-eq., based on the revised Kyoto base year. **Source**: Belgium's national report submitted under the Monitoring Mechanism, Decision 280/2004/EC. Report dated 15 March 2007. Base-year emissions from the UNFCCC website. Table 2.

Year

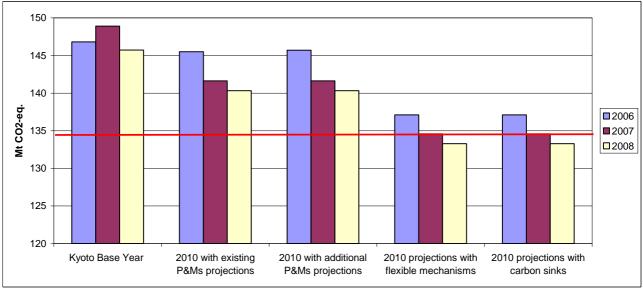


Figure 2 Comparison of 2010 projections reported in 2006, 2007 and 2008

Note: The red line indicates the Kyoto target of 134.8 Mt CO2-eq., based on the revised Kyoto base year. **Source**: For 2006 data: 4th national communication on climate change under the UNFCCC. Report on demonstrable progress under the Kyoto Protocol; 2007 data: Belgium's national report submitted under the Monitoring Mechanism, Decision 280/2004/EC. Report dated 15 March 2007; 2008 data: Belgium's national report submitted under the Monitoring Mechanism, Decision 280/2004/EC. Report dated 15 March 2007. Base-year emissions from the UNFCCC website (same data as used in 2007 but now corrected with base year emissions).

The value for base year emissions is lower in 2008 than it was in 2006 and 2007. This has resulted in a slightly lower Kyoto target. The difference in projections between 2007 and 2008 is a result of applying the correction factor in 2008.

3. CLIMATE CHANGE MITIGATION POLICIES AND MEASURES

For Belgium considerable reductions have been achieved in methane and nitrous oxide reductions. The methane emissions reduction has prominently been achieved within three sectors: transport, waste and agriculture. Nitrous oxide emissions reductions have resulted from improvement in industrial processes and agriculture. F-gases emissions have also been reduced by close to 60% from base year levels. However, at the same time, total carbon dioxide emissions have increased, mainly due to an increase from transport, and this compromises the savings made in methane and nitrous oxide and leaves Belgium's total emissions for 2010 only 3.7% lower than base year emissions (1990).

Table 5 Summary of the effect of policies and measures included in the 2010 projections (Mt CO2-eq.)

| | Top down | calculation | Bottom Up | calculation |
|---|----------|-------------|-----------|-------------|
| | Existing | Planned | Existing | Planned |
| | Measures | Measures | Measures | Measures |
| Energy (total, excluding transport) | 12.3 | NE | NE | NE |
| Energy supply | 8.3 | NE | NE | NE |
| Energy – industry, construction | NE | NE | NE | NE |
| Energy – other (commercial, residential, agriculture) | 4.0 | NE | NE | NE |
| Transport (energy) | 4.9 | NE | NE | NE |
| Industrial processes | 6.4 | NE | NE | NE |
| Waste | NE | NE | NE | NE |
| Agriculture | 1.0 | NE | NE | NE |
| Cross-sectoral | NE | NE | NE | NE |
| Total (excluding LULUCF) | 24.6 | NE | NE | NE |

Note: The effects of measures detailed above are calculated firstly by determining the difference between total projections in each scenario ('top down calculation') and secondly by summing the reported effect of individual measures ('bottom up calculation'). A bottom up calculation was not possible for Belgium as individual quantification of policies and measures was not provided.

Source: Belgium's national report submitted under the Monitoring Mechanism, Decision 280/2004/EC. Report dated 15 March 2007.

Table 6 Detailed information on Existing Policies and measures

| Sector | Name | Туре | GHG | Status | Abso Reduc | tion | | Costs |
|-----------|---|---------------------------------|-------------------|-------------|-----------------------|------|------|---------|
| | | | | | [kt CO ₂ e | | 2020 | [EUR/t] |
| Transport | Improvement of multimodal systems - Intermodal platform Brussels | Information | CO2 N2O | | NE NE | NE | NE | NE |
| Transport | Improvement of multimodal systems - WR | Information | CO2 N2O | | NE | NE | NE | NE |
| Transport | Promotion of public transport for daily mobility - Analysis of travel between home and workplace | Information | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - Modulation of the road tax | Fiscal | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - Promotion of LPG vehicles | Fiscal | CH4 CO N2O | 02 | NE | NE | NE | NE |
| Transport | Traffic regulation | Economic Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - CO2 guide | Education | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - Promotion of renewal of the car fleet | Fiscal | CH4 CO N2O | 02 | NE | NE | NE | NE |
| Transport | Improvement of multimodal systems - Improvement of transport infrastructure around the Port of Antwerp | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Promotion of bicycle use - WR, FR, Brussels region | Information Planning | CO2 N2O | | NE | NE | NE | NE |
| Transport | Improvements of the quality of public transport | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Improvements of the quality of public transport - Regional level | Economic Information | CO2 N2O | • | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - Tax cut for the purchase of clean vehicles | Fiscal | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Promotion of public transport for daily mobility | Fiscal | CO2 N2O | | NE | NE | NE | NE |
| Transport | Promotion of public transport for daily mobility - Extension of the tax deduction for expenses incurred for home-work travel when using alternative transport | Fiscal | CO2 N2O | | NE | NE | NE | NE |
| Transport | Implementation of transport mobility plans - WR | Voluntary/ negotiated agreement | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Implementation of transport mobility plans (schools and business) - FR | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |

