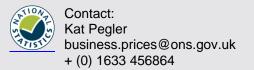


#### Statistical bulletin

# Producer price inflation, UK: April 2015

Changes in the prices of goods bought and sold by UK manufacturers including price indices of materials and fuels purchased (input prices) and factory gate prices (output prices).



Release date: 19 May 2015

Next release: 16 June 2015

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# 1. Main points

- The price of goods bought and sold by UK manufacturers, as estimated by the producer price index, continued to fall in the year to April 2015, with petroleum and crude oil being the main drivers
- The output price index for goods produced by UK manufacturers (factory gate prices) fell 1.7% in the year to April 2015, unchanged since February 2015
- Factory gate prices rose 0.1% between March and April 2015, unchanged from last month
- Core factory gate prices, which exclude the more volatile food, beverage, tobacco and petroleum products, rose 0.1% in the year to April 2015, unchanged from last month
- The overall price of materials and fuels bought by UK manufacturers for processing (total input prices) fell 11.7% in the year to April 2015, up from a fall of 12.8% in the year to March 2015
- Total input prices rose 0.4% between March and April 2015, unchanged from last month

# 2. What is the producer price index (PPI)?

The producer price index (PPI) is a monthly survey that measures the price changes of goods bought and sold by UK manufacturers and provides a key measure of inflation, alongside other indicators such as the consumer price index (CPI) and services producer price index (SPPI). This statistical bulletin contains a comprehensive selection of data on input and output index series and also contains producer price indices of materials and fuels purchased and output of manufacturing industry by broad sector.

The output price indices measure change in the prices of goods produced by UK manufacturers (these are often called "factory gate prices").

The input price indices measure change in the prices of materials and fuels bought by UK manufacturers for processing. These are not limited to materials used in the final product, but also include what is required by the company in its normal day-to-day running.

Imported price indices (IPIs) are a series of economic indicators that measure change in the prices of goods and raw materials imported into the UK. IPIs are a main component of input price indices.

Exported price indices (EPIs) are a series of economic indicators that measure change in the prices of goods manufactured in the UK but destined for export markets.

The factory gate price (the output price) reflects the total price received by the manufacturer for a particular product. It includes costs such as labour, raw materials and energy, as well as interest on loans, site and building maintenance or rent.

Core factory gate inflation excludes price movements from food, beverage, tobacco and alcohol, and petroleum products, which tend to have volatile price movements. It should give a better indication of the underlying output inflation rates.

The input price is the cost of goods bought by UK manufacturers for use in manufacturing, such as the actual cost of materials and fuels bought for processing.

Core input inflation strips out purchases from the more volatile food, beverage, tobacco and alcohol, and petroleum industries to give an indication of the underlying input inflation pressures facing the UK manufacturing sector.

### 3. Output prices: summary

Factory gate inflation fell 1.7% in the year to April 2015, unchanged since February 2015. This is the tenth consecutive fall in the annual rate of output inflation. The annual rate has been steady in 2015, but remains lower than the last 6 months of 2014.

The rate of both total output and core inflation has generally been reducing since autumn 2011 when output inflation reached its post-economic downturn high of 5.3% in September 2011. During this period, core factory gate inflation has tended to run at a lower rate and show a smaller degree of volatility than total output. However, since January 2014, core output price inflation has been running at a slightly higher rate than total output: a result of the downward pressures from petroleum which is excluded from the core measure of inflation (Figure A).

Looking at the latest estimates (Table A), movements in factory gate prices over the 12 months to April 2015 were as follows:

- factory gate prices fell 1.7%, unchanged since February 2015
- core factory gate prices rose 0.1%, unchanged from last month
- factory gate inflation excluding excise duty fell 1.4%, compared with a fall of 1.5% in the year to March 2015

Between March and April 2015:

- factory gate prices rose 0.1%, unchanged from last month
- core factory gate prices showed no movement, also unchanged since February 2015

Table A: Output prices (home sales)

