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**HELLENIC STATISTICAL AUTHORITY** 

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## PRESS RELEASE AIR EMISSIONS ACCOUNTS: 2008-2015

The Hellenic Statistical Authority (ELSTAT) announces, for the first time, data on greenhouse gas emissions and other air emissions, for the period 2008-2015, which are collected from administrative sources.

This press release presents data on greenhouse gas and other gases emissions, for each type of gas and for the total of gases, which are emitted as a result of the economic activity, as well as by households. The relevant data are presented by sections of the Statistical Classification of Economic Activities (NACE Rev.2) (Tables 1-10, Graphs 1-9).

The percentage contribution of greenhouse gas emissions to the main economic activity sectors of the Statistical Classification of Economic Activities (NACE Rev.2) and to households, by type of gas, is analyzed as follows:

### Carbon dioxide (CO<sub>2</sub>)

- The section of "Electricity, gas, steam and air conditioning supply" had the most important contribution to Carbon dioxide (CO<sub>2</sub>) emissions, accounting for 48.49% of the total of CO<sub>2</sub> emissions in 2008. The corresponding share in 2012 was 55.68%, which was the highest in this reference period, while in 2015 it dropped to 47.35%.
- "Manufacturing" accounted for 14.21% of the total of CO<sub>2</sub> emissions in 2008. In 2015, the corresponding share increased and amounted to 16.96%, which was the largest of this period.
- The section of "Transportation and storage" accounted for 7.47% of the total of CO<sub>2</sub> emissions in 2008 and for 8.83% in 2015.
- The section of "Public administration and defense and compulsory social security" accounted for 2.75% of the total of CO<sub>2</sub> emissions in 2008 and for 2.52% in 2015.

Households had also a significant share of  $CO_2$  emissions, accounting for 19.72% of the total of  $CO_2$  emissions in 2008. In 2009, the corresponding share was 21.31%, the highest of the period, while in 2015 the respective share dropped to 20.33%.

#### Nitrous oxide (N<sub>2</sub>O)

- The "Agriculture, Forestry and Fishing" section had the most significant contribution to Nitrous Oxide (N<sub>2</sub>O) emissions, accounting for 71.75% of the total of N<sub>2</sub>O emissions in 2008. In 2013, the corresponding share amounted to 79.69%, which was the highest in the reference period, while in 2015 the corresponding share dropped to 79.28%.
- "Manufacturing" accounted for 11.28% of the total of N<sub>2</sub>O emissions in 2008 and for 4.71% in 2015.
- The "Water, sewage treatment, waste management and remediation activities" section accounted for 5.77% of the total N<sub>2</sub>O in 2008. In 2015, the respective share increased and amounted to 7.47%.
- The "Transportation and storage" section accounted for 4.60% of the total of N<sub>2</sub>O emissions in 2008 and for 3.09% in 2015.

The participation of Households to  $N_2O$  emissions accounted for 2.89% of the total of  $N_2O$  emissions in 2008 and for 2.16% in 2015.

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## Methane (CH<sub>4</sub>)

- The "Agriculture, Forestry and Fishing" section had the largest share of Methane (CH<sub>4</sub>) emissions, accounting for 44.37% of the total of CH<sub>4</sub> emissions in 2008. In 2015, the respective share increased to 48.55%, which was the largest of the period.
- The "Water, sewage treatment, waste management and remediation activities" had also a significant share to CH<sub>4</sub> emissions, amounting to 40.31% of the total of CH<sub>4</sub> emissions in 2008. In 2015, the corresponding share amounted to 40.80%, which was the highest in the period.
- The "Public Administration and Defense and Compulsory Social Security" accounted for 2.74% of the total of CH<sub>4</sub> emissions in 2008 and for 2.06% in 2015.

The participation of Households to  $CH_4$  emissions amounted to 1.54% of the total of  $CH_4$  emissions in 2008 and to 1.35% in 2015.

## Hydrofluorocarbons (HFCs)

Hydrofluorocarbons (HFCs) emissions come exclusively from the sections of "Manufacturing", "Construction" and "Human health and social work activities" sectors as follows:

- The "Manufacturing" had the most significant share of HFCs emissions, accounting for 92.75% of total of HFC emissions in 2008. In 2015, the respective share increased to 96.30%, the largest in the period.
- The "Construction" section accounted for 4.12% of the total of HFCs emissions in 2008. In 2015, the respective share fell to 2.71%.
- The section of "Human health and social work activities" accounted for 3.13% of the total of HFCs emissions in 2008. In 2015, the corresponding contribution fell to 0.98%.

### Perfuorocarbons (PFCs)

The emissions of Perfluorocarbons (PFCs) come exclusively from the Manufacturing sector. In 2008, the total emissions of Perfluorocarbons amounted to 118,952.2 tonnes and in 2015 to 119,522.5 tonnes.