| Sector | Name | Туре | GHG | Status | Abso Reduc | | | Costs [EUR/t] 2020 |
|-----------|--|---|-------------------|-------------|-----------------------|----|------|--------------------|
| | | | | | [kt CO ₂ e | | 2020 | |
| Transport | Promotion of public transport for daily mobility - Tax deduction for collective transport organised by private companies | Fiscal | CO2 N2O | | NE | NE | NE | NE |
| Transport | Improvements to public transport (Walloon Region) | Economic Information | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Promotion of bicycle use - Stop Principle and Bike Plan | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Optimal road traffic management | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Mobility plans at local level | Planning Voluntary/ negotiated agreement | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Implementation of transport/mobility plans (School, business) - BCR | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Implementation of biofuel directive | Economic Fiscal Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Waste | Maintenance of elimination obligations and reinforcement of regulations on the use of gas from landfills | Regulatory | CH4 CO2 | Implemented | NE | NE | NE | NE |
| Waste | Improvement of energy efficiency of existing and new incineration plants | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Transport | Model shift in freight transport | | CO2 | Implemented | NE | NE | NE | NE |
| Transport | Promotion of public transport for daily mobility - WR, BCR | Economic Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - FR, BCR | Information | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Green procurement rules for public service vehicle fleets | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Eco-driving Campaign | Education | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Car Sharing | Planning | CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - Gentlements agreement with car manufacturers | Voluntary/ negotiated agreement | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Reduction of vehicle emissions - Taxation of company cars | Fiscal | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Transport | Improvements of multimodal systems - Flanders Mobility Plan | Planning | CO2 | Implemented | NE | NE | NE | NE |
| Transport | Improvement of multimodal systems - Subsidies for freight transport by rail | Fiscal | CO2 N2O | Implemented | NE | NE | NE | NE |

| Sector | Name | Туре | GHG | Status | Abso Reduc | | | Costs [EUR/t] |
|--|--|---------------------------------|-------------------|-------------|-----------------------|----|----|------------------|
| | | | | | [kt CO ₂ 6 | | | |
| Transport | Promotion of public transport for daily mobility - Free train service for commuters | Fiscal Information | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Energy consumption | Financial incentives for the rational use of energy | Fiscal | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption Industrial processes | Energy audits | Fiscal Information | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption Industrial processes | Energy-efficiency in the industrial sectors | Voluntary/ negotiated agreement | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Energy consumption | Energy perfomance and certification of buildings | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption | Rational use of Energy (RUE) in public Buildings | Economic Information | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption | I02: Energy efficiency criteria in the environmental permits | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption | Labelling of appliances | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption Transport | Promotion of Rational use of Energy with local authorities | Economic Information | CO2 | Implemented | NE | NE | NE | NE |
| Agriculture Energy consumption | Public service obligation on rational use of energy | Fiscal Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption Industrial processes | Financial incentives for investments in energy efficiency | Fiscal | CO2 | Implemented | NE | NE | NE | NE |
| Agriculture | FR: Rural development programme | Economic | CH4 CO2 N2O | Implemented | 0.6 | NE | NE | NE |
| Agriculture | Council Regulation (EC) No 1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers and amending Regulations (EEC) No 2019/93, (EC) No 1452/2001, (EC) No 1453/2001, (EC) No 1454/2001, (EC) 1868/94, (EC) No 1251/1999, (EC) No 1254/1999, (EC) No 1673/2000, (EEC) No 2358/71 and (EC) No 2529/2001 | Economic | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Cross-cutting Industrial Processes | National Allocation Plan | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Agriculture | WR: Rural Development Plan | Economic | CH4 N2O | | NE | NE | NE | NE |
| Agriculture | Agri-environmental measures | Regulatory | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Agriculture | Limitation/reduction of methane and NO2 emissions (FR) | Regulatory | CH4 N2O | Implemented | NE | NE | NE | NE |
| Agriculture | CO2 savings in greenhouse horticulture | Economic | CO2 | Implemented | NE | NE | NE | NE |