United Kingdom, Nov 2014 to Apr 2015

Percentage change

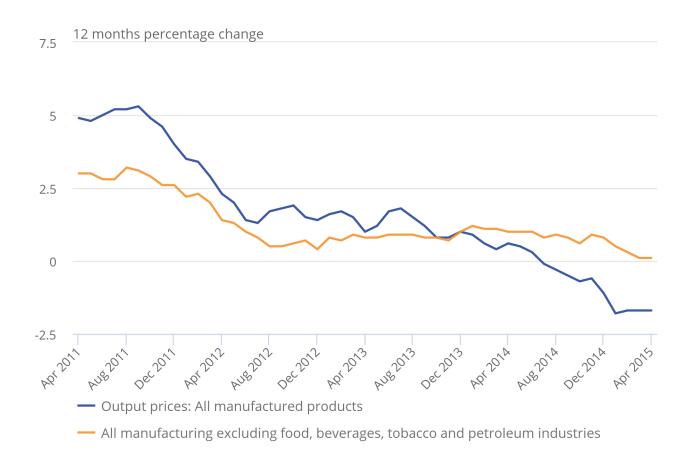
	All manufactured products		Excluding food, beverages, tobacco and petroleum		All manufactured products excluding duty	
	1 month	12 months	1 month	12 months	1 month	12 months
2014 Nov	-0.1	-0.6	0.2	0.9	-0.1	-0.5
2014 Dec	-0.5	-1.1	0.0	0.8	-0.5	-0.8
2015 Jan	-0.5	-1.8	0.2	0.5	-0.3	-1.4
2015 Feb	0.2	-1.7	0.0	0.3	0.1	-1.4
2015 Mar	0.1	-1.7	0.0	0.1	0.2	-1.5
2015 Apr	0.1	-1.7	0.0	0.1	0.1	-1.4

Figure A: Output prices

United Kingdom, Apr 2011 to Apr 2015

## Figure A: Output prices

United Kingdom, Apr 2011 to Apr 2015



**Source: Office for National Statistics** 

# 4 . Supplementary analysis: output prices

Table B shows the annual percentage change in price across all product groups and Figure B shows their contribution to the annual factory gate inflation rate. Table C and Figure C show the same information, but for the monthly factory gate inflation rate.

Table B: 12 months change to April 2015

Product group	Percentage change
Food products	-3.0
Tobacco and alcohol (incl. duty)	1.2
Clothing, textile and leather	0.7
Paper and printing	-0.4
Petroleum products (incl. duty)	-16.3
Chemical and pharmaceutical	-2.2
Metal, machinery and equipment	0.6
Computer, electrical and optical	0.9
Transport equipment	-0.8
Other manufactured products	0.5
All manufacturing	-1.7

Figure B: Output prices: Contribution to 12 months growth rate (-1.7%), April 2015

Figure B: Output prices: Contribution to 12 months growth rate (-1.7%), April 2015