### Sulphur hexafluoride (SF<sub>6</sub>)

Sulfur hexafluoride (SF<sub>6</sub>) emissions come exclusively from the Energy sector. In 2008, the total emissions of sulfur hexafluoride amounted to 7,182.0 tonnes and in 2015 to 5,060.4 tonnes.

## Table 1: Greenhouse gas emissions, 2008-2014<sup>\*</sup>

|  | 2008        | 2009        | 2010        | 2011        | 2012        | 2013        | 2014        | 2015        |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Carbon Dioxide (CO <sub>2</sub> )<br>In 1.000 tonnes                               | 111,112.5   | 104,340.6   | 97,343.0    | 94,531.7    | 91,417.8    | 81,722.6    | 78,658.0    | 74,962.9    |
| Carbon Dioxide (CO <sub>2</sub> ) from<br>combustion of biomass<br>In 1,000 tonnes | 2,740.7     | 2,741.5     | 3,240.7     | 3,453.2     | 3,424.5     | 2,738.9     | 2,682.5     | 3,158.9     |
| Nitrous oxide (N <sub>2</sub> O)<br>In tonnes                                      | 18,902.1    | 17,674.6    | 18,353.9    | 17,546.1    | 16,096.5    | 15,098.2    | 15,050.4    | 15,122.3    |
| Methane (CH <sub>4</sub> )<br>In tonnes  | 443,682.2   | 429,876.4   | 438,901.1   | 431,755.8   | 423,805.4   | 415,482.4   | 412,513.6   | 408,737.3   |
| Hydrofluorocardons (HFCs)<br>In tonnes of CO <sub>2</sub> equivalent               | 3,710,348.2 | 3,964,124.7 | 4,388,668.0 | 4,661,655.1 | 5,061,776.9 | 5,650,218.6 | 5,758,128.6 | 5,902,684.5 |
| Perfluorocardons (PFCs)<br>In tonnes of CO2 equivalent                             | 118,952.2   | 91,345.4    | 129,438.4   | 110,526.1   | 147,771.2   | 172,562.0   | 134,633.7   | 119,522.5   |
| Sulphur hexafluorids (SF <sub>6</sub> ) In tonnes of $CO_2$ equivalent             | 7,182.0     | 5,016.0     | 5,859.6     | 5,130.0     | 5,048.6     | 5,151.2     | 4,921.5     | 5,060.4     |
| *Provisional data  |             |             |             |             |             |             |             |             |

#### Table 2: Air emissions of other gases, 2008-2015\*

|  | 2008      | 2009      | 2010      | 2011      | 2012      | 2013      | 2014      | 2015      |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Nitrogen oxides (NOx)<br>In tonnes                     | 399,201.9 | 384,315.0 | 324,661.7 | 303,366.6 | 243,571.5 | 248,816.2 | 243,383.1 | 240,934.8 |
| Sulphur oxides (SOx)<br>In tonnes SO2 equivalent       | 444,003.5 | 422,993.0 | 247,626.6 | 190,153.4 | 150,885.2 | 140,795.8 | 122,987.2 | 119,702.5 |
| Ammonia (NH <sub>3</sub> )**<br>In tonnes              | 64,577.3  | 62,050.9  | 64,397.4  | 61,601.8  | 61,231.8  | 60,570.0  | 60,790.7  | 64,255.3  |
| Non-Methane volatile<br>organic compounds<br>In tonnes | 162,131.7 | 155,108.7 | 144,405.8 | 133,910.2 | 128,104.3 | 126,960.7 | 125,144.4 | 122,201.2 |
| Carbon monoxide<br>In tonnes                           | 640,941.0 | 610,396.9 | 563,132.2 | 530,270.0 | 595,515.1 | 471,822.5 | 459,740.0 | 440,234.7 |

\*Provisional data \*\* Data on Ammonia (NH<sub>3</sub>) derive from EUROSTAT estimations.

Table 3: Distribution of carbon dioxide ( $CO_2$ ) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and households, 2008-2015<sup>\*</sup>