| Sector | Name | Туре | GHG | Status | Abso Reduc | ction | | Costs [EUR/t] |
|--|---|---------------------------------|-------------------|-------------|-----------------------|----------|------|---------------|
| | | | | | [kt CO ₂ e | q. p.a.] | | |
| | | | | | 2005 | 2010 | 2020 | , |
| | | Regulatory | | | | | | |
| Energy consumption Industrial Processes | Energy-efficiency in the industrial sectors | Voluntary/ negotiated agreement | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |
| Energy supply | Green Cetificate Schemes | Fiscal Regulatory | CH4 CO2 | Implemented | NE | NE | NE | NE |
| Forestry | Preservation of the ecological stability of forests (Walloon region) | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Forestry | Measures for encouraging reforestation and prohibition of deforestation | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Industrial Processes | Reducing industrial emissions of fluorinated greenhouse gases | Economic Regulatory | HFC PFC SF6 | Implemented | NE | NE | NE | NE |
| Forestry | Preservation of the ecological stability of forests (Flemish region) | Economic | CO2 | Implemented | NE | NE | NE | NE |
| Forestry | Harmonisation of forest and climate policies (Flemish region) | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Transport | Implementation of the European Biodiesel Directive | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Agriculture Forestry | Production of renewable energy and biofuels | Research | CO2 | Implemented | NE | NE | NE | NE |
| Industrial Processes | Covenant to reduce N20 emissions by the chemical industry | Voluntary/ negotiated agreement | N2O | Implemented | NE | NE | NE | NE |
| Energy supply Forestry | Wood energy plan | Economic Research | CO2 | Implemented | NE | NE | NE | NE |
| Energy supply | Demonstration projects, information actions and facilitators to promote RES and CHP | Education Information | CH4 CO2 | Implemented | NE | NE | NE | NE |
| Energy supply | Support for electricity generation from RES and CHP | Fiscal Regulatory | CH4 CO2 | Implemented | NE | NE | NE | NE |
| Energy supply | Support for electricity generation from CHP | Fiscal Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Energy supply | Production of green heat | Fiscal | CH4 CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption | Energy performance targets in public housing and the medical - social sector | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption | Modernisation of school infrastructure | Fiscal | CO2 | Implemented | NE | NE | NE | NE |
| Energy consumption | Accreditation of energy experts | Regulatory | CO2 | Implemented | NE | NE | NE | NE |
| Cross-cutting | Kyoto Flexible Mechanism | Economic Regulatory | CH4 CO2 N2O | Implemented | NE | NE | NE | NE |

Source: Policies and Measures database, http://www.oeko.de/service/pam/index.php (accessed 19/06/2008)

Table 7 Detailed information on Planned Policies and measures

| Sector | Name | Туре | GHG | Status | Abso [kt CO ₂ | ion | Costs [EUR/t | |
|--------------------|---|-----------------------------|-------------------|---------|-----------------------------|----------|-----------------|----|
| | | | | | 2005 | 2010 202 | |] |
| Transport | Improvement of multimodal systems - Diabolo Plan | Planning | CO2 | Planned | NE | NE | NE | NE |
| Transport | Improvement of multimodal systems - Marco Polo Programme | Planning | CO2 | Planned | NE | NE | NE | NE |
| Transport | Teleworking | Economic Fiscal Information | CH4 CO2 N2O | Planned | NE | NE | NE | NE |
| Agriculture | Limitation/reduction of methane and NO2 emissions (WR) | Economic | CH4 N2O | Planned | NE | NE | NE | NE |
| Transport | Reduction in vehicle emissions - Clean vehicles for the public services | Regulatory | CH4 CO2 N2O | Planned | NE | NE | NE | NE |
| Energy consumption | Extended maintenance of heating appliances | Regulatory | CO2 | Planned | NE | NE | NE | NE |

Source: Policies and Measures database, http://www.oeko.de/service/pam/index.php (accessed 19/06/2008)

Belgium has been reactive at implementing PAMs after adoption of CCPMs, as most PAMs were implemented after CCPM. However, one PAM, the F-gas regulation, was reinforced by CCPM and four other policies were already in force when CCPM was adopted. Nine PAMs still remain not reported, these include the waste directive and PAMs related to energy efficiency of office equipment and fluorescent lighting.

Table 8 Status of national policies and measures (PAM) in relation to European common and coordinated policies and measures (CCPM)

