

The wholesale market report and the annexes showcase important historical data for the wholesale UK electricity and gas markets: Demand levels, trading volumes, prices and generation make up. This report will be produced monthly for data from the preceding month. This report should not be used for trading, does not attempt to produce information on individual commercial strategies and does not provide forecasts or daily prices.

## Key figures

- ▶ GB transmission connected demand stood at **0.87 TWh/day** for power and **3.02 TWh/day** for natural gas in November.
- ▶ The churn ratio for electricity was 3.84, the churn ratio for gas was 7.90 in November.
- ▶ In November, the power delivered to the UK grid was generated by:

**Coal:** 12.36%

**Gas power stations:** 45.48%

**Nuclear:** 19.85%

**Wind:** 14.50%

**Hydro:** 1.56%

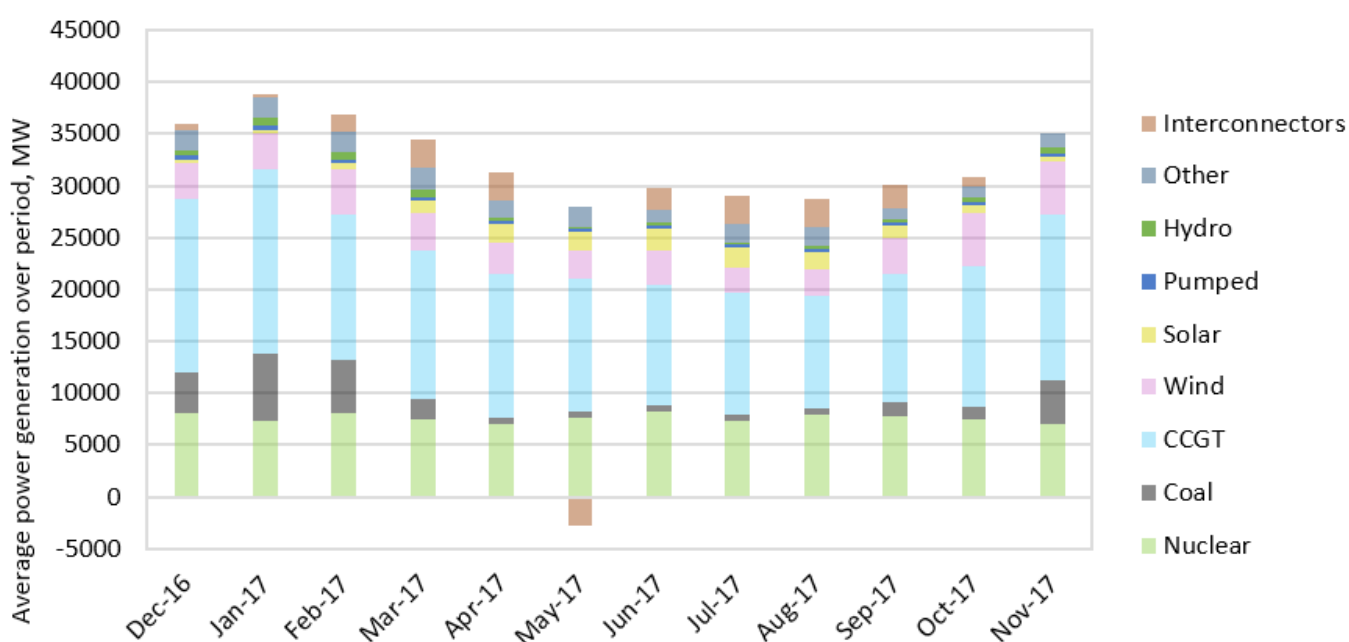
**Interconnectors:** -0.28% net with -1.64% from France and 1.51% from Holland

**Solar:** 1.51%

**Other:** 4.04%

- ▶ Over November the average daily price for power was **£49.72/MWh** and the spot price for gas was **52.68p/thm**.

