



20 de febrero de 2009

### Energy Consumption Survey. Year 2007. Definitive Data

### Industrial energy consumption reaches 10,980 million euros in 2007

## Consumption of electricity accounts for almost one half of total energy consumption

Industrial energy consumption reached 10,980 million euros in 2007. This figure was 34,3% higher (variations in value are the result of variations in amount and price) than that registered in 2005, the last year that this Survey was conducted.

The main energy products used by industrial companies were electricity (48.3% of the total), gas (27.8%) and petroleum products (17.6%).

### Distribution of industrial energy consumption

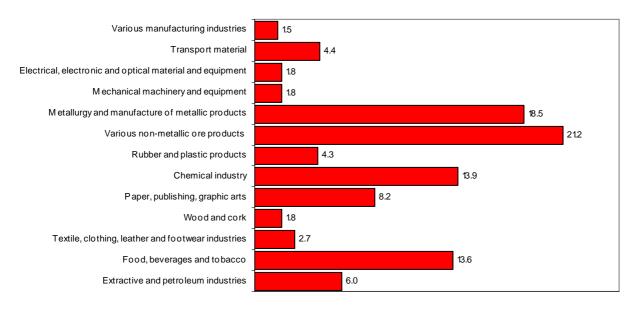
|                           |                           | •     |                           |       |
|---------------------------|---------------------------|-------|---------------------------|-------|
|                           | Data 2005<br>(thousand €) | %     | Data 2007<br>(thousand €) | %     |
| Hard coal and derivatives | 205.937                   | 2,5   | 295.188                   | 2,7   |
| Gasoil                    | 1.088.513                 | 13,3  | 1.295.537                 | 11,8  |
| Heavy fuel oil            | 410.866                   | 5,0   | 369.185                   | 3,4   |
| Other petroleum products  | 191.264                   | 2,3   | 261.056                   | 2,4   |
| Gas                       | 1.992.278                 | 24,4  | 3.047.604                 | 27,8  |
| Electricity               | 3.916.243                 | 47,9  | 5.302.029                 | 48,3  |
| Other energy consumption  | 372.399                   | 4,6   | 409.404                   | 3,7   |
| Total energy consumption  | 8.177.499                 | 100,0 | 10.980.004                | 100,0 |

#### **Energy consumption by activity group**

The activity groups with the greatest energy consumption in 2007 were *Non-metallic ore* products (21.2% of the total), *Metallurgy and manufacture of metallic products* (18.5%), *Chemical industry* (13.9%) and *Food, beverages and tobacco* (13.6%).



### Energy consumption by activity group (Percent of the total). Year 2007



Taking the 2005-2007 period as a reference, the groups in which energy consumption increased the most were *Extractive and petroleum industries* (with an increase of 60.1%) and *Paper, publishing, graphic arts* (50.1%).

### **Energy consumption by activity group**

Variation 2007/2005

| Activity group  | Total energy consumption 2005 | Total energy consumption 2007 | % <u>Λ</u><br>2007/2005 |
|---|-------------------------------|-------------------------------|-------------------------|
|   | (thousand €)                  | (thousand €)                  |                         |
| Extraction and manufacturing industry total               | 8,177,499                     | 10,980,004                    | 34.3                    |
| Extractive and petroleum industries                       | 411,450                       | 658,915                       | 60.1                    |
| Food, beverages and tobacco                               | 1,135,365                     | 1,496,022                     | 31.8                    |
| Textile, clothing, leather and footwear industries        | 263,200                       | 300,238                       | 14.1                    |
| Wood and cork   | 180,075                       | 202,255                       | 12.3                    |
| Paper, publishing, graphic arts                           | 600,896                       | 902,072                       | 50.1                    |
| Chemical industry   | 1,216,534                     | 1,528,876                     | 25.7                    |
| Rubber and plastic products                               | 338,055                       | 471,765                       | 39.6                    |
| Various non-metallic ore products                         | 1,638,282                     | 2,325,319                     | 41.9                    |
| Metallurgy and manufacture of metallic products           | 1,570,585                     | 2,032,129                     | 29.4                    |
| Mechanical machinery and equipment                        | 160,110                       | 202,557                       | 26.5                    |
| Electrical, electronic and optical material and equipment | 156,247                       | 201,980                       | 29.3                    |
| Transport material  | 374,546                       | 487,778                       | 30.2                    |
| Various manufacturing industries                          | 132,155                       | 170,097                       | 28.7                    |

With regard to the use of different types of fuels, worth noting was the high percentage of consumption of electricity registered by the following groups: *Rubber and plastic products* (76.7% of the total) and *Electrical*, *electronic and optical material and equipment* (72.3%).