United Kingdom

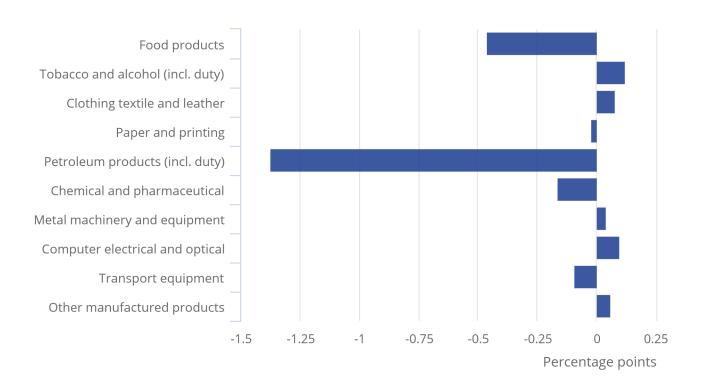


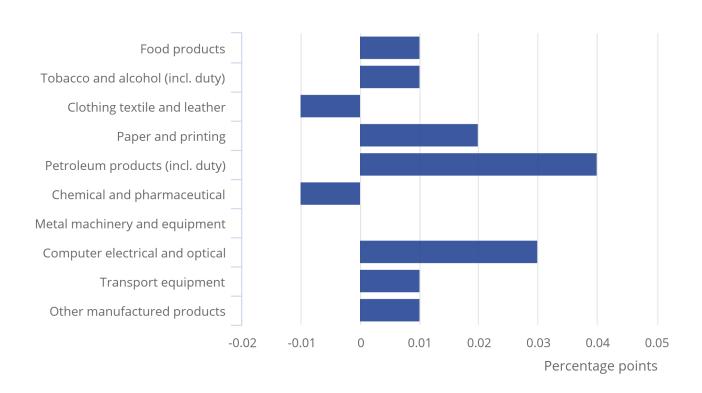
Table C: 1 month change to April 2015

Product group	Percentage change
Food products	0.1
Tobacco and alcohol (incl. duty)	0.0
Clothing, textile and leather	-0.1
Paper and printing	0.4
Petroleum products (incl. duty)	0.4
Chemical and pharmaceutical	-0.1
Metal, machinery and equipment	0.0
Computer, electrical and optical	0.2
Transport equipment	0.1
Other manufactured products	0.1
All manufacturing	0.1

Figure C: Output prices: Contribution to 1 month growth rate (0.1%), April 2015

Figure C: Output prices: Contribution to 1 month growth rate (0.1%), April 2015

United Kingdom



**Source: Office for National Statistics** 

# 5. Output prices: detailed commentary

Factory gate prices fell 1.7% in the year to April 2015, unchanged since February 2015: the tenth consecutive fall on the index. Prior to July 2014, there has been no fall in the annual rate since October 2009, when it fell 0.1%. The main contributions to the annual rate for April 2015 came from a fall in the price of petroleum and food products (Figure B).

The price index between March and April 2015 rose 0.1%, unchanged from last month. Of the 10 groupings shown in Figure C, 7 showed price increases. However, these were all small movements resulting in the low level of monthly inflation.

Petroleum product prices fell 16.3% in the year to April 2015, up slightly from a fall of 16.9% in the year to March 2015. The main contributions to the fall in the annual rate came from diesel and gas oil, and unleaded petrol where prices have been falling over the last 12 months. Diesel and gas oil prices fell by 15.5% in the year to April 2015, with unleaded petrol prices falling by 12.5%.

Petroleum prices between March and April 2015 rose 0.4%, down from a rise of 2.2% between February and March 2015. Unleaded petrol was the main contribution to the rise in the monthly index, increasing by 2.0% between March and April 2015, compared with a rise of 3.3% between February and March 2015.

Food product prices fell 3.0% in the year to April 2015, down from a fall of 2.9% in the year to March 2015. This was mainly due to a fall in the price of dairy products, which fell 15.6% in the year to April 2015, up from a fall of 16.0% in the year to March 2015. Since October 2014, dairy products have seen record falls in the annual rate of inflation, with the rate reaching a record low in March 2015 (data back to 1997) and this has been mainly due to processed liquid milk, prices of which fell 24.1% in the year to April 2015.

### Core factory gate inflation

Core factory gate prices, which exclude the more volatile food, beverage, tobacco and petroleum product prices, giving a measure of the underlying factory gate inflation, rose 0.1% in the year to April 2015. On the monthly index, there has been no movement (0%) between February and April 2015.

## 6. Input prices: summary

Since autumn 2011, the inflation price of materials and fuels purchased by UK manufacturing industry (input prices) fell quite rapidly, from annual inflation of around 16% to deflation (prices lower than they were in the same month of the previous year) of around 2% in the middle of 2012 (Figure D). Input price inflation showed a steady but fairly slow increase from October 2012 to July 2013, when it reached 4.7%. From November 2013, prices started to fall, with input prices currently falling by 11.7%. Over this period, core input inflation (purchases by manufacturing industries other than the more volatile food, beverage, tobacco and petroleum industries) fell at similar levels.

Looking at the latest data (Table D), the main movements in the year to April 2015 were as follows:

- the total input price index fell 11.7%, compared with a fall of 12.8% in the year to March 2015
- the core input price index saw a fall of 3.1%, compared with a fall of 4.4% last month
- the price of imported materials as a whole (including crude oil) fell 11.1%, up from a fall of 12.0% last month (Table 7 Input prices: detailed by commodity (not seasonally adjusted) - SIC 2007) (229.5 Kb Excel sheet)

Between March and April 2015:

- the total input price index rose 0.4%, unchanged from last month (Table D)
- in seasonally adjusted terms, (see Table D) the input price index for the manufacturing industry excluding the food, beverage, tobacco and petroleum industries rose 0.8%, up from a fall of 0.6% last month, this is the largest increase since July 2013 when it rose to 1.1%