## GB Generation mix

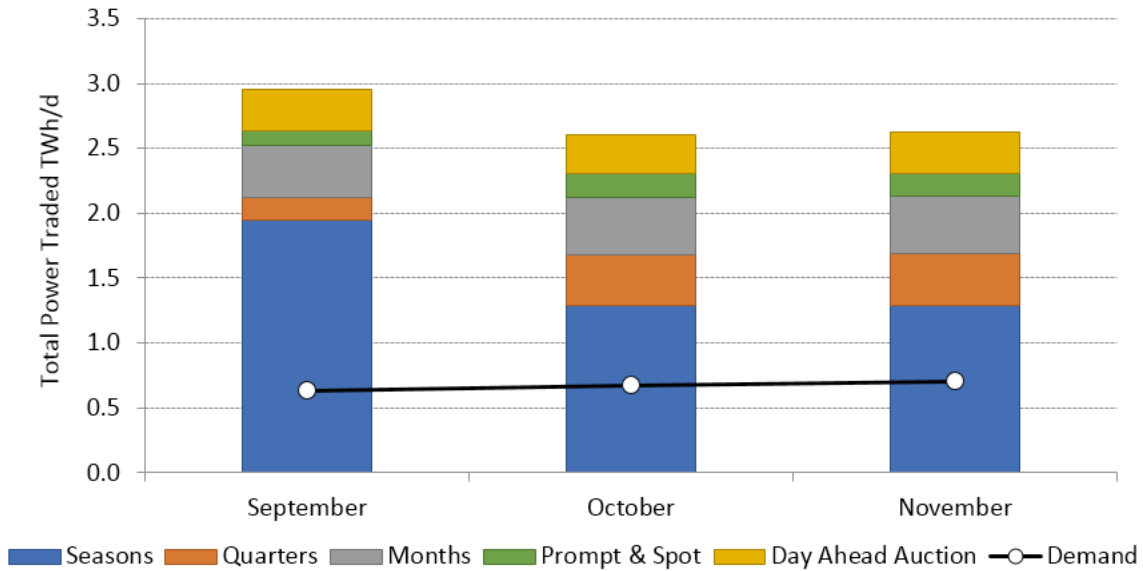


Source: GridWatch

## Trading

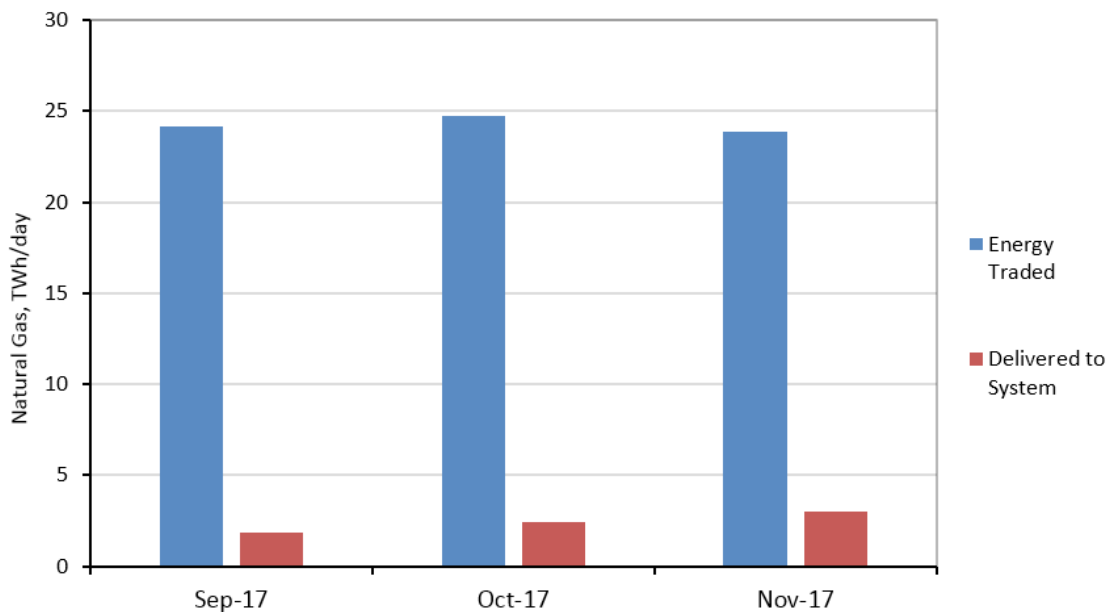
This graph shows the traded volumes of different types of contracts to deliver to the respective months set against demand.