| n thousand tonnes  |           |           |          |          |          |          |          |          |
|--|-----------|-----------|----------|----------|----------|----------|----------|----------|
| Economic Activities (NACE Rev. 2)<br>Sections - Households           | 2008      | 2009      | 2010     | 2011     | 2012     | 2013     | 2014     | 2015     |
| Agriculture, forestry and fishing                                    | 2,508.2   | 1,983.4   | 1,712.7  | 1,765.3  | 915.3    | 512.3    | 494.7    | 552.8    |
| Mining and quarrying   | 592.8     | 401.5     | 454.5    | 394.5    | 402.5    | 204.8    | 387.6    | 375.5    |
| Manufacturing  | 15,784.0  | 12,908.9  | 12,717.8 | 10,285.6 | 11,081.8 | 12,877.3 | 13,313.1 | 12,713.8 |
| Electricity, gas, steam and air conditioning supply                  | 53,883.3  | 50,680.7  | 48,318.7 | 50,459.8 | 50,902.2 | 44,100.2 | 40,446.1 | 35,493.5 |
| Water supply, sewerage, waste management and remediation activities  | 4.9       | 4.8       | 4.3      | 4.0      | 2.3      | 2.2      | 2.3      | 2.6      |
| Construction   | 778.3     | 709.5     | 697.1    | 678.5    | 654.8    | 149.5    | 210.8    | 287.2    |
| Wholesale and retail trade; repair of motor vehicles and motorcycles | 445.5     | 366.5     | 339.9    | 166.0    | 33.6     | 29.3     | 21.8     | 23.5     |
| Transportation and storage   | 8,300.8   | 9,862.6   | 8,571.9  | 7,439.7  | 6,284.5  | 6,565.8  | 6,497.7  | 6,615.8  |
| Accommodation and food service activities                            | 1,083.1   | 989.3     | 639.4    | 575.6    | 521.0    | 287.4    | 340.6    | 375.2    |
| Information and communication  | 43.5      | 35.8      | 33.2     | 31.3     | 33.4     | 26.2     | 28.4     | 26.4     |
| Financial and insurance activities                                   | 110.0     | 114.8     | 117.0    | 114.9    | 113.2    | 74.4     | 52.4     | 52.8     |
| Real estate activities   | 5.2       | 4.2       | 3.9      | 3.7      | 4.6      | 4.6      | 5.2      | 5.1      |
| Professional, scientific and technical activities                    | 227.8     | 219.5     | 216.5    | 213.5    | 216.6    | 148.9    | 179.7    | 154.4    |
| Administrative and support service activities                        | 105.0     | 100.3     | 99.4     | 105.2    | 110.9    | 74.1     | 56.7     | 54.3     |
| Public administration and defence; compulsory social security        | 3,057.1   | 1,722.6   | 1,396.0  | 1,129.5  | 1,560.9  | 965.1    | 1,181.2  | 1,888.7  |
| Education  | 874.6     | 812.4     | 824.9    | 812.5    | 845.2    | 484.3    | 482.8    | 488.0    |
| Human health and social work activities                              | 1,065.7   | 893.5     | 858.4    | 850.3    | 847.6    | 425.8    | 418.1    | 448.7    |
| Arts, entertainment and recreation                                   | 154.0     | 145.8     | 143.3    | 145.1    | 146.0    | 97.7     | 81.7     | 83.3     |
| Other service activities   | 121.6     | 92.7      | 84.8     | 83.5     | 79.4     | 46.5     | 45.3     | 52.5     |
| Activities of households as<br>employers                             | 55.5      | 52.0      | 50.9     | 49.4     | 48.2     | 27.8     | 26.7     | 29.5     |
| Activities of extraterritorial organisations and bodies              | 0.0       | 0.0       | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      |
| Fotal of emissions of<br>NACE Rev.2 sections                         | 89,200.9  | 82,101.0  | 77,284.9 | 75,308.2 | 74,804.1 | 67,104.4 | 64,272.7 | 59,723.6 |
| Households   | 21,911.7  | 22,239.6  | 20,058.1 | 19,223.5 | 16,613.7 | 14,618.2 | 14,385.3 | 15,239.3 |
| Grand Total of emissions   | 111,112.5 | 104,340.6 | 97,343.0 | 94,531.7 | 91,417.8 | 81,722.6 | 78,658.0 | 74,962.9 |

Table 4: Percentage distribution of carbon dioxide (CO<sub>2</sub>) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and in households, 2008-2015<sup>\*</sup>