| Status | ССРМ | Sector |
|-------------------------------------|--|--------------------|
| National policies and measures | Promotion of cogeneration 2004/8/EC | Energy supply |
| already in force before CCPM | Support under CAP (1782/2003) | Agriculture |
| was adopted | Support under CAP - amendment (1783/2003) | Agriculture |
| · | Landfill directive 1999/31/EC | Waste |
| | Directive on waste 2006/12/EC | Waste |
| | Packaging and packaging waste (Directive 94/62/EC, 2004/12/EC, 2005/20/EC) | Waste |
| Existing national policies and | | |
| measures reinforced by | | |
| ССРМ | F-gas regulation (Regulation No 842/2006) | Industrial Process |
| New national policies and | Kyoto Protocol project mechanisms 2004/101/EC | Cross-cutting |
| measures implemented after | Emissions trading 2003/87/EC | Cross-cutting |
| CCPM was adopted | Integrated pollution prevention and control 96/61/EC | Cross-cutting |
| | Taxation of energy products 2003/96/EC | Energy supply |
| | Internal electricity market 2003/54/EC | Energy supply |
| | Promotion of electricity from RE sources 2001/77/EC | Energy supply |
| | Internal market in natural gas 98/30/EC | Energy supply |
| | Directives on energy labelling of appliances | Energy consumption |
| | Energy performance of buildings 2002/91/EC | Energy consumption |
| | Eco-management & audit scheme (EMAS) EC 761/2001 | Energy consumption |
| | Efficiency of hot water boilers 92/42/EEC | Energy consumption |
| | Promotion of biofuels for transport 2003/30/EC | Transport |
| | Transport modal shift to rail 2001/12/EC etc. | Transport |
| | Consumer information on cars 1999/94/EC | Transport |
| | Agreement with car manufacturers ACEA etc. | Transport |
| | Industrial Process: HFC emissions from air conditioning in | |
| | motor vehicles 2006/40/EC | Transport |
| | Nitrates 91/676/EEC | Agriculture |
| | Transition to rural development support No 2603/1999 | Agriculture |
| | Support for rural development from the European | |
| | Agricultural Guidance and Guarantee Fund (1257/1999) | Agriculture |
| Status of national policy or | End-use efficiency and energy services 2006/32/EC | Energy consumption |
| measure not reported | Ecodesign requirements for energy-using products | |
| | 2005/32/EC | Energy consumption |
| | Energy-efficiency labelling for office equipment | |
| | Regulation No. 2422/2001 | Energy consumption |
| | Efficiency fluorescent lighting 2000/55/EC | Energy consumption |
| | Motor challenge, voluntary EC programme | Energy consumption |
| | Environmental performance freight transport (Marco Polo | |
| | Programme) | Transport |
| | Integrated European railway area (2nd + 3rd Railway | |
| | package) (COM(2002)18 final) | Transport |
| | Promotion of cogeneration 2004/8/EC | Energy supply |
| already in force before CCPM | Support under CAP (1782/2003) | Agriculture |
| was adopted | Support under CAP - amendment (1783/2003) | Agriculture |
| | Landfill directive 1999/31/EC | Waste |
| | Directive on waste 2006/12/EC | Waste |

Source: MS responses to the CCPMs questionnaire, 2005. Personal communications. Policies and Measures database, http://www.oeko.de/service/pam/index.php (accessed 19/06/2008)

Note: Pre-accession measures for agriculture and rural development (1268/1999) is not applicable in Belgium.

4. METADATA

Sources of information

Belgium's national report submitted under Article 3(2) of the Monitoring Mechanism, Decision 280/2004/EC. Report dated 15 March 2007.

Belgium's 4th national communication on climate change under the UNFCCC. Report dated 23 December 2005.

Belgium's Report on demonstrable progress under the Kyoto Protocol. Report dated 23 December 2005.

Base-year emissions from the UNFCCC website,

http://unfccc.int/ghg_data/kp_data_unfccc/base_year_data/items/4354.php

Database on Policies and Measures in Europe http://www.oeko.de/service/pam/index.php

Annual greenhouse gas inventory 1990 - 2006 and inventory report, 15 April 2008

Draft Belgian National Allocation Plan for CO₂-emission allowances 2008-2012, September 2006, plan submitted to the European Commission.

Kyoto base-year emissions

Kyoto base-year emissions are presented throughout, except Table 1 which presents projections reference year emissions (see below). Kyoto base year emissions of greenhouse gases were calculated using 1990 emissions for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and 1995 emissions for fluorinated gases (SF₆, HFCs and PFCs).

Kyoto base-year emissions have now been reviewed and set for all EEA countries.

Projections reference year emissions

Projections reference year emissions are presented in Table 1.

Projections reference year emissions are defined as projections-consistent emissions data for a given historic year, as chosen by the Member State. Inventory recalculations from year to year may mean that latest inventory data cannot be compared with projections based on older inventory data. Where such an inconsistency has arisen, MS projections have been corrected by applying the following formula, in Table 2:

Corrected projection =Reported projections * latest inventory total GHG emissions / Table 1 reported total GHG emissions for the same reference year.

Quality of Reporting

The Monitoring Mechanism report provides good descriptions about policies and measures but very little quantification. Base year emissions split by all gases and sectors were missing from the report but were subsequently provided by the Departement Leefmilieu, Natuur en Energie in personal communications, July 2007.