Total traded electricity delivered in last 3 months



Source: EDF & ICIS Heren

Gas traded and delivered to Grid by delivery month

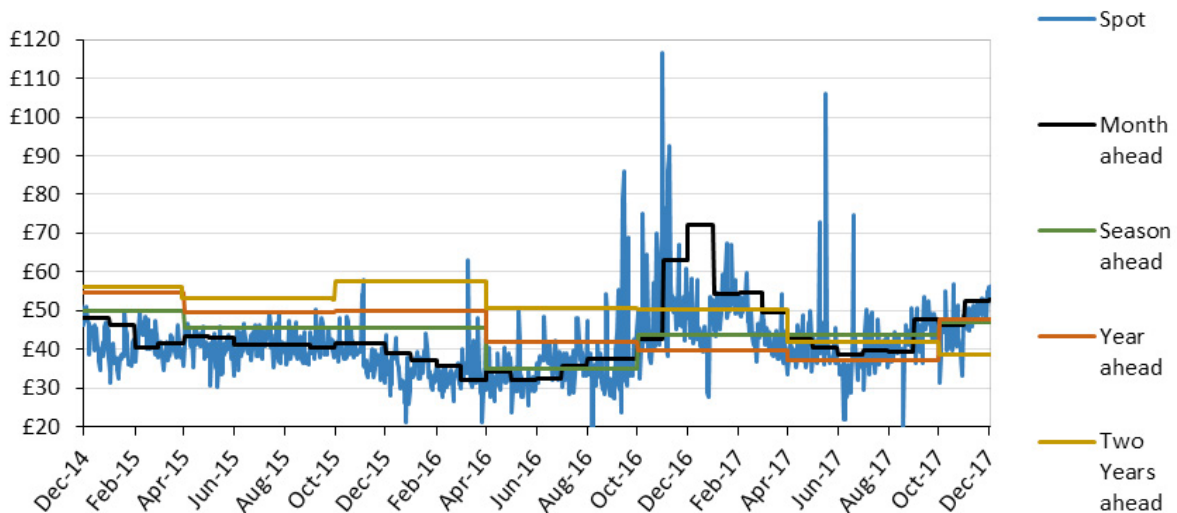


Source: National Grid

## Pricing

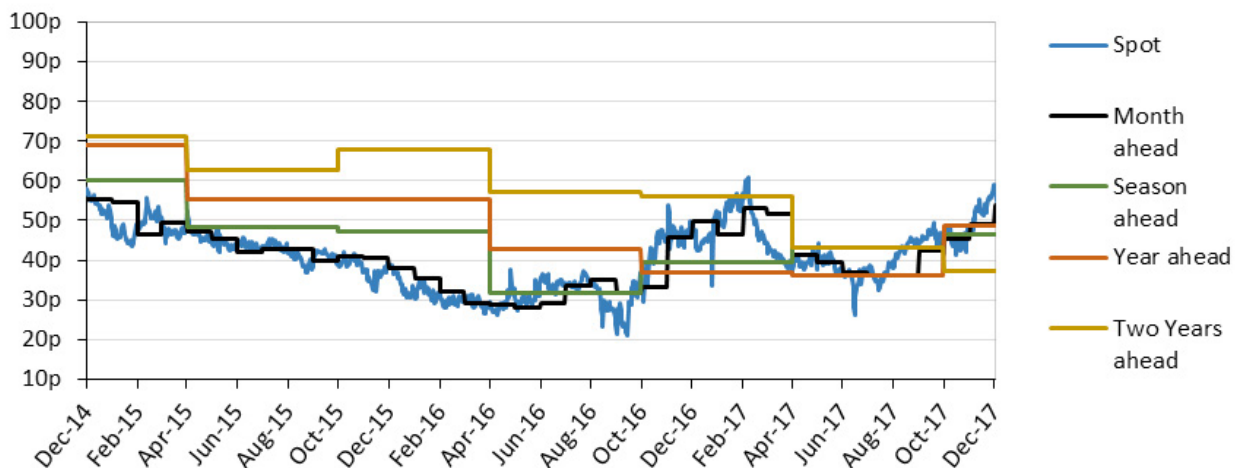
These graphs illustrate relative to delivery date the difference in price you would have paid purchasing power and gas at different times. They show the historical price movements of spot, month ahead (averaged monthly) and season one, two and four ahead contracts (averaged over a season) for the past two years. For example, at the start of 2016 long term seasonal products were generally more expensive than short term products, whereas towards the end of 2016 the opposite was the case.

Average wholesale baseload UK power prices by delivery date, £/MWh



Source: EPEX Spot, ICE (Intercontinental Exchange)

Average gas prices traded and delivered to Grid by delivery date, p/Thm



Source: National Grid, ICE (Intercontinental Exchange)

- ▶ **Baseload:** An amount of electric power delivered or required over a given period at a constant rate.
- ▶ **BEIS:** Department for Business, Energy and Industrial Strategy.
- ▶ **Churn ratio:** Here means the ratio for a specific time period between; volumes of trades to deliver on that period and; the total demand over that period. Typically volumes traded are over 10 to 20 times demand in the gas wholesale market, whereas for the electricity wholesale market the ratio is typically less than 4.
- ▶ **kWh:** Kilowatt-hour, a unit of energy equal to delivering 1kW for an hour, which is commonly used for retail pricing.
- ▶ **LEBA:** London Energy Brokers' Association. The members of LEBA facilitate bilateral trades between parties, termed Over the Counter (OTC) trades.
- ▶ **Liquidity:** A liquid market is one where there are ready and willing buyers and sellers and where what is being bought and sold is easy to price and can trade without a significant price impact. Liquid markets are ones where there is a high turnover and where volumes traded are significant.
- ▶ **LNG:** Liquefied Natural Gas. Natural gas is easier to transport in liquid form if a pipeline is not available as it requires less space.
- ▶ **Month ahead:** Electricity traded for delivery in the next month.
- ▶ **NBP (National Balancing Point):** The virtual hub at which all gas flows onto and out of the gas grid are set against.
- ▶ **Season ahead:** trade for electricity delivered in a particular future season – summer or winter.
- ▶ **Seasons:** There are two season for wholesale energy: Winter which runs from October to March and; Summer which runs from April to October.
- ▶ **Thm:** Therm, a non-SI measurement of heat energy which companies use to measure their gas needs. Burning one therm of gas is approximately equivalent to releasing 29.3 KWh of energy (before heat loss).

Additional data on wholesale market activity can be found on the following links:

### Supply and demand data

- **BM reports Market Index Data**
- **Gridwatch**

### Prices data

- **EPEXSPOT UK**
- **N2EX**

### Forward exchange prices

- **NASDAQ**
- **The ICE**

### Over-the-Counter (OTC) prices

- **London Energy Brokers' Association (LEBA)**

### Price reporting agencies

- **ICIS Heren**
- **Platts**
- **Argus**

### Energy UK

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London SW1Y 4LR

### Press Office

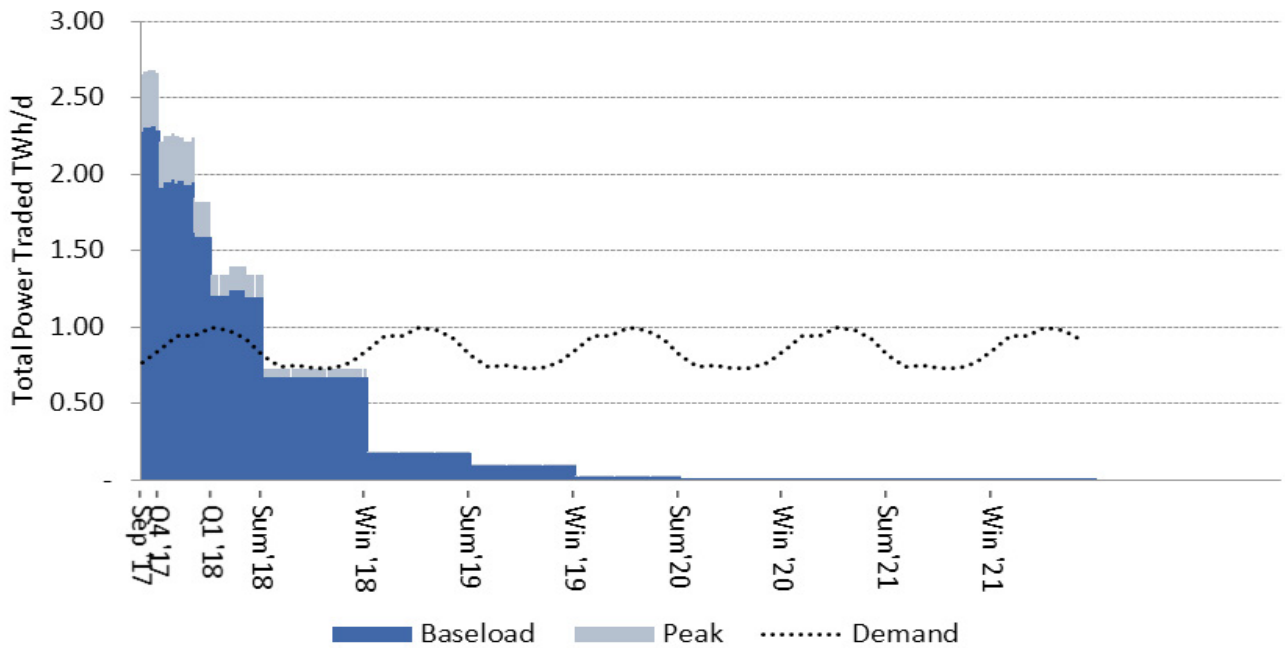
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# Wholesale Market Report Annex