| Economic Activities (NACE Rev. 2)<br>Sections - Households           | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Agriculture, forestry and fishing                                    | 2.26   | 1.90   | 1.76   | 1.87   | 1.00   | 0.63   | 0.63   | 0.74   |
| Mining and quarrying   | 0.53   | 0.38   | 0.47   | 0.42   | 0.44   | 0.25   | 0.49   | 0.50   |
| Manufacturing  | 14.21  | 12.37  | 13.06  | 10.88  | 12.12  | 15.76  | 16.93  | 16.96  |
| Electricity, gas, steam and air conditioning supply                  | 48.49  | 48.57  | 49.64  | 53.38  | 55.68  | 53.96  | 51.42  | 47.35  |
| Water supply, sewerage, waste management and remediation activities  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Construction   | 0.70   | 0.68   | 0.72   | 0.72   | 0.72   | 0.18   | 0.27   | 0.38   |
| Wholesale and retail trade; repair of motor vehicles and motorcycles | 0.40   | 0.35   | 0.35   | 0.18   | 0.04   | 0.04   | 0.03   | 0.03   |
| Transportation and storage   | 7.47   | 9.45   | 8.81   | 7.87   | 6.87   | 8.03   | 8.26   | 8.83   |
| Accommodation and food service activities                            | 0.97   | 0.95   | 0.66   | 0.61   | 0.57   | 0.35   | 0.43   | 0.50   |
| Information and communication  | 0.04   | 0.03   | 0.03   | 0.03   | 0.04   | 0.03   | 0.04   | 0.04   |
| Financial and insurance activities                                   | 0.10   | 0.11   | 0.12   | 0.12   | 0.12   | 0.09   | 0.07   | 0.07   |
| Real estate activities   | 0.00   | 0.00   | 0.00   | 0.00   | 0.01   | 0.01   | 0.01   | 0.01   |
| Professional, scientific and technical activities                    | 0.21   | 0.21   | 0.22   | 0.23   | 0.24   | 0.18   | 0.23   | 0.21   |
| Administrative and support service<br>activities                     | 0.09   | 0.10   | 0.10   | 0.11   | 0.12   | 0.09   | 0.07   | 0.07   |
| Public administration and defence;<br>compulsory social security     | 2.75   | 1.65   | 1.43   | 1.19   | 1.71   | 1.18   | 1.50   | 2.52   |
| Education  | 0.79   | 0.78   | 0.85   | 0.86   | 0.92   | 0.59   | 0.61   | 0.65   |
| Human health and social work activities                              | 0.96   | 0.86   | 0.88   | 0.90   | 0.93   | 0.52   | 0.53   | 0.60   |
| Arts, entertainment and recreation                                   | 0.14   | 0.14   | 0.15   | 0.15   | 0.16   | 0.12   | 0.10   | 0.11   |
| Other service activities   | 0.11   | 0.09   | 0.09   | 0.09   | 0.09   | 0.06   | 0.06   | 0.07   |
| Activities of households as employers                                | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.03   | 0.03   | 0.04   |
| Activities of extraterritorial<br>organizations and bodies           | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Total of emissions of<br>NACE Rev.2 sections                         | 80.28  | 78.69  | 79.39  | 79.66  | 81.83  | 82.11  | 81.71  | 79.67  |
| Households   | 19.72  | 21.31  | 20.61  | 20.34  | 18.17  | 17.89  | 18.29  | 20.33  |
| Grand Total of emissions   | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Graph 1: Percentage distribution of carbon dioxide (CO<sub>2</sub>) emissions by main sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and households 2008 and 2015



Graph 2: Carbon dioxide (CO<sub>2</sub>) emissions, as a total, in the economic activity sectors and in households, 2008-2015



Table 5: Distribution of nitrous oxide ( $N_2O$ ) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and in households, 2008-2015<sup>\*</sup>

| In tonnes   |          |          |          |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| Economic Activities (NACE Rev. 2)<br>Sections - Households                | 2008     | 2009     | 2010     | 2011     | 2012     | 2013     | 2014     | 2015     |
| Agriculture, forestry and fishing   | 13,561.8 | 12,739.0 | 13,418.0 | 12,741.0 | 11,995.4 | 12,032.0 | 11,918.9 | 11,991.9 |
| Mining and quarrying  | 27.5     | 20.2     | 23.7     | 21.8     | 16.3     | 22.9     | 27.6     | 33.6     |
| Manufacturing   | 2,132.5  | 1,923.4  | 2,078.5  | 2,163.4  | 1,602.0  | 677.9    | 694.2    | 712.0    |
| Electricity, gas, steam and air<br>conditioning supply                    | 572.2    | 552.9    | 517.3    | 525.9    | 536.0    | 474.4    | 446.9    | 390.2    |
| Water supply, sewerage, waste<br>management and remediation<br>activities | 1,091.1  | 1,089.0  | 1,116.1  | 1,125.4  | 1,132.5  | 1,136.9  | 1,135.7  | 1,129.7  |
| Construction  | 14.7     | 4.3      | 2.5      | 3.2      | 4.1      | 4.9      | 6.4      | 8.8      |
| Wholesale and retail trade; repair of motor vehicles and motorcycles      | 7.5      | 5.1      | 4.8      | 4.2      | 3.7      | 2.7      | 3.0      | 3.0      |
| Transportation and storage  | 869.0    | 796.8    | 711.6    | 579.3    | 471.6    | 440.4    | 462.9    | 467.2    |
| Accommodation and food service activities                                 | 12.5     | 4.2      | 3.4      | 3.8      | 3.2      | 3.8      | 8.0      | 8.5      |
| Information and communication   | 3.7      | 3.4      | 3.4      | 3.5      | 4.1      | 3.4      | 3.9      | 5.3      |
| Financial and insurance activities  | 4.3      | 4.0      | 3.9      | 4.0      | 3.8      | 3.9      | 4.2      | 4.9      |
| Real estate activities  | 0.0      | 1.0      | 0.4      | 0.4      | 0.5      | 0.4      | 0.4      | 0.4      |
| Professional, scientific and technical activities                         | 1.8      | 2.2      | 1.9      | 2.3      | 2.6      | 2.2      | 2.9      | 3.2      |
| Administrative and support service<br>activities                          | 2.5      | 2.7      | 2.3      | 2.4      | 5.0      | 4.1      | 4.9      | 4.8      |
| Public administration and defence;<br>compulsory social security          | 19.5     | 13.5     | 10.8     | 10.6     | 8.3      | 8.2      | 8.2      | 12.4     |
| Education   | 9.7      | 7.1      | 5.6      | 5.2      | 4.2      | 4.1      | 4.2      | 6.4      |
| Human health and social work activities                                   | 10.0     | 8.1      | 6.2      | 5.4      | 5.4      | 5.3      | 5.0      | 6.3      |
| Arts, entertainment and recreation  | 0.5      | 3.2      | 1.8      | 1.9      | 1.9      | 1.8      | 2.1      | 2.2      |
| Other service activities  | 12.6     | 10.1     | 7.9      | 7.4      | 6.2      | 8.0      | 9.5      | 8.6      |
| Activities of households as<br>employers                                  | 2.9      | 1.5      | 1.2      | 0.2      | 0.2      | 0.1      | 0.1      | 0.1      |
| Activities of extraterritorial<br>organisations and bodies                | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      |
| Total of emissions of NACE Rev.2 sections                                 | 18,356.2 | 17,191.7 | 17,921.4 | 17,211.2 | 15,806.9 | 14,837.3 | 14,749.0 | 14,799.3 |
| Households  | 545.92   | 482.90   | 432.51   | 334.90   | 289.66   | 260.95   | 305.02   | 326.10   |
| Grand Total of emissions *Provisional data                                | 18,902.1 | 17,674.6 | 18,353.9 | 17,546.1 | 16,096.5 | 15,098.2 | 15,054.0 | 15,125.4 |