**Table D: Input prices** 

United Kingdom, Nov 2014 to Apr 2015

Percentage change

	Materials and fo	uels purchased	Excluding food, beverage, tobacco and petroleum industries		
	1 month (NSA) <sup>1</sup>	12 months (NSA) <sup>1</sup>	1 month (NSA) <sup>1</sup>	12 months (NSA) <sup>1</sup>	1 month (SA) <sup>2</sup>
2014 Nov	-0.8	-8.3	0.5	-1.7	0.0
2014 Dec	-3.3	-11.6	-0.9	-2.3	-0.9
2015 Jan	-3.6	-14.1	-1.2	-3.2	-1.2
2015 Feb	0.2	-13.5	-1.3	-4.0	-1.5
2015 Mar	0.4	-12.8	-0.2	-4.4	-0.6
2015 Apr	0.4	-11.7	0.3	-3.1	0.8

Source: Office for National Statistics

Notes:

1. NSA: Not Seasonally Adjusted

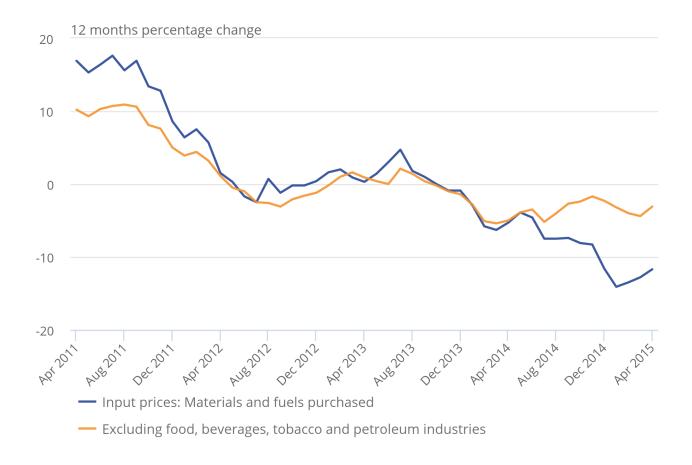
2. SA: Seasonally Adjusted

Figure D: Input prices (materials and fuel) manufacturing industry

United Kingdom, Apr 2011 to Apr 2015

# Figure D: Input prices (materials and fuel) manufacturing industry

United Kingdom, Apr 2011 to Apr 2015



**Source: Office for National Statistics** 

### Notes for input prices: summary

- 1. These indices include the Climate Change Levy (CCL) which was introduced in April 2001
- 2. These indices include the Aggregates Levy which was introduced in April 2002

# 7. Supplementary analysis: input prices

Table E and Figure E show the percentage change in the price of the main commodities groups over the year and their contributions to the total input index. Table F and Figure F show the same for the monthly input prices.

Table E: 12 months change to April 2015

Product group	Percentage change
Fuel including Climate Change Levy	-0.7
Crude oil	-38.2
Home food materials	-11.9
Imported food materials	-5.6
Other home-produced materials	5.6
Imported metals	-4.5
Imported chemicals	-5.9
Imported parts and equipment	0.8
Other imported materials	-1.9
All manufacturing	-11.7

Figure E: Input prices: Contribution to 12 months growth rate (-11.7%), April 2015

Figure E: Input prices: Contribution to 12 months growth rate (-11.7%), April 2015