Member State reporting in the sources detailed above was assessed semi-qualitatively. Scoring was attributed according to the level of detail and clarity: from o (representing not reported) to +++ (representing very detailed and/or clear reporting). Guidance used for this assessment included the reporting requirements laid down in:

- EU legislation: Monitoring Mechanism (280/2004/EC) and Implementing Provisions (2005/166/EC)
- UNFCCC reporting guidelines for national communications available in English, French, Spanish ('Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications FCCC/CP/1999/7')

The following tables detail reporting considered to be best practice for the purposes of this assessment.

| Information provided | Example of good practice |
|--|---|
| Policy names | Clear names and description provided with unique identifier. |
| Objectives of policies | Good description of objectives |
| Types of policies | Type of policy instrument specified e.g. regulatory, fiscal |
| Which greenhouse gases? | Specifies which gases each PAM affects |
| Status of Implementation | Clear for each PAM: planned, adopted, implemented, expired |
| Implementation body | Clear which authorities are responsible for implementation |
| Quantitative assessment of emission | Almost all PAMs are actually quantified. Total effect of all PAMs |
| reduction effect and cost of policies | specified. WOM projection provided. |
| Interaction with other national and EU | Detailed discussion and analysis of policy interactions. |
| level policies | |
| Measures implementing community | Report details which national policies are implementing |
| legislation | individual pieces of EU legislation. |
| Arrangements for flexible mechanisms | Details arrangements for use of flexible mechanisms. |
| | Regarding reductions required to meet Kyoto target, details |
| Balance between domestic action and | proportion to result from domestic action and flexible |
| flexible mechanisms | mechanisms. |

| Category of Information | Example of good practice |
|--|---|
| Projection scenarios | 'With existing measures' and 'with additional measures' projections required, 'without measures projection' optional. |
| Policies included in each projection | Clear presentation of the policies included in each projections scenario. |
| Expressed relative to historic reference year data | Projections are presented alongside consistent historic emissions. |
| Starting year | Starting year and emissions used as basis for projections is detailed. |
| Split of projections | Projection split by all 6 gases (or F-gases together), all sectors and years |
| Presentation of results | Clear, both tables and graphs provided and/or used excel reporting template. |
| Description of methodologies | Description of approach, model and assumptions |
| Sensitivity analysis | Was an analysis carried out to determine the sensitivity of projections to variance in the input parameters? Are high medium and low scenarios presented? |
| Discussion of uncertainty | Is an uncertainty range for the projections provided? |
| Details of parameters and assumptions | Are parameters as required under Monitoring Mechanism 280/2004/EC reported? |
| Indicators for projections | Are indicators for projections as required under Monitoring Mechanism 280/2004/EC reported? |

Table 9 Information provided on policies and Kyoto flexible mechanisms

| Information provided | Level of information provided | Comments |
|---|-------------------------------|--|
| Policy names | +++ | Clear names are provided |
| Objectives of policies | +++ | Good description of objectives |
| Types of policies | +++ | Specifies types of policy instrument(s) for each PAM |
| Which greenhouse gases? | +++ | Specifies gas or gases for each PAM; all gases covered |
| Status of Implementation | ++ | Status clear for most PAMs: implemented or planned |
| Implementation body | ++ | Report names several regional/federal bodies involved but not per PAM |
| Quantitative assessment of emission reduction effect and cost of policies | + | Very little quantification of PAMS in Monitoring Mechanism submission. NAP report allows calculation of without measures' minus 'with existing measures' projections |
| Interaction with other national and EU level policies | 0 | CCPMs described in section 3 of report but no cross- reference to regional/national PAMs |
| Measures implementing community legislation | 0 | CCPMs described in section 3 of report but no cross- reference to regional/national PAMs |
| Arrangements for flexible mechanisms | ++ | Report states an intent to use flexible mechanisms, also says which ones are already in use and which ones will be considered for use in each of the three regions |
| Balance between domestic action and flexible mechanisms | ++ | Report quantifies the extent to which flexible mechanisms will be used to meet Kyoto target |

Table 10 Information provided on projections

| Category of Information | Level of information | Comments |
|--|----------------------|---|
| | provided | |
| Projection scenarios | ++ | WEM projections for 2010 are provided with reference to the year 2000. WAM projections are only provided for the year 2020, and again with reference to the year 2000 |
| Policies included in each projection | ++ | Policies are not included in each projection, but a list of policies included in the WEM scenario is provided. |
| Expressed relative to historic reference year data | + | Apart from base year total, only 2000 'reference year' emissions are given. The base year should be 1995 for F gases and 1990 for other gases. |
| Starting year | 2000 | Reference year for projections |
| Split of projections | ++ | 'With existing measures' split by all gases (F-gases together) and sectors. 'With additional measures' only provided for 2020 and sector format different to 'With existing measures'. |
| Presentation of results | ++ | Not consistent between WEM and WAM |
| Description of methodologies | +++ | Annex 1 of the MM report provides a thorough description of the three models (two regional bottom-up models and one national econometric model). No description of the F gas model. A table of assumptions for all relevant years is provided. |
| Sensitivity analysis | ++ | An analysis was carried out to estimate the sensitivity of projections to variance in the input of several parameter, including economic growth rate and climate. High, medium and low scenarios are presented for climate assumptions. |
| Discussion of uncertainty | + | Uncertainty range for projections is not provided. However, report recognises that if uncertainties on economic growth, degree-days, electricity import (and other parameters) were taken into account simultaneously the total uncertainty range would increase. |
| Details of parameters and assumptions | +++ | Key parameters are presented. Report includes a thorough table of assumptions. |
| Indicators for projections | +++ | Indicators are provided in Annex III |