## Table 6: Percentage distribution of nitrous oxide (N<sub>2</sub>O) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and in households, 2008-2015<sup>\*</sup>

| Economic Activities (NACE Rev. 2)<br>Sections - Households                | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Agriculture, forestry and fishing   | 71.75  | 72.08  | 73.11  | 72.61  | 74.52  | 79.69  | 79.17  | 79.28  |
| Mining and quarrying  | 0.15   | 0.11   | 0.13   | 0.12   | 0.10   | 0.15   | 0.18   | 0.22   |
| Manufacturing   | 11.28  | 10.88  | 11.32  | 12.33  | 9.95   | 4.49   | 4.61   | 4.71   |
| Electricity, gas, steam and air conditioning supply                       | 3.03   | 3.13   | 2.82   | 3.00   | 3.33   | 3.14   | 2.97   | 2.58   |
| Water supply, sewerage, waste<br>management and remediation<br>activities | 5.77   | 6.16   | 6.08   | 6.41   | 7.04   | 7.53   | 7.54   | 7.47   |
| Construction  | 0.08   | 0.02   | 0.01   | 0.02   | 0.03   | 0.03   | 0.04   | 0.06   |
| Wholesale and retail trade; repair of motor vehicles and motorcycles      | 0.04   | 0.03   | 0.03   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
| Transportation and storage  | 4.60   | 4.51   | 3.88   | 3.30   | 2.93   | 2.92   | 3.07   | 3.09   |
| Accommodation and food service activities                                 | 0.07   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.05   | 0.06   |
| Information and communication   | 0.02   | 0.02   | 0.02   | 0.02   | 0.03   | 0.02   | 0.03   | 0.03   |
| Financial and insurance activities  | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.03   | 0.03   | 0.03   |
| Real estate activities  | 0.00   | 0.01   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Professional, scientific and technical activities                         | 0.01   | 0.01   | 0.01   | 0.01   | 0.02   | 0.01   | 0.02   | 0.02   |
| Administrative and support service<br>activities                          | 0.01   | 0.02   | 0.01   | 0.01   | 0.03   | 0.03   | 0.03   | 0.03   |
| Public administration and defence;<br>compulsory social security          | 0.10   | 0.08   | 0.06   | 0.06   | 0.05   | 0.05   | 0.05   | 0.08   |
| Education   | 0.05   | 0.04   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.04   |
| Human health and social work activities                                   | 0.05   | 0.05   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.04   |
| Arts, entertainment and recreation  | 0.00   | 0.02   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |
| Other service activities  | 0.07   | 0.06   | 0.04   | 0.04   | 0.04   | 0.05   | 0.06   | 0.06   |
| Activities of households as<br>employers                                  | 0.02   | 0.01   | 0.01   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Activities of extraterritorial<br>organizations and bodies                | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Total of emissions of NACE Rev.2<br>sections                              | 97.11  | 97.27  | 97.64  | 98.09  | 98.20  | 98.27  | 97.97  | 97.84  |
| Households  | 2.89   | 2.73   | 2.36   | 1.91   | 1.80   | 1.73   | 2.03   | 2.16   |
| Grand Total of emissions  | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Graph 3: Percentage distribution of nitrous oxide (N<sub>2</sub>O) emissions by main sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and households 2008 and 2015