## Forward trading volumes

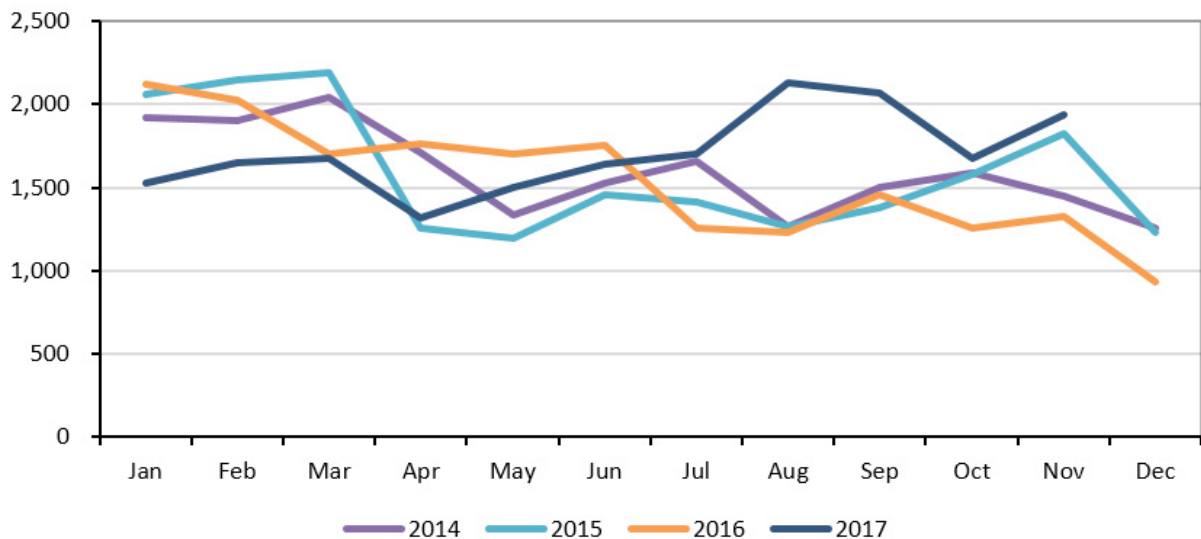
These graphs show the levels of liquidity in the forward power and gas market.

Power forward curve liquidity



Source: EDF and ICIS Heren

Natural gas forward volumes traded by month, TWh



Source: ICE and LEBA

In 2016, electricity final consumption (excluding losses and energy industry own use) across the economy was 304 Terawatt hours (TWh), split into three groups:

**Industrial:** 91.91 TWh

**Domestic:** 107.97 TWh

**Commercial premises, public administration, transport and agriculture:** 104.02 TWh

In 2016 the UK produced 462.75 TWh of natural gas, imported 532.17 TWh and exported 114.29 TWh.

In 2016, 409.86 TWh of natural gas was imported by pipelines, of which 347.01 TWh came from Norway, 47.44 TWh from the Netherlands and 15.41 TWh from Belgium. Additionally 122.31 TWh of liquefied natural gas (LNG) was imported, of which the vast majority - 112.01 TWh - came from Qatar.

Gas consumption was split by:

**Domestic:** 311.38 TWh

**Industry:** 98.01 TWh

**Other uses such as non-energy uses, commercial and public:** 88.81 TWh

**Energy industry (mainly used as fuel to produce electricity):** 298.1 TWh

The average domestic customer gas consumption in 2016 was 4.6% higher compared to 2015, at 13,801 kilowatt hours (kWh), or 14,233 kWh adjusted for temperature: approximately sufficient\* to boil a kettle nearly 128,000 times.

The average electricity consumption per household in 2016 was 0.8% lower compared to 2015, at 3,889 kilowatt hours (kWh), or 3,900 kWh adjusted for temperature; approximately equivalent to boiling a kettle 35,000 times.

\* One kilowatt hour is approximately enough to boil a kettle nine times

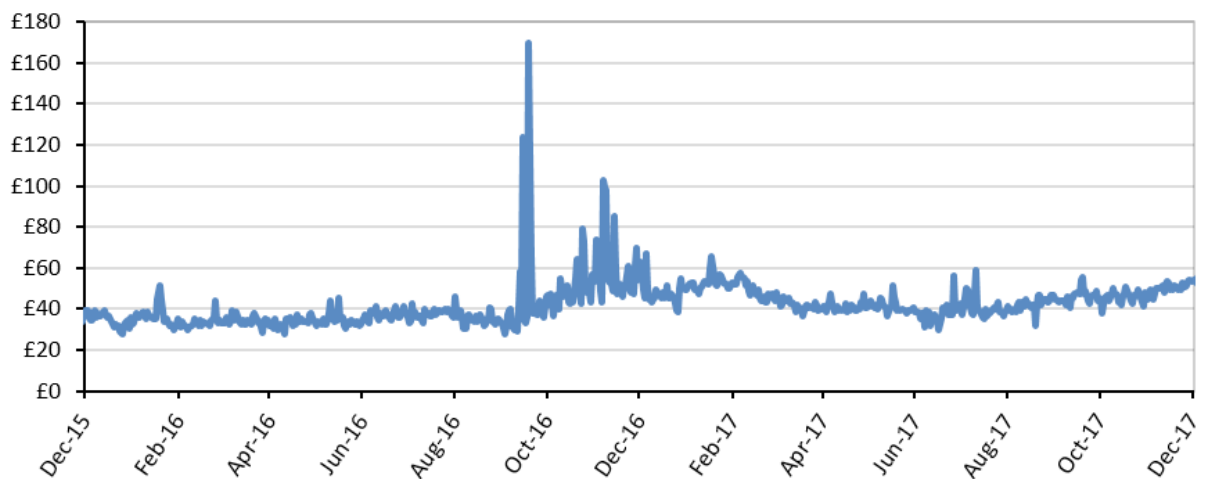
**Source: DUKES 2017 and Energy Consumption in the UK 2017**

## Baseload power prices to deliver to the GB Grid £/MWh

These graphs show the daily price of traded power contracts to deliver to the GB grid.