The use of gas accounted for 43.5% of the total in the *Chemical industry*, and 36.5% in *Various non-metallic ore products*, whilst the consumption of petroleum products represented

37.6% of the total in the *Extractive and petroleum industries* group, and 31.2% in the *Various manufacturing industries* group..

Lastly, the use of hard coal and derivatives accounted for 9.8% of the total in the *Non-metallic mineral products* group.

### Percentage distribution by type of energy and activity group. Year 2007

| Activity group  | Hard coal<br>and<br>derivatives<br>(%) | Petroleum<br>products<br>(%) | Gas<br>(%) | Electricity (%) | Other energy consumption (%) | Total energy consumption |
|---|--|------------------------------|------------|-----------------|------------------------------|--------------------------|
| Extraction and manufacturing industry total               | 2.7                                    | 17.5                         | 27.8       | 48.3            | 3.7                          | 10,980,004               |
| Extractive and petroleum industries                       | 1.2                                    | 37.6                         | 11.9       | 47.0            | 2.3                          | 658,915                  |
| Food, beverages and tobacco                               | 0.3                                    | 24.4                         | 23.8       | 48.8            | 2.7                          | 1,496,022                |
| Textile, clothing, leather and footwear industries        | 0.0                                    | 13.7                         | 27.7       | 55.4            | 3.2                          | 300,238                  |
| Wood and cork   | 0.0                                    | 26.6                         | 11.5       | 57.6            | 4.3                          | 202,255                  |
| Paper, publishing, graphic arts                           | 0.1                                    | 8.5                          | 37.9       | 46.5            | 7.0                          | 902,072                  |
| Chemical industry   | 1.2                                    | 10.9                         | 43.5       | 37.4            | 7.1                          | 1,528,876                |
| Rubber and plastic products                               | 0.0                                    | 6.9                          | 12.2       | 76.7            | 4.1                          | 471,765                  |
| Various non-metallic ore products                         | 9.8                                    | 19.9                         | 36.5       | 31.7            | 2.2                          | 2,325,319                |
| Metallurgy and manufacture of metallic products           | 1.5                                    | 13.1                         | 21.5       | 60.5            | 3.4                          | 2,032,129                |
| Mechanical machinery and equipment                        | 0.2                                    | 26.5                         | 14.6       | 56.8            | 1.9                          | 202,557                  |
| Electrical, electronic and optical material and equipment | 0.0                                    | 17.2                         | 9.3        | 72.3            | 1.2                          | 201,980                  |
| Transport material  | 0.0                                    | 14.7                         | 20.1       | 61.7            | 3.5                          | 487,778                  |
| Various manufacturing industries                          | 3.8                                    | 31.2                         | 6.0        | 57.9            | 1.2                          | 170,097                  |

### **Energy consumption by activity sector**

The Energy Consumption Survey lists 100 sectors, allowing for a detailed study of industrial reality, by providing information on which of the sectors are the most significant in the consumption of the different types of fuel.

Thus, the consumption of **hard coal and its derivatives** was quite significant in terms of percentage in the sectors of *Manufacture of cement, lime and plaster*, which represented 34.4% of the total for the year 2007.

## The 10 industrial sectors with the highest percentage use of coal as compared to the fuel total. Year 2007

| Activity sector   | Hard coal and derivatives (%) |
|---|-------------------------------|
| Manufacture of cement, lime and plaster                               | 34.4                          |
| Recycling   | 17.5                          |
| Extraction and agglomeration of anthracite, coal, lignite and peat    | 8.3                           |
| Manufacture of pipes  | 5.8                           |
| Sugar, cocoa and chocolate industry                                   | 4.2                           |
| Casting of metals   | 3.3                           |
| Ceramic tiles, flooring tiles, bricks, roofing tiles for construction | 2.1                           |
| Manufacture and first transformation of precious metals               | 1.9                           |
| Ceramic goods other than those intended for construction              | 1.7                           |
| Manufacture of basic chemical products                                | 1.7                           |

**Electricity** Consumption represented a very significant part of the total for a large number of industrial sectors.

Those with the highest percentage of consumption in 2007 were Manufacture of isolated electrical wires and cables (with 85.4% of the total), Manufacture of office machinery and IT equipment (84.5%) and Sound and image reception, recording and reproduction devices (84.4%).