As shown in Table 11, the parameters for projections provided include economic and population parameters, oil prices, assumptions for the energy sector and numbers of livestock by animal type for the agricultural sector. No parameters were provided for industry, transport, buildings, waste and the forestry sector.

Table 11 Parameters for Projections

| 1. Mandatory parameters on projections | 2005 | 2010 | 2015 | 2020 | Units |
|--|---------------|---------------|---------------|------------|------------------------------------|
| Assumptions for general economic parameters | | | _ | - | |
| GDP (value at given years or annual growth rate and base | Ì | Ì | | Ì | |
| year) | | | | | |
| — EU-15 GDP growth rate | 1.5 | 2.2 | 2.1 | 2.1 | % |
| For HERMES - Belgium GDP growth rate | 1.2 | 2.2 | 2 | 1.9 | % |
| — For HERMES - Belgium GDP | 298.2 | 370.1 | 456.1 | 556.5 | % |
| Growth of relevant foreign markets | 6.2 | 6.4 | 5.6 | 5.5 | % |
| Growth of world import volumes of goods | 7.9 | 7.9 | 7.5 | 7.5 | % |
| Growth of non-oil commodity prices (USD) | 3 | 1.5 | 1.5 | 1.5 | % |
| Population (value at given years) | | 1.0 | 1.0 | 1.0 | , , |
| population Belgium | 10445852 | 10529690 | 10628964 | 10723828 | Total |
| population Flanders | 6043161 | | 6112632 | | Total |
| population Wallonia | 3395942 | 3450555 | 3500953 | | Total |
| population Brussels region | 1006749 | 999702 | 1015379 | 1031056 | Total |
| International coal prices at given years in euro per tonne or | 1000749 | 777702 | 1013379 | 1031030 | TOtal |
| GJ (Gigajoule) | | | | | |
| International oil prices at given years (USD per barrel (Brent)) | 54.4 | 65 | 62.7 | 72.4 | USD per barrel |
| International gas prices at given years in euro per m3 or GJ | | | | | |
| Assumptions for the energy sector | | Į | _ | ļ | |
| Total gross inland consumption (PJ) (split by oil, gas, coal, reother) | enewables, i | nuclear, | | | |
| Total electricity production by fuel type (oil, gas, coal, renew nuclear, other) | ables, | | | | |
| Shares in total domestic electricity production (%) | | | | | |
| Share of gas (natural gas / derived gasses) | 27.63 | 29.08 | 38.04 | 51.33 | % |
| Share of oil | 0.89 | 1.15 | 1.33 | 1.57 | % |
| Share of coal | 12.48 | 8.47 | 7.27 | 5.21 | % |
| Share of nuclear | 54.44 | 52.03 | 43.36 | 31.58 | % |
| Share of renewable, including biomass | 2.55 | 7.31 | 8.15 | 8.59 | % |
| Share of pump storage | 1.3 | 1.24 | 1.17 | 1.09 | % |
| Share of waste (non renewable fraction) | 0.73 | 0.72 | 0.68 | 0.63 | % |
| Share of CHP (including CCGT with heat production) | 10.29 | 16.55 | 18.26 | 19.81 | % |
| Energy demand by sector split by fuel (delivered) | 10.27 | 10.33 | 10.20 | 17.01 | 70 |
| Demand | 84.52 | 88.81 | 93.79 | 98.41 | |
| | · | <u></u> | | | |
| Net import (balance export – import) Production | 6.99 83.06 | 7.41 87.16 | 7.29 92.52 | 5.67 99 | % |
| | · [| 5.76 | | | % % |
| Use for pumping and distribution losses | 5.53 | | 6.02 | 6.26 | |
| Assumptions on weather parameters (Heating Degree Days per year) | 1900 | 1900 | 1900 | 1900 | Heating Degree Days per year |
| Assumptions for the industry sector | | | | | |
| For Member States using macroeconomic models: | | | | | |
| The share of the industrial sector in GDP and growth rate | | | | | |
| For Member States using other models: | | | | | |
| The production index for industrial sector | | | | | |
| Assumptions for the transport sector | 1 | | | | |
| For Member States using macroeconomic models: | | | | | |
| The growth of transport relative to GDP | | | | | |
| For Member States using other models: | 1 | | | | |
| The growth of passenger person kilometres | | | | 5 | |
| The growth of freight tonne kilometres | | | | | |
| Assumptions for buildings (in residential and commerc | ial or terti | ary sector | · | i | |
| For Member States using macroeconomic models: | iai Ui teiti | ary sector | , | | |
| The level of private consumption (excluding private | | | | | |
| transport) | | | | | |
| The share of the tertiary sector in GDP and the growth rate | <u> </u> | | | | |
| The share of the tertiary sector in GDF and the growth rate | <u> </u> | I | <u> </u> | | I |