United Kingdom

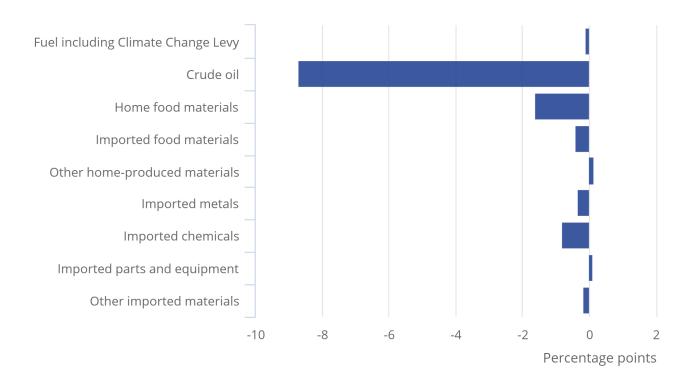


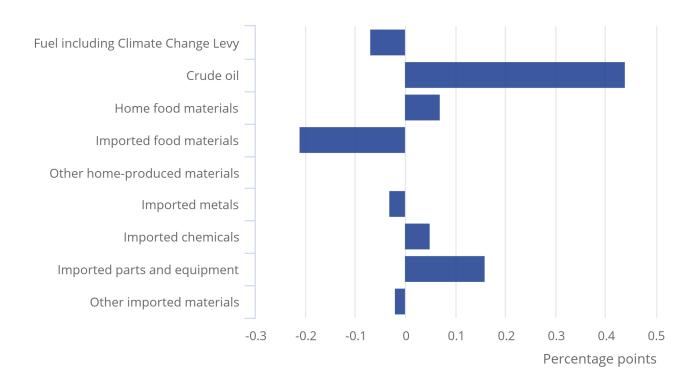
Table F: 1 month change to April 2015

Product group	Percentage change
Fuel including Climate Change Levy	-0.5
Crude oil	2.9
Home food materials	0.6
Imported food materials	-2.7
Other home-produced materials	0.1
Imported metals	-0.4
Imported chemicals	0.4
Imported parts and equipment	0.9
Other imported materials	-0.2
All manufacturing	0.4

Figure F: Input prices: Contribution to 1 month growth rate (0.4%), April 2015

Figure F: Input prices: Contribution to 1 month growth rate (0.4%), April 2015

United Kingdom



**Source: Office for National Statistics** 

# 8. Input prices: detailed commentary

The overall input index for all manufacturing, that is, the price of materials and fuels purchased by manufacturers, fell 11.7% in the year to April 2015, compared with a fall of 12.8% in the year to March 2015. The main downward contributions to the index came from crude oil (down 38.2% in the year to April 2015) and home-produced food (down 11.9% in the year to April 2015).

The monthly input index rose 0.4% between March and April 2015, unchanged from last month. This rise was driven by an increase in the price of crude oil, which rose by 2.9% between March and April 2015 (see Table F and Figure F).

Crude oil prices fell 38.2% in the year to April 2015, up from a fall of 40.3% last month, the 19th consecutive fall in the annual rate. Despite annual prices falling overall in the last 12 months, crude oil prices increased by 2.9% between March and April 2015, down from a rise of 5.1% between February and March 2015. Prices continue to rise, although more slowly in April, as a result of disruptions to supply. In April these disruptions were mainly a result of conflict in Yemen.

Home-produced food prices fell to 11.9% in the year to April 2015, up from a fall of 12.1% in the year to March 2015. The annual contribution came from crop and animal production; hunting and related services, which fell 12.3%, compared to a fall of 12.6% in the year to March 2015.

# Core input price index (excluding purchases from the food, beverage, tobacco and petroleum industries)

The core input price index, in seasonally adjusted terms, rose 0.8% between March and April 2015. The unadjusted index rose 0.3% between March and April 2015, compared with a fall of 0.2% last month.

### 9. Revisions

For this bulletin <u>reference tables 8R and 9R (229.5 Kb Excel sheet)</u> highlight revisions to movements in price indices previously published in last month's <u>statistical bulletin</u>. Revisions are generally a result of changes to the most recent estimates, as more price quotes are received, and revisions to seasonal adjustment factors, which are re-estimated every month.

The headline figures have small revisions which were mainly caused by late data. For more information about the <u>ONS revisions policy</u> see our website.

Table G: Revisions between first publication and estimates 12 months later

			%
	Revisions between first publication and estimates 12 months later		
	Value in latest period	Average over the last 5 years	Average over the last 5 years without regard to sign (average absolute revision)
Total output (JVZ7) - 12 months	-1.7	-0.15	0.21
Total output (JVZ7) - 1 month	0.1	0.01	0.08
Total input (K646) - 12 months	-11.7	0.03	0.36
Total input (K646) - 1 month	0.4	0.05	0.28

Source: Office for National Statistics

Note:

1. \*Statistically significant

Revisions to data provide one indication of the reliability of key indicators. Table G shows summary information on the size and direction of the revisions which have been made to the data, covering a 5-year period. A statistical test has been applied to the average revision to find out if it is statistically significantly different from zero. An asterisk (\*) shows that the test is significant.