Graph 4: Nitrous oxide (N<sub>2</sub>O) emissions, as a total, in the economic activity sectors and in households, 2008-2015



# Table 7: Distribution of Methane (CH₄) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and in households, 2008-2015\*

In tonnes

| Economic Activities (NACE Rev. 2)<br>Sections - Households                 | 2008      | 2009      | 2010      | 2011      | 2012      | 2013      | 2014      | 2015      |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Agriculture, forestry and fishing  | 196,876.8 | 195,746.3 | 199,245.1 | 198,487.4 | 196,430.8 | 192,671.3 | 190,783.0 | 199,022.2 |
| Mining and quarrying   | 1,524.6   | 1,075.4   | 810.6     | 804.6     | 782.1     | 710.2     | 610.3     | 525.0     |
| Manufacturing  | 7,075.6   | 6,852.5   | 5,976.9   | 5,634.9   | 5,384.1   | 5,456.3   | 5,240.1   | 4,164.8   |
| Electricity, gas, steam and air conditioning supply                        | 718.0     | 623.6     | 564.5     | 588.6     | 581.4     | 513.1     | 471.7     | 438.2     |
| Water supply, sewerage, waste management and remediation activities        | 178,828.6 | 167,337.5 | 178,400.5 | 169,691.1 | 160,960.1 | 165,158.8 | 167,790.0 | 167,253.2 |
| Construction   | 551.7     | 477.1     | 458.5     | 445.9     | 358.9     | 258.8     | 251.4     | 231.1     |
| Wholesale and retail trade;<br>repair of motor vehicles and<br>motorcycles | 18.2      | 16.2      | 15.2      | 15.7      | 18.6      | 13.1      | 13.1      | 11.1      |
| Transportation and storage   | 1,168.9   | 1,187.3   | 1,200.5   | 974.2     | 668.9     | 883.6     | 869.9     | 905.6     |
| Accommodation and food<br>service activities                               | 7,211.5   | 7,425.9   | 6,789.3   | 7,616.7   | 7,589.2   | 6,876.4   | 6,435.8   | 4,579.6   |
| Information and communication  | 2,069.2   | 1,875.1   | 1,687.3   | 2,033.9   | 2,020.3   | 1,683.0   | 1,697.5   | 1,654.0   |
| Financial and insurance activities   | 2,758.4   | 2,499.6   | 1,890.1   | 2,711.4   | 2,417.4   | 1,897.7   | 1,767.7   | 1,669.0   |
| Real estate activities   | 104.8     | 94.9      | 109.6     | 103.0     | 94.2      | 95.3      | 79.5      | 71.2      |
| Professional, scientific and technical activities                          | 5,396.6   | 5,484.6   | 4,763.4   | 4,462.4   | 4,967.4   | 4,090.9   | 3,860.8   | 2,709.4   |
| Administrative and support<br>service activities                           | 2,637.8   | 2,577.0   | 2,759.5   | 3,174.9   | 3,619.9   | 2,537.3   | 2,111.7   | 1,589.0   |
| Public administration and<br>defence; compulsory social<br>security        | 12,168.4  | 10,528.4  | 9,607.9   | 10,343.3  | 10,455.8  | 9,763.7   | 8,506.3   | 8,425.1   |
| Education  | 7,014.5   | 7,010.2   | 6,012.5   | 6,250.1   | 8,234.4   | 6,225.0   | 6,410.0   | 4,558.9   |
| Human health and social work activities                                    | 6,096.0   | 5,903.9   | 5,563.8   | 5,355.7   | 5,682.3   | 4,000.9   | 3,825.0   | 3,334.6   |
| Arts, entertainment and<br>recreation                                      | 1,246.6   | 1,476.9   | 1,331.6   | 1,225.3   | 1,385.1   | 1,230.8   | 1,122.6   | 739.4     |
| Other service activities   | 2,378.7   | 4,068.5   | 3,013.6   | 3,330.1   | 4,208.5   | 3,785.5   | 3,382.1   | 1,762.5   |
| Activities of households as<br>employers                                   | 1,008.0   | 1,007.6   | 2,023.2   | 1,901.3   | 1,904.6   | 1,293.0   | 1,037.1   | 754.2     |
| Activities of extraterritorial<br>organizations and bodies                 | -         | -         | -         | -         | -         | -         | -         | -         |
| Total of emissions of NACE Rev.2<br>sections                               | 436,853.0 | 423,268.4 | 432,223.4 | 425,150.4 | 417,763.9 | 409,144.7 | 406,265.5 | 404,398.1 |
| Households   | 6,829.2   | 6,608.0   | 6,677.7   | 6,605.4   | 6,041.5   | 6,337.6   | 6,248.1   | 5,531.3   |
| Grand Total of emissions *Provisional data                                 | 443,682.2 | 429,876.4 | 438,901.1 | 431,755.8 | 423,805.4 | 415,482.4 | 412,513.6 | 409,929.4 |