| For Member States using other models: | | | | |
|--|-------|-------|-------|---|
| The rate of change of floor space for tertiary buildings and dwellings | | | | |
| The number of dwellings and number of employees in the tertiary sector | | | | |
| Assumptions in the agriculture sector | | | | |
| For Member States using macroeconomic models: | | | | |
| The share of the agriculture sector in GDP and relative growth | | | | |
| For Member States using other models: | | | | |
| Livestock numbers by animal type (1000s) | | | | |
| Dairy Cattle | 490 | 446 | 397 | 1000s |
| Non-dairy Cattle | 2126 | 2043 | 1969 | 1000s |
| Sheep and Goats | 135 | 134 | 129 | 1000s |
| Horses, Mules and Asses, Other | 73 | 73 | 73 | 1000s |
| Swine | 6116 | 6119 | 6119 | 1000s |
| Poultry | 52754 | 53301 | 54005 | 1000s |
| The area of crops by crop type | | | | |
| Emissions factors by type of livestock for enteric | | | | |
| fermentation and manure management (t) | | | | |
| Assumptions in the waste sector | | | | |
| Waste generation per head of population or tonnes of municipal solid waste | | | | |
| The organic fractions of municipal solid waste | | | | |
| Municipal solid waste disposed to landfills, incinerated or composted (in tonnes or %) | | | | |
| Assumptions in the forestry sector | | | · | |
| Forest definitions | | | | |
| Areas of: | | | | |
| managed forests | | | | |
| unmanaged forests | | | | *************************************** |

| 2. Recommended parameters on projections | 2005 | 2010 | 2015 | 2020 | Units |
|---|------|------|------|------|-------------|
| Assumptions for general economic parameters | | | | | |
| GDP growth rates split by industrial sectors in relation to | | | | | |
| 2000 | | | | | |
| Growth sector activity (VA in constant basic prices) | | | | | |
| Industry | 0.5 | 1.9 | 1.6 | 1.4 | VA |
| Energy | -1.4 | 1.2 | 0.8 | 1 | VA |
| Manufacturing industry | 0.2 | 2 | 1.6 | 1.3 | VA |
| -intermediary goods | 1.2 | 2 | 1.6 | 1.3 | VA |
| -equipment goods | 0.2 | 2.2 | 1.6 | 1.4 | VA |
| -consumption goods | -0.9 | 1.8 | 1.7 | 1.3 | VA |
| Construction | 3 | 2.1 | 2 | 1.7 | VA |
| Transports and communication | 3 | 2.7 | 2.3 | 2 | VA |
| Market services | 1.5 | 2.6 | 2.3 | 2.2 | VA |
| Non-market services | 0.7 | 1.5 | 1.5 | 1.6 | VA |
| Comparison projected data with official forecasts | | | | | |
| Assumptions for the energy sector | | | | | |
| National coal, oil and gas energy prices per sector | | | | | |
| (including taxes) | | | | | |
| National electricity prices per sector as above (may be | | | | | |
| model output) | | | | | |
| Electricity sector (€ 2005 / GJ) natural gas | 5.17 | 5.64 | 5.64 | 6.1 | € 2005 / GJ |
| hard coal 0.5 % S | 2.35 | 2.35 | 2.35 | 2.5 | € 2005 / GJ |
| hard coal 1.5 % S | 2.66 | 2.5 | 2.66 | 2.82 | € 2005 / GJ |
| heavy fuel oil | 8.14 | 6.73 | 6.73 | 7.2 | € 2005 / GJ |
| Industry (€ 2005 / GJ) natural gas | 6.1 | 6.73 | 6.73 | 7.2 | € 2005 / GJ |
| heavy fuel oil | 8.3 | 6.89 | 7.04 | 7.51 | € 2005 / GJ |
| light fuel oil | 9.39 | 7.98 | 7.98 | 8.45 | € 2005 / GJ |
| Tertiary sector (€ 2005 / GJ) natural gas | 6.67 | 7.14 | 7.14 | 7.6 | € 2005 / GJ |
| light fuel oil | 9.69 | 8.28 | 8.28 | 8.75 | € 2005 / GJ |
| Residential sector (€ 2005 / GJ) natural gas | 7.97 | 8.44 | 8.24 | 8.9 | € 2005 / GJ |
| light fuel oil | 9.69 | 8.28 | 8.28 | 8.75 | € 2005 / GJ |
| Transport (€ 2005 / I) gasoline | 1.27 | 1.21 | 1.21 | 1.23 | € 2005 / 1 |
| gas oil - diesel | 1.04 | 0.96 | 0.96 | 0.99 | € 2005 / GJ |
| | | | | | |
| CO2 trade price (€ / ton CO2) | 18 | 42 | 48 | 54 | € / ton CO2 |