0/

The table presents a summary of the differences between the first estimates, published between December 2007 and March 2015, and the estimates published 12 months later. These numbers include the effect of the reclassification onto the standard industrial classification (SIC) 2007.

Spreadsheets giving revisions triangles of estimates for all months from January 1998 through to March 2015 and the calculations behind the averages in the table, are available in the reference table area of our website:

- revision triangle for total output (12 months) (2.32 Mb Excel sheet)
- revision triangle for total output (1 month) (2.28 Mb Excel sheet)
- revision triangle for total input (12 months) (2.33 Mb Excel sheet)
- revision triangle for total input (1 month) (2.31 Mb Excel sheet)

## 10. Background notes

#### 1. What's new?

<u>Guidance on using indices in indexation clauses (197 Kb Pdf)</u> has been published on our website. It covers producer prices, services producer prices and consumer prices.

#### 2. How are we doing?

We are constantly aiming to improve this release and its associated commentary. We welcome any feedback and are particularly interested in knowing how you use these data to inform your work. Please email us: ppi@ons.gsi.gov.uk

#### 3. PPI methods and guidance

An up-to-date manual for the producer price index, including the import and export price index is now available. PPI methods and guidance provides an outline of the methods used to produce the PPI as well as information about recent PPI developments.

#### 4. Changing the way we publish producer price datasets

The 2 Producer Price datasets called aerospace and electronic cost indices (MM19) and producer price indices (MM22) are now published on the producer price index webpage, which holds the statistical bulletin reference tables. This is to make all PPI datasets more accessible within one release.

#### 5. Analysis of producer price indices using standard errors

We have published an article on the <u>analysis of producer price indices (PPI) using standard errors</u> on 17 June 2014. The article presented the calculated standard errors of the PPI during the period February 2013 to January 2014, for both month-on-month and 12-month growth.

#### 6. Article about rebasing the PPI and SPPI onto 2010=100

As previously announced, we have taken forward the rebasing of the PPI onto a 2010=100 basis. The first published data using 2010=100 was released in November 2013. An article <u>describing the results of this assessment</u> was also published on 12 November 2013. If you have any questions or queries regarding the impact of rebasing on PPI data, please contact <u>PPI operations</u>.

#### 7. Finding PPI data

All of the data included in this statistical bulletin, alongside data for the full range of PPIs, is available in the associated reference tables. Also available are the datasets for the <u>aerospace and electronic indices</u> and the <u>producer price indices</u>, or these can be downloaded from the time series pages. There are <u>PPI records (92.5 Kb Excel sheet)</u> available which gives the higher, lower and equal to movements for each index. Each PPI has two unique identifiers: a 10 digit index number, which relates to the <u>standard industrial</u>

<u>classification</u> code appropriate to the index; and a 4-character alpha-numeric code, which can be used to find series when using the time series dataset for PPI.

#### 8. Quality and methodology information

A <u>quality and methodology information (QMI) (95.6 Kb Pdf)</u> paper for the PPI describes in detail the intended uses of the statistics presented in this publication, their general quality and the methods used to produce them.

#### 9. European comparability

The UK is required to compile and deliver the output PPI to Eurostat under the <a href="Short-Term Statistics">Short-Term Statistics</a>
Regulation. As a result, all EU countries must produce equivalent series on a comparable basis. Eurostat produce <a href="European aggregates for total domestic and export PPI">European aggregates for total domestic and export PPI</a> on a gross sector basis and publish a monthly press release. Detailed PPI figures for the UK and the rest of the EU are also published on <a href="Eurostat's">Eurostat's</a> website.

#### 10. Relevance to users

Index numbers shown in the main text of this bulletin are on a net sector basis. The index for any sector relates only to transactions between that sector and other sectors, sales and purchases within sectors are excluded. However, the more detailed figures shown in <a href="reference tables 4">reference tables 4</a> and 6 (229.5 Kb Excel sheet) are on a gross basis; intra industry sales and purchases are included in each of these indices.

Indices relate to average prices for a month. The full effect of a price change occurring part way through any month will only be reflected in the following month's index.