### Baseload power day ahead auction

#### Volume weighted average price, £/MWh



Source: EPEX Spot

### Baseload power front month

#### Volume weighted average price, £/MWh



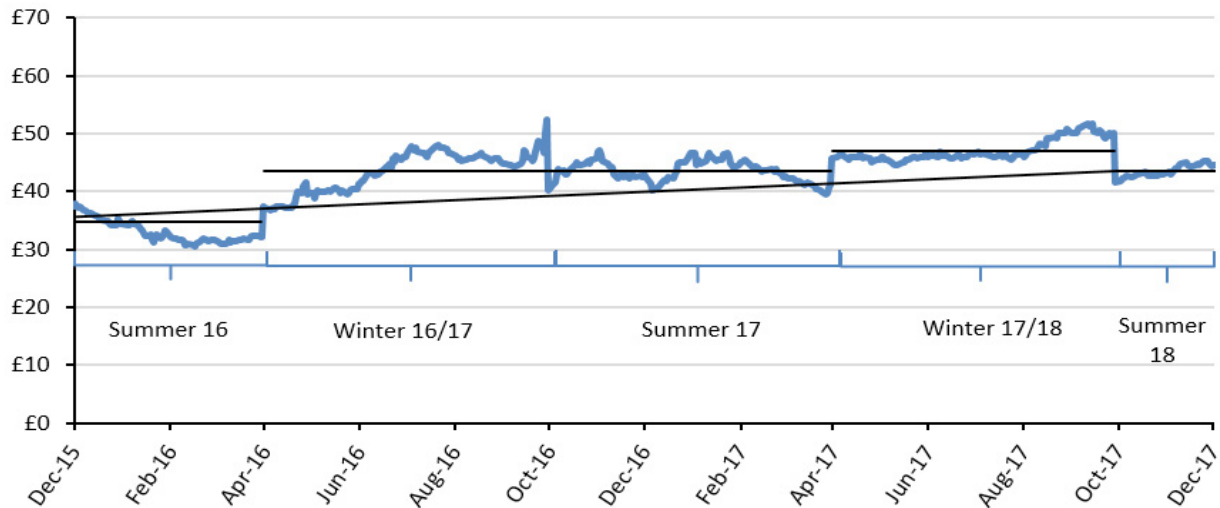
Source: ICE (Intercontinental Exchange)

## Baseload power prices to deliver to the GB Grid £/MWh

These graphs show the daily price of traded power contracts to deliver to the GB grid.

### Baseload power front season

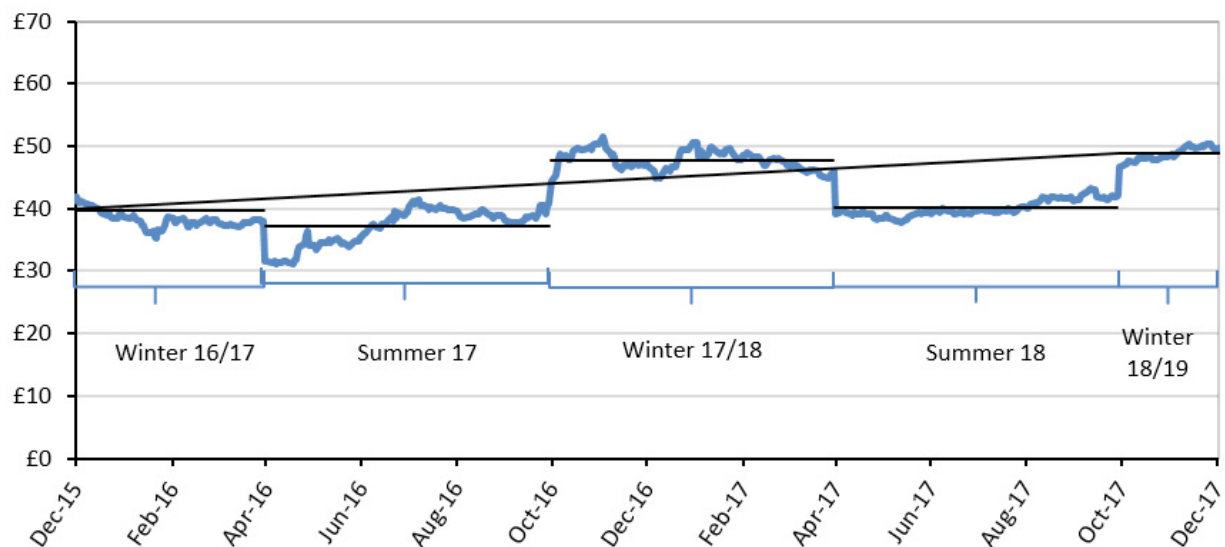
#### Volume weighted average price, £/MWh



Source: ICE (Intercontinental Exchange)

### Baseload power season+2

#### ICE settlement price, £/MWh



Source: ICE (Intercontinental Exchange)