Table 8: Percentage distribution of methane (CH<sub>4</sub>) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and in households, 2008-2015<sup>\*</sup>

| Economic Activities (NACE Rev. 2) Sections<br>- Households                | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Agriculture, forestry and fishing   | 44.37  | 45.54  | 45.40  | 45.97  | 46.35  | 46.37  | 46.25  | 48.55  |
| Mining and quarrying  | 0.34   | 0.25   | 0.18   | 0.19   | 0.18   | 0.17   | 0.15   | 0.13   |
| Manufacturing   | 1.59   | 1.59   | 1.36   | 1.31   | 1.27   | 1.31   | 1.27   | 1.02   |
| Electricity, gas, steam and air conditioning supply                       | 0.16   | 0.15   | 0.13   | 0.14   | 0.14   | 0.12   | 0.11   | 0.11   |
| Water supply, sewerage, waste<br>management and remediation<br>activities | 40.31  | 38.93  | 40.65  | 39.30  | 37.98  | 39.75  | 40.68  | 40.80  |
| Construction  | 0.12   | 0.11   | 0.10   | 0.10   | 0.08   | 0.06   | 0.06   | 0.06   |
| Wholesale and retail trade; repair of motor vehicles and motorcycles      | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Transportation and storage  | 0.26   | 0.28   | 0.27   | 0.23   | 0.16   | 0.21   | 0.21   | 0.22   |
| Accommodation and food service activities                                 | 1.63   | 1.73   | 1.55   | 1.76   | 1.79   | 1.66   | 1.56   | 1.12   |
| Information and communication   | 0.47   | 0.44   | 0.38   | 0.47   | 0.48   | 0.41   | 0.41   | 0.40   |
| Financial and insurance activities  | 0.62   | 0.58   | 0.43   | 0.63   | 0.57   | 0.46   | 0.43   | 0.41   |
| Real estate activities  | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
| Professional, scientific and technical activities                         | 1.22   | 1.28   | 1.09   | 1.03   | 1.17   | 0.98   | 0.94   | 0.66   |
| Administrative and support service<br>activities                          | 0.59   | 0.60   | 0.63   | 0.74   | 0.85   | 0.61   | 0.51   | 0.39   |
| Public administration and defence;<br>compulsory social security          | 2.74   | 2.45   | 2.19   | 2.40   | 2.47   | 2.35   | 2.06   | 2.06   |
| Education   | 1.58   | 1.63   | 1.37   | 1.45   | 1.94   | 1.50   | 1.55   | 1.11   |
| Human health and social work activities                                   | 1.37   | 1.37   | 1.27   | 1.24   | 1.34   | 0.96   | 0.93   | 0.81   |
| Arts, entertainment and recreation  | 0.28   | 0.34   | 0.30   | 0.28   | 0.33   | 0.30   | 0.27   | 0.18   |
| Other service activities  | 0.54   | 0.95   | 0.69   | 0.77   | 0.99   | 0.91   | 0.82   | 0.43   |
| Activities of households as employers                                     | 0.23   | 0.23   | 0.46   | 0.44   | 0.45   | 0.31   | 0.25   | 0.18   |
| Activities of extraterritorial<br>organisations and bodies                | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| Total of emissions of NACE Rev.2 sections                                 | 98.46  | 98.46  | 98.48  | 98.47  | 98.57  | 98.47  | 98.49  | 98.65  |
| Households  | 1.54   | 1.54   | 1.52   | 1.53   | 1.43   | 1.53   | 1.51   | 1.35   |
| Grand Total of emissions  | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Graph 5: Percentage distribution of methane (CH<sub>4</sub>) emissions by main sections of the Statistical Classification of Economic Activities (NACE Rev. 2) and households 2008 and 2015



Graph 6: Methane (CH<sub>4</sub>) emissions, as a total, in the economic activity sectors and in households, 2008-2015



## Table 9: Hydrofluorocarbons (HFCs) emissions by sections of the Statistical Classification of Economic Activities (NACE Rev. 2), in tonnes of CO<sub>2</sub> equivalent, 2008-2015\*

| Economic Activities<br>(NACE Rev. 2) Sections | 2008        | 2009        | 2010        | 2011        | 2012        | 2013        | 2014        | 2015        |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Manufacturing                                 | 3,441,383.9 | 3,737,252.2 | 4,159,714.2 | 4,450,409.8 | 4,844,980.0 | 5,414,244.1 | 5,522,888.4 | 5,684,518.9 |
| Construction                                  | 152,682.7   | 155,573.4   | 160,269.6   | 162,675.0   | 168,568.6   | 191,442.2   | 189,725.8   | 160,185.0   |
| Human health and social work activities       | 116,281.6   | 71,299.1    | 68,684.3    | 48,270.4    | 48,228.3    | 44,532.3    | 45,514.4    | 57,980.6    |
| Total of emissions                            | 3,710,348.2 | 3,964,124.7 | 4,388,668.0 | 4,661,355.1 | 5,061,776.9 | 5,650,218.6 | 5,758,128.6 | 5,902,684.5 |