### The 10 industrial sectors with the highest percentage use of electricity as compared to the fuel total. Year 2007

| Activity sector  | Electricity (%) |  |
|--|-----------------|--|
| Manufacture of isolated electrical wires and cables                    | 85.4            |  |
| Manufacture of office machinery and IT equipment                       | 84.5            |  |
| Sound and image reception, recording and reproduction devices          | 84.4            |  |
| Manufacture of plastic material products                               | 81.2            |  |
| Measurement, control, optical and photographic instruments and devices | 80.8            |  |
| Leather goods, luggage, saddlery and harness                           | 79.1            |  |
| Manufacture of jewellery and gold and silver articles                  | 79.0            |  |
| Publishing   | 76.9            |  |
| Preparation and spinning of textile fibres                             | 76.4            |  |
| Graphic arts and reproduction of recorded supports                     | 75.5            |  |

The sectors with the greatest participation of **petroleum products** were those of *Manufacture of concrete, plaster and cement articles* (reaching 67.9 % of the total), *Manufacture of wooden containers* (59.0%) and *Manufacture of builders' carpentry and joinery of metal* (58.8%).

# The 10 industrial sectors with the highest percentage use of petroleum products as compared to the fuel total. Year 2007

| Activity sector  | Petroleum products (%) |
|--|------------------------|
| Manufacture of concrete, plaster and cement articles                   | 67,9                   |
| Manufacture of wooden containers                                       | 59,0                   |
| Manufacture of builders' carpentry and joinery of metal, and its parts | 58,8                   |
| Extraction of non-energetic ores                                       | 57,2                   |
| Manufacture of footwear  | 57,0                   |
| Radiofusion and television transmitters                                | 52,7                   |
| Sawing, planing and industrial preparation of wood                     | 50,0                   |
| Manufacture of agricultural machinery                                  | 48,7                   |
| Manufacture of metal structures  | 44,9                   |
| Preservation and processing of fish and fish products                  | 44,7                   |

The use of **gas** (natural and manufactured) was of particular note in the sectors of *Ceramic tiles, flooring tiles, bricks, roofing tiles... for construction* (66.7% of the total), *Manufacture of other chemical products* (60.5%) and *Textile finishings* (59.9%).

## The 10 industrial sectors with the highest percentage use of petroleum products as compared to the fuel total. Year 2007

| Activity sector  | Petroleum products (%) |
|--|------------------------|
| Manufacture of concrete, plaster and cement articles                   | 67,9                   |
| Manufacture of wooden containers                                       | 59,0                   |
| Manufacture of builders' carpentry and joinery of metal, and its parts | 58,8                   |
| Extraction of non-energetic ores                                       | 57,2                   |
| Manufacture of footwear  | 57,0                   |
| Radiofusion and television transmitters                                | 52,7                   |
| Sawing, planing and industrial preparation of wood                     | 50,0                   |
| Manufacture of agricultural machinery                                  | 48,7                   |
| Manufacture of metal structures  | 44,9                   |
| Preservation and processing of fish and fish products                  | 44,7                   |

Lastly, the sectors in which the **other energy consumption** was of note (biomass, heat, ...) were Manufacture of artificial and synthetic fibres (16.2%) and Manufacture of rubber products (14.3%).

# The 10 industrial sectors with the highest percentage use of other energy consumption as compared to the fuel total. Year 2007

| Activity sector  | Other energy consumption (%) |
|--|------------------------------|
| Manufacture of artificial and synthetic fibres             | 16,2                         |
| Manufacture of rubber products                             | 14,3                         |
| Construcción y reparación naval                            | 9,7                          |
| Manufacture of pulp, paper and cardboard                   | 8,5                          |
| Textile finishings   | 8,4                          |
| Construcción aeronáutica y espacial                        | 8,4                          |
| Manufacture of basic chemical products                     | 7,5                          |
| Manufacture of wooden sheets, boards and panels            | 6,9                          |
| Manufacture of pesticides and other agro-chemical products | 6,7                          |
| Paints, varnishes, printing ink and mastics                | 6,2                          |

#### **Energy consumption by Autonomous Community**

By Autonomous Community, the greatest increases in energy consumption during the 2007/2005 period were registered in Canarias (with an increase of 52.0%), Aragón (51.1%) and Andalucía (47.0%).

In turn, the Autonomous Communities presenting the most moderate growth in energy consumption during that same period were Galicia (which presented an increase of 22.9%), Cantabria and Principado de Asturias (both with an increase of 23.6%).