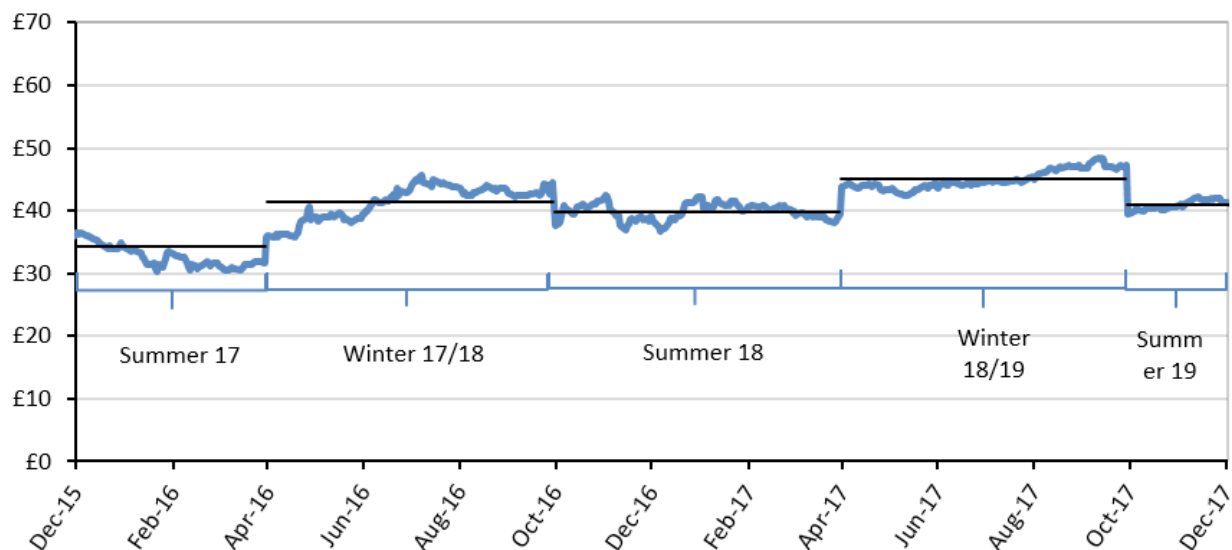


## Baseload power prices to deliver to the GB Grid £/MWh

These graphs show the daily price of traded power contracts to deliver to the GB grid.

### Baseload power season+3

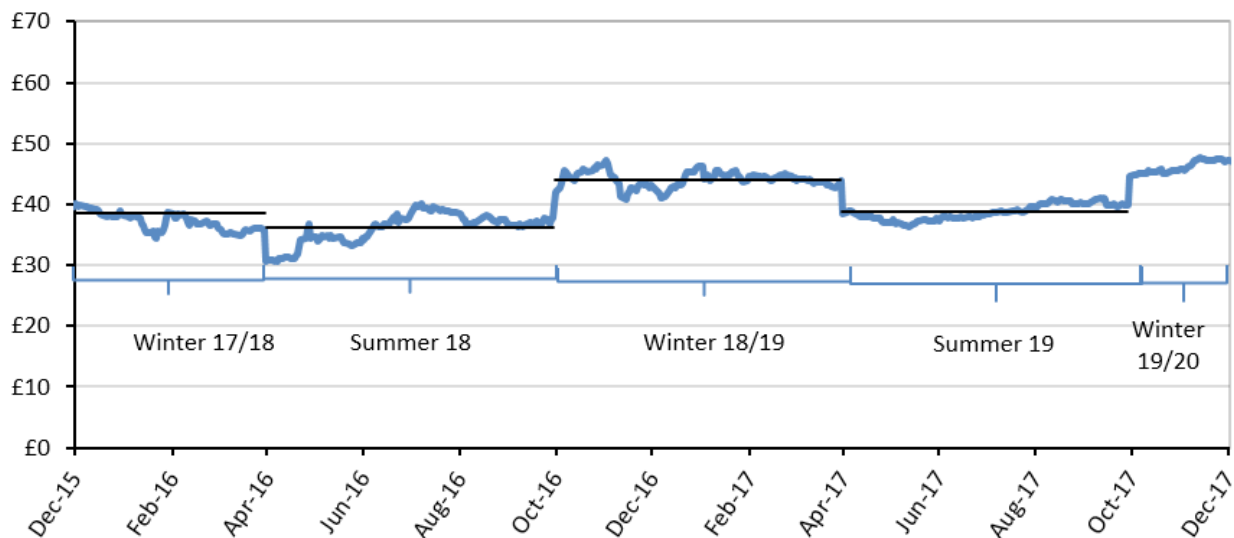
#### ICE settlement price, £/MWh



Source: ICE (Intercontinental Exchange)

### Baseload power season+4

#### ICE settlement price, £/MWh



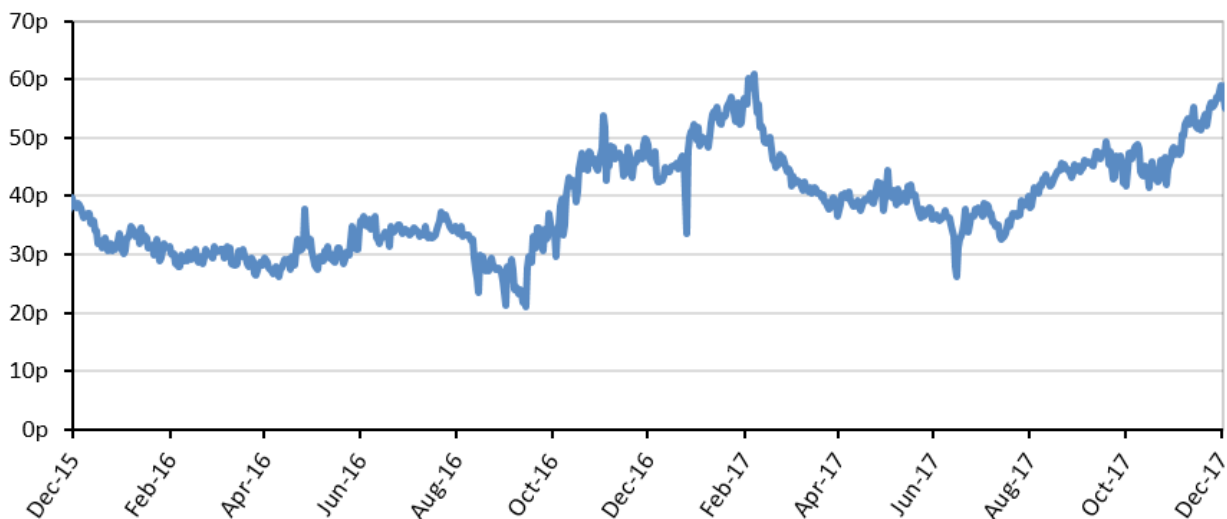
Source: ICE (Intercontinental Exchange)