\*Provisional data

Note: Hydrofluorocarbons (HFCs) emissions are emitted only by the aforementioned sectors of economic activities

 Table 10: Percentage distribution of hydrofluorocarbons (HFCs) emissions by sections of the Statistical Classification of Economic

 Activities (NACE Rev. 2), 2008-2015\*

| Economic Activities (NACE<br>Rev. 2) Sections | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Manufacturing                                 | 92.75  | 94.28  | 94.78  | 95.47  | 95.72  | 95.82  | 95.91  | 96.30  |
| Construction                                  | 4.12   | 3.92   | 3.65   | 3.49   | 3.33   | 3.39   | 3.29   | 2.71   |
| Human health and social work activities       | 3.13   | 1.80   | 1.57   | 1.04   | 0.95   | 0.79   | 0.79   | 0.98   |
| Total of emissions                            | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

\*Provisional data

Note: Hydrofluorocarbons (HFCs) emissions are emitted only by the aforementioned sectors of economic activities



## Graph 7: Distribution of hydrofluorocarbons (HFCs) emissions by section of the Statistical Classification of Economic Activities (NACE Rev. 2), 2008-2015



#### Graph 8: Perfuorocarbons (PFCs) emissions in Manufacturing, in tonnes of CO<sub>2</sub> equivalents, 2008-2015

Note: Perfuorocarbons (PFCs) emissions are emitted only by the Manufacturing sector





Note: Sulphur hexafluoride (SF6) emissions are emitted only by the Energy sector

#### **EXPLANATORY NOTES**

- LegalThe Air Emissions Accounts are compiled pursuant to Regulation 691/2011 of the Europeanframework:Parliament and of the Council (Section 1) which provides for and lays down the<br/>methodological frame for the compilation of Air Emissions Accounts.
- **Methodology:** The main source of primary data on greenhouse gas and other air emissions is the Annual inventory submission of Greece under the convention and Kyoto protocol for greenhouse and other gases. This inventory is compiled and submitted by the Ministry of Environment and Energy, in the frame of the Kyoto protocol on greenhouse gases and other gases to UNFCCC and CLRTAP.

#### **Concepts and** Air Emissions Accounts include the following gases categories:

- definitions:
- 1. <u>Carbon dioxide (CO<sub>2</sub>)</u>: Carbon dioxide (CO<sub>2</sub>) is the most important among the greenhouse gases because it is emitted in larger quantities and by important sectors of the economy. The main source of carbon dioxide (CO<sub>2</sub>) emissions is the use of coal substances for energy production.
- Methane (CH<sub>4</sub>): Methane (CH<sub>4</sub>) holds the second place as regards air emissions that impact on the increase of the world temperature, expressed in CO<sub>2</sub> equivalents. The impact of methane (CH<sub>4</sub>) on climate change is approximately 25 times more powerful than Carbon dioxide (CO<sub>2</sub>). The main sources of methane emissions are Agriculture, and mainly Livestock, and Waste management.
- <u>Nitrous oxide (N<sub>2</sub>O)</u>: Nitrous oxide holds the third place as regards air emissions that impact on the increase of the world temperature, expressed in CO<sub>2</sub> equivalents. The impact of N<sub>2</sub>O on climate change is approximately 298 times more powerful than Carbon dioxide (CO<sub>2</sub>). The main sources of nitrous oxide emissions are Agriculture (use of nitrates fertilizers) and Manufacturing.
- 4. <u>Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs</u>): They are in the fourth place as regards air emissions that impact on the increase of the world temperature, expressed in CO<sub>2</sub> equivalents. Their impact on climate change is approximately 5,020 times more powerful than Carbon dioxide (CO<sub>2</sub>). The main source of these gases is Manufacturing and mainly the production of aluminum.
- 5. <u>Sulphur hexafluoride  $(SF_6)$ :  $(SF_6)$  Sulphur hexafluoride  $(SF_6)$  holds the fifth place as regards air emissions that impact on the increase of the world temperature, expressed in CO<sub>2</sub> equivalents. The impact of sulphur hexafluoride on climate change is approximately 23,900 times more powerful than Carbon dioxide (CO<sub>2</sub>). The main source of sulphur hexafluoride emissions is the activities related to electric energy transfer.</u>
- **References:** More information (Tables. questionnaires and methodology) on the survey on Air Emissions Accounts can be found on the website of ELSTAT (<u>www.statistics.gr</u>). at: <u>http://www.statistics.gr/el/statistics/-/publication/SOP08/-</u>