All index numbers exclude VAT. Excise duty (on cigarettes, manufactured tobacco, alcoholic liquor and petroleum products) are included, except where labelled otherwise. Since PPIs exclude VAT, they are not affected by the increase in the standard rate of VAT to 20% from 4 January 2011.

The detailed input indices of prices of materials and fuels purchased by industry (reference table 6) (229.5 Kb Excel sheet) do not include the climate change levy (CCL). This is because each industry can, in practice, pay its own rate for the various forms of energy, depending on the various negotiated discounts and exemptions that apply.

#### 11. Common pitfalls in interpreting series

Expectations of accuracy and reliability in sample surveys are often too high. Revisions and sampling variability are inevitable consequences of the trade-off between timeliness, accuracy and the burden on respondents. Details of sampling variability are included elsewhere in this bulletin.

Very few statistical revisions arise as a result of "errors" in the popular sense of the word. All estimates, by definition, are subject to statistical "error" but, in this context, the word refers to the uncertainty in any process or calculation that uses sampling, estimation or modelling. Most revisions reflect either the adoption of new statistical techniques or the incorporation of new information which allows the statistical error of previous estimates to be reduced. Only rarely are there avoidable "errors" such as human or system failures, and such mistakes are made quite clear when they are discovered and corrected.

#### 12. Definitions and explanations

Definitions found within the main statistical bulletin are listed here:

#### Index number

A measure of the average level of prices, quantities or other measured characteristics, relative to their level, for a defined reference period of location. It is expressed as a percentage above or below, but relative to, the base index of 100.

#### Seasonally adjusted

Seasonal adjustment aids interpretation by removing effects associated with the time of the year or the arrangement of the calendar, which could obscure movements of interest. Seasonal adjustment removes regular variation from a time series. Regular variation includes effects due to month lengths and different activity near particular events, such as bank holidays and leap years.

#### **Prices**

All characteristics that determine the price of the products, including quantity of units sold, transport provided, rebates, service conditions, guarantee conditions and destination are taken into account.

The appropriate price is the basic price, which excludes VAT and similar deductible taxes directly linked to turnover, as well as all duties and taxes on the goods and services invoiced by the unit. Any subsidies on products received by the producer are added.

Transport costs are included but only as part of the product specification.

An actual transaction price and not a list price is given to show the true development of price movements.

The output price index takes into account the quality changes in products.

The price collected in period t (time of the order) refers to orders booked during period t, not when the commodities leave the factory gates.

For output prices on the non-domestic market, the price is calculated at national frontiers, FOB (free on board). This means that the seller pays for transportation of the goods to the port of shipment, plus loading costs, and the buyer pays freight, insurance, unloading costs and transportation from the port of destination to the factory.

#### Standard errors

Standard errors are used to show the difference between an estimated value and the true population value, and are one way of measuring the quality of a price index.

#### 13. Accuracy

Figures for the latest 2 months are provisional and the latest 5 months are subject to revisions in light of a) late and revised respondent data, and b) for the seasonally adjusted series; revisions to seasonal adjustment factors are re-estimated every month. A routine seasonal adjustment review is normally conducted in the autumn each year.

#### 14. Publication policy

The complete run of data in the tables of this bulletin are also available to view and download in other electronic formats free of charge using the Office for National Statistics datasets and reference table service (if you want the data associated with this bulletin click into Download data in this release option). Users can download the complete release in a choice of zipped formats or view and download their own selections of individual series.

Details of the policy governing the release of new data are available from the Media Relations Office. A list of the names of those given pre-publication access to the contents of this bulletin is available on the Producer Price Index: Pre-release access list.

#### 15. Following ONS

Follow us on Twitter and Facebook and receive up-to-date information about our statistical releases.

#### 16. Code of practice

National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference and released according to the arrangements approved by the UK Statistics Authority.

Office e-mail: media.relations@ons.gsi.gov.uk.

#### **Next publication:**

16 June 2015

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17. Details of the policy governing the release of new data are available by visiting <a href="www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html">www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html</a> or from the Media Relations Office email: <a href="media.relations@ons.gsi.gov.uk">media.relations@ons.gsi.gov.uk</a>

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs
- are well explained and readily accessible
- are produced according to sound methods
- are managed impartially and objectively in the public interest

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.