### **Energy consumption by Autonomous Community**

| (Variation 2007/2005)        |   |   | • •            |
|------------------------------|---|---|----------------|
| Autonomous Community         | Total 2005<br>energy<br>consumption<br>(thousand €) | Total 2007<br>energy<br>consumption<br>(thousand €( | %<br>2007/2005 |
| National total               | 8,177,499   | 10,980,004  | 34.3           |
| Andalucía                    | 835,909   | 1,228,432   | 47.0           |
| Aragón                       | 374,291   | 565,628   | 51.1           |
| Asturias (Principado de)     | 374,809   | 463,371   | 23.6           |
| Balears (Illes)              | 36,647  | 47,448  | 29.5           |
| Canarias                     | 70,763  | 107,556   | 52.0           |
| Cantabria                    | 187,934   | 232,312   | 23.6           |
| Castilla y León              | 505,121   | 732,764   | 45.1           |
| Castilla-La Mancha           | 410,156   | 593,869   | 44.8           |
| Cataluña                     | 1,742,229   | 2,168,571   | 24.5           |
| Comunitat Valenciana         | 1,078,736   | 1,433,959   | 32.9           |
| Extremadura                  | 96,308  | 124,030   | 28.8           |
| Galicia                      | 628,360   | 772,233   | 22.9           |
| Madrid (Comunidad de)        | 502,866   | 695,922   | 38.4           |
| Murcia (Región de)           | 193,579   | 264,823   | 36.8           |
| Navarra (Comunidad Foral de) | 244,659   | 325,083   | 32.9           |
| País Vasco                   | 823,899   | 1,129,918   | 37.1           |
| Rioia (La)                   | 71.234  | 94.083  | 32.1           |

#### **Use of fuel by Autonomous Community**

Regarding the **different fuels used**, worth mentioning was that, in eight Autonomous Communities (País Vasco, Región de Murcia, Principado de Asturias, Comunidad Foral de Navarra, Comunidad de Madrid, Cataluña, La Rioja and Galicia), the use of electricity accounted for more than 50% of total energy consumption. In the previous Survey, corresponding to the year 2005, electricity represented more than half of energy consumption in six Communities.

On another hand, the Communities with the highest percentages of consumption of hard coal and its derivatives during the year 2007 were Illes Balears (8.9%) and Principado de Asturias (6.2%).

The Communities making the greatest use of petroleum products were Canarias (37.5%) and Galicia (35.6%).

Lastly, the Communities that presented the highest percentages in the use of gas, during the year 2007, were Comunitat Valenciana (with 44.3% of the total) and Aragón (41.8%).

### Percentage distribution by type of energy and Autonomous Community. Year 2007

| Autonomous Community         | Hard coal<br>and<br>derivatives<br>(%) | Petroleum products (%) | Gas<br>(%) | Electricity<br>(%) | Other energy<br>consumption<br>(%) | Total energy<br>consumption<br>(thousand €) |
|------------------------------|--|------------------------|------------|--------------------|------------------------------------|---|
| National total               | 2.7                                    | 17.5                   | 27.8       | 48.3               | 3.7                                | 10,980,004                                  |
| Andalucía                    | 2.9                                    | 21.6                   | 24.7       | 45.6               | 5.1                                | 1,228,432                                   |
| Aragón                       | 1.8                                    | 15.0                   | 41.8       | 39.3               | 2.1                                | 565,628                                     |
| Asturias (Principado de)     | 6.2                                    | 13.4                   | 18.9       | 53.9               | 7.7                                | 463,371                                     |
| Balears (Illes)              | 8.9                                    | 25.4                   | 20.1       | 42.1               | 3.5                                | 47,448                                      |
| Canarias                     | 2.6                                    | 37.5                   | 8.7        | 48.6               | 2.6                                | 107,556                                     |
| Cantabria                    | 4.6                                    | 12.3                   | 26.5       | 49.3               | 7.2                                | 232,312                                     |
| Castilla y León              | 2.4                                    | 21.3                   | 25.7       | 46.3               | 4.3                                | 732,764                                     |
| Castilla-La Mancha           | 2.4                                    | 23.1                   | 30.7       | 41.2               | 2.6                                | 593,869                                     |
| Cataluña                     | 3.3                                    | 13.1                   | 28.2       | 51.7               | 3.7                                | 2,168,571                                   |
| Comunitat Valenciana         | 2.2                                    | 12.9                   | 44.3       | 38.3               | 2.3                                | 1,433,959                                   |
| Extremadura                  | 2.6                                    | 24.3                   | 22.5       | 49.7               | 0.9                                | 124,030                                     |
| Galicia                      | 1.3                                    | 35.6                   | 9.4        | 50.7               | 3.1                                | 772,233                                     |
| Madrid (Comunidad de)        | 2.3                                    | 20.3                   | 21.5       | 51.9               | 4.0                                | 695,922                                     |
| Murcia (Región de)           | 1.0                                    | 26.5                   | 17.1       | 54.0               | 1.4                                | 264,823                                     |
| Navarra (Comunidad Foral de) | 2.8                                    | 14.3                   | 28.4       | 52.9               | 1.5                                | 325,083                                     |
| País Vasco                   | 2.1                                    | 7.5                    | 27.9       | 57.6               | 4.9                                | 1,129,918                                   |
| Rioja (La)                   | 2.0                                    | 23.6                   | 21.5       | 51.0               | 1.8                                | 94,083                                      |