## Natural gas prices to deliver to the GB grid p/thm

These graphs show the daily price of traded gas contracts to deliver to the GB gas grid at National Balancing Point.

### Natural Gas system average daily price

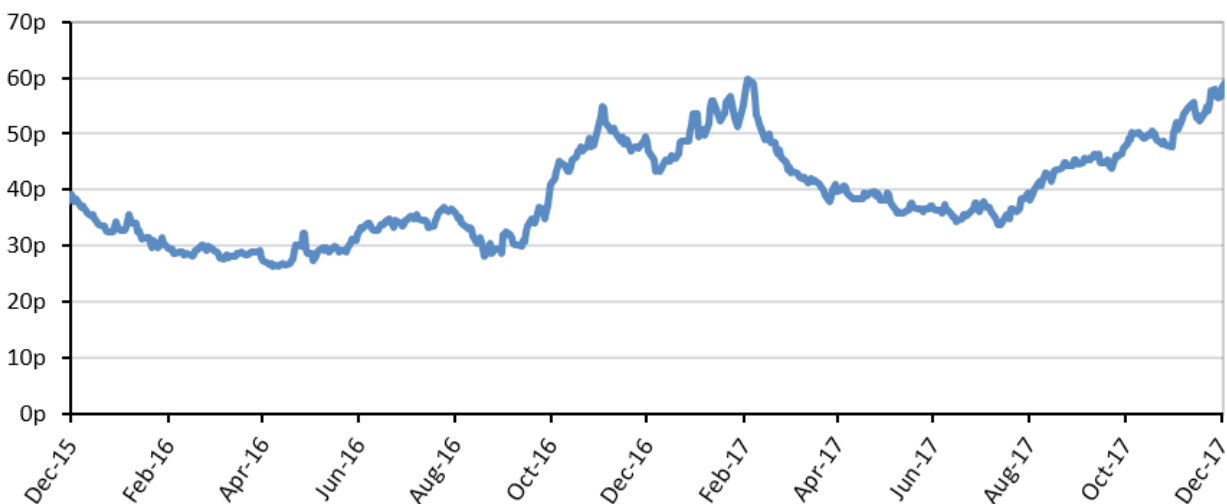
#### Volume weighted average price, p/thm



Source: National Grid

### Natural gas front month

#### ICE settlement price, p/thm



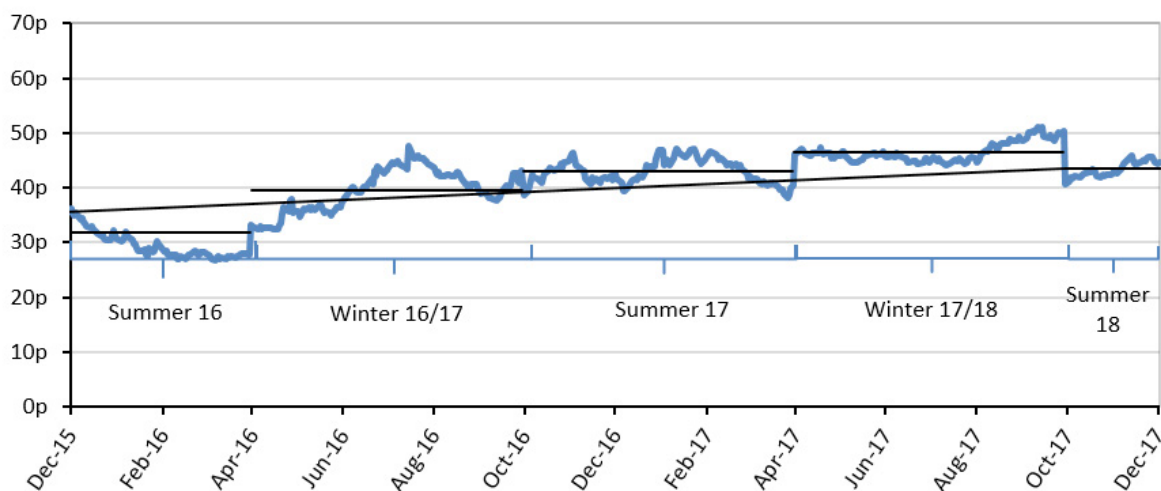
Source: ICE (Intercontinental Exchange)

## Natural gas prices to deliver to the GB grid p/thm

These graphs show the daily price of traded gas contracts to deliver to the GB gas grid at National Balancing Point.