| Total production of district heating by fuel type | | | | | |
|---|----------|----------|---------|----------|-------|
| Assumptions for the industry sector | | | | | |
| Assumptions fluorinated gases: | | <u> </u> | | <u> </u> | |
| Aluminium production and emissions factors | | - | | | |
| Magnesium production and emissions factors | | İ | | | |
| Foam production and emissions factors | <u></u> | <u> </u> | | | |
| Stock of refrigerant and leakage rates | | | | | |
| For Member States using macroeconomic models: | | | | | |
| Share of GDP for different sectors and growth rates | <u></u> | | | | |
| Rate of improvement of energy intensity (1990 = 100) | | | | | |
| For Member States using other models: | | | | | |
| Index of production for different sectors | | | | - | |
| Rate of improvement or index of energy efficiency | | | | | |
| Assumptions for buildings (in residential and | | | | | |
| commercial / tertiary sector) | | | | | |
| For Member States using macroeconomic models: | | | | | |
| Share of tertiary and household sectors in GDP | | | | | |
| Rate of improvement of energy intensity | | <u> </u> | | | |
| For Member States using other models: Number of households | | | | - | |
| number of households Belgium | 4439652 | 4594121 | 4731520 | 4863876 | total |
| number of households Flanders | 2501681 | 2572945 | 2635607 | 2687256 | total |
| number of households Wallonia | 1446614 | 1511124 | 1573867 | 1642357 | total |
| number of households Brussels region | 491357 | 490050 | 497735 | 505420 | total |
| average household size Belgium | 2.35 | 2.29 | 2.25 | 2.21 | total |
| average household size Flanders | 2.41 | 2.36 | 2.32 | 2.29 | total |
| average household size Wallonia | 2.35 | 2.28 | 2.23 | 2.16 | total |
| average household size Brussels region | 2.04 | 2.04 | 2.04 | 2.04 | total |
| Number of new buildings | | | | | |
| Rate of improvement of energy efficiency (1990 = 100) | | | | | |
| Assumptions for the transport sector | | | | | |
| For Member States using econometric models: | | Ī | | | |
| Growth of transport relative to GDP split by passenger | | | | | |
| and freight | | | | | |
| Improvements in energy efficiency split by vehicle type Improvements in energy efficiency split by vehicle type, | | <u> </u> | | | |
| whole fleet/new cars | | | | | |
| Rate of change of modal split (passenger and freight) | | ā | | | |
| Growth of passenger road kilometres | | | | | |
| Growth of passenger rail kilometres | | | | | |
| Growth of passenger aviation kilometres | | | | | |
| Growth of freight tonne kilometres on road | | | | | |
| Growth of freight tonne kilometres by rail | | | | | |
| Growth of freight tonne kilometres by navigation | | | | | |
| Assumptions for the agriculture sector | | | | | |
| For Member States using econometric models: | | | | | |
| Agricultural trade (import/export) | | <u> </u> | | | |
| Domestic consumption (e.g. milk/beef consumption) | | <u> </u> | | - | |
| For Member States using other models: | <u> </u> | <u> </u> | | | |
| Development of area of crops, grassland, arable, set- | | | | | |
| aside, conversion to forests etc | | <u> </u> | | | |
| Macroeconomic assumptions behind projections of agricultural activity | | | | | |
| Description of livestock (e.g. by nutrient balance, | | ā | | į | |
| output/animal production, milk production) | | | | | |
| Development of farming types (e.g. intensive | | | | | |
| conventional, organic farming) | | | | | |
| Distribution of housing/grazing systems and | | | | | |
| housing/grazing period | | | | | |
| Parameters of fertiliser regime: | | <u> </u> | | | |
| Details of fertiliser use (type of fertiliser, timing of | | | | | |
| application, inorganic/organic ratio) | | <u> </u> | | <u> </u> | |
| Volatilisation rate of ammonia, following spreading of | | | | | |
| manure on the soil | <u> </u> | <u>:</u> | | | |
| Efficiency of manure use | | <u> </u> | | | |
| Parameters of manure management system: Distribution of storage facilities (e.g. with or without | | | | | |
| אונווטון טו אנטומןפיוען וועווטענויטן אונווטען אונווטענוטון טויאטעניוען ענייטן אונווטענ | <u> </u> | Ā | Ī | i | |

| cover): | | | |
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| Nitrogen excretion rate of manures | | | |
| Methods of application of manure | | | |
| Extent of introduction of control measures (storage systems, manure application), use of best available techniques | | | |
| Parameters related to nitrous oxide emissions from agricultural soils | | | |
| Amount of manure treatment | | | |