### Natural gas season+1

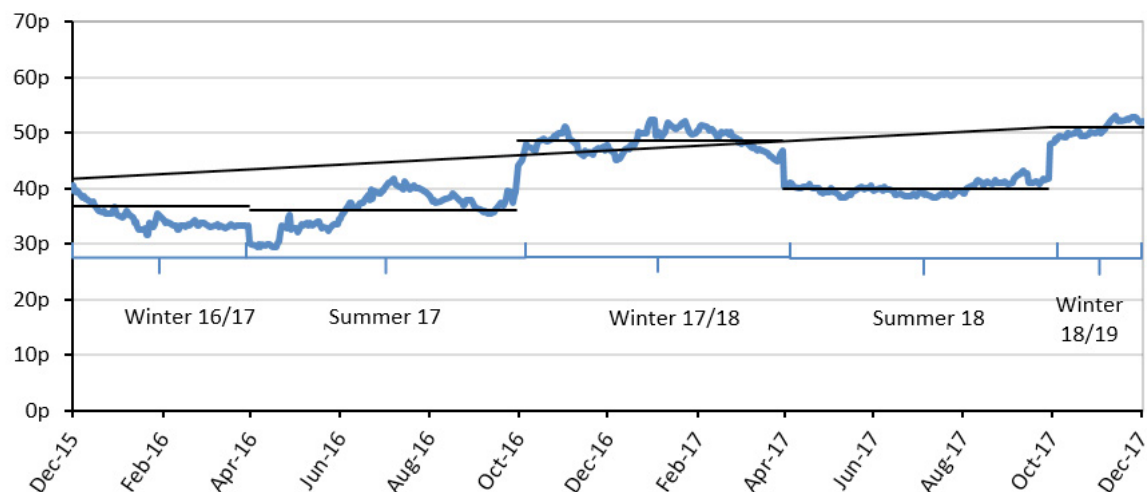
#### ICE settlement price, p/thm



Source: ICE (Intercontinental Exchange)

### Natural gas season+2

#### ICE settlement price, p/thm



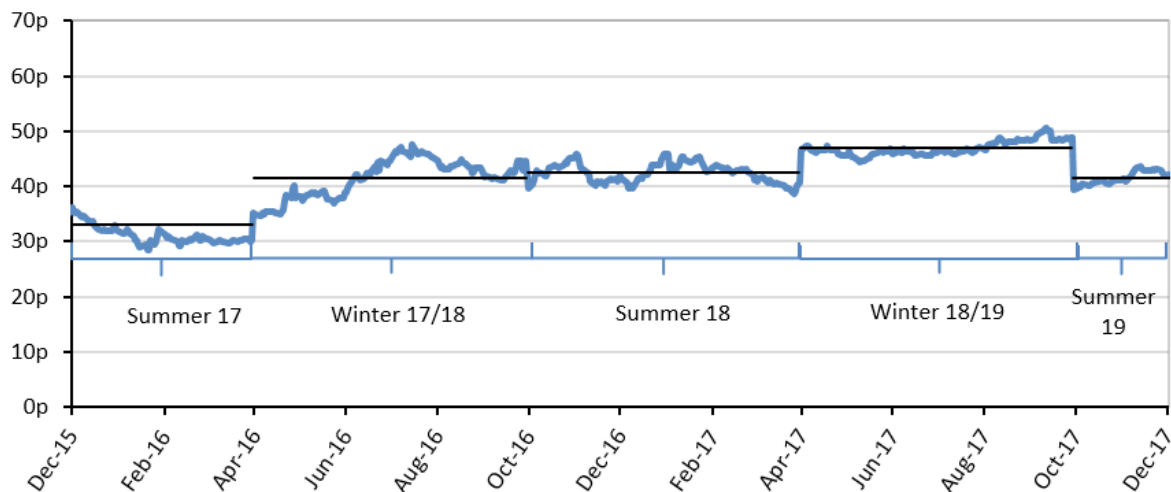
Source: ICE (Intercontinental Exchange)

## Natural gas prices to deliver to the GB grid p/thm

These graphs show the daily price of traded gas contracts to deliver to the GB gas grid at National Balancing Point.

### Natural gas season+3

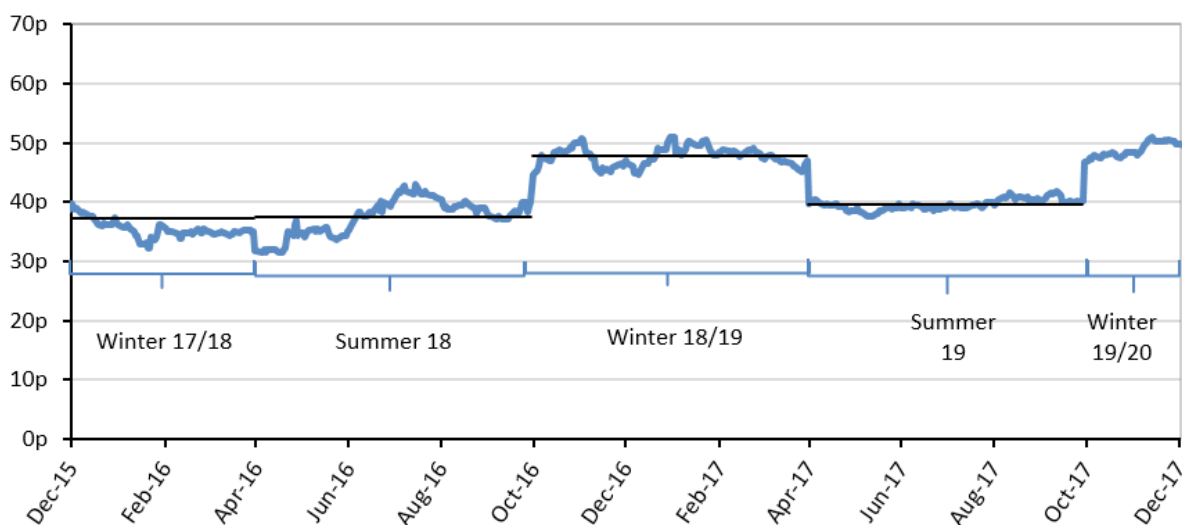
#### ICE settlement price, p/thm



Source: ICE (Intercontinental Exchange)

### Natural gas season+4

#### ICE settlement price, p/thm



Source: ICE (Intercontinental Exchange)