

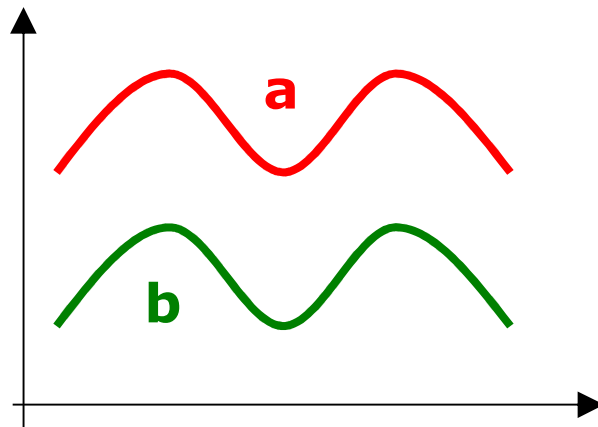
Introduction

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- ⇒ **This PowerPoint presentation presents issues concerning pricing of gas in Continental Europe.**
- ⇒ **The PowerPoint presentation is animated**
 - ✓ **It's recommended to run the animation when viewing the presentation.**
- ⇒ **On most computers, you can start the animation by pressing F5.**
 - ✓ **Now the presentation moves one step forward, when you press Page Down. It moves one step backward, when you press Page Up.**

Correlation coefficient

- ⇒ For two sets of data, the correlation coefficient measures the degree, to which the two data sets move in parallel.
- ✓ A correlation coefficient of 1 means the two data sets move in lockstep.
 - ✓ A correlation coefficient of 0 means no tendency at all for the two data sets to move in parallel.
 - ✓ A correlation coefficient of 0.5 indicates a very weak tendency to move in parallel.



In this example is
Correlation(a,b) = 1
 because a and b move
 in lockstep

Gas prices

- ⇒ **Historically, gas has often been traded by means of long-term contracts**
 - ✓ **Where the price of gas was linked to the price of oil.**
- ⇒ **Long-term contracts and oil-linked pricing have a long history**
 - ✓ **When gas first began to be used a lot in the 1960s it was a substitute for home heating oil.**
 - ✓ **Hence, it made sense to anchor the gas price to the oil price.**
 - ✓ **Long-term contracts became the industry norm, because big exploration, extraction and infrastructure investments required lots of capital.**
- ⇒ **However, today oil is generally no substitute for gas.**
- ⇒ **Increasingly, gas is spot traded.**
- ⇒ **The severing of the linking makes sense, as the following slides illustrate**
 - ✓ **As the correlation between gas and oil prices is decreasing.**

Gas and oil prices – 1

- ⇒ **If you still want to tie your gas price to the oil price:**
 - ✓ **There is a bewildering array of oil indices, which can be used for the linking.**
 - ✓ **And in order to make it even more complex:**
 - **There may be a time delay, so your gas price this month is linked to an oil price from a previous month.**
- ⇒ **In order to cut a long history short, for this presentation, the oil price index used is the monthly prices of the index *Europe Brent Spot Price FOB*.**
- ⇒ **No time delay is considered**
 - ✓ **Currency issues are not considered either.**

Gas and oil prices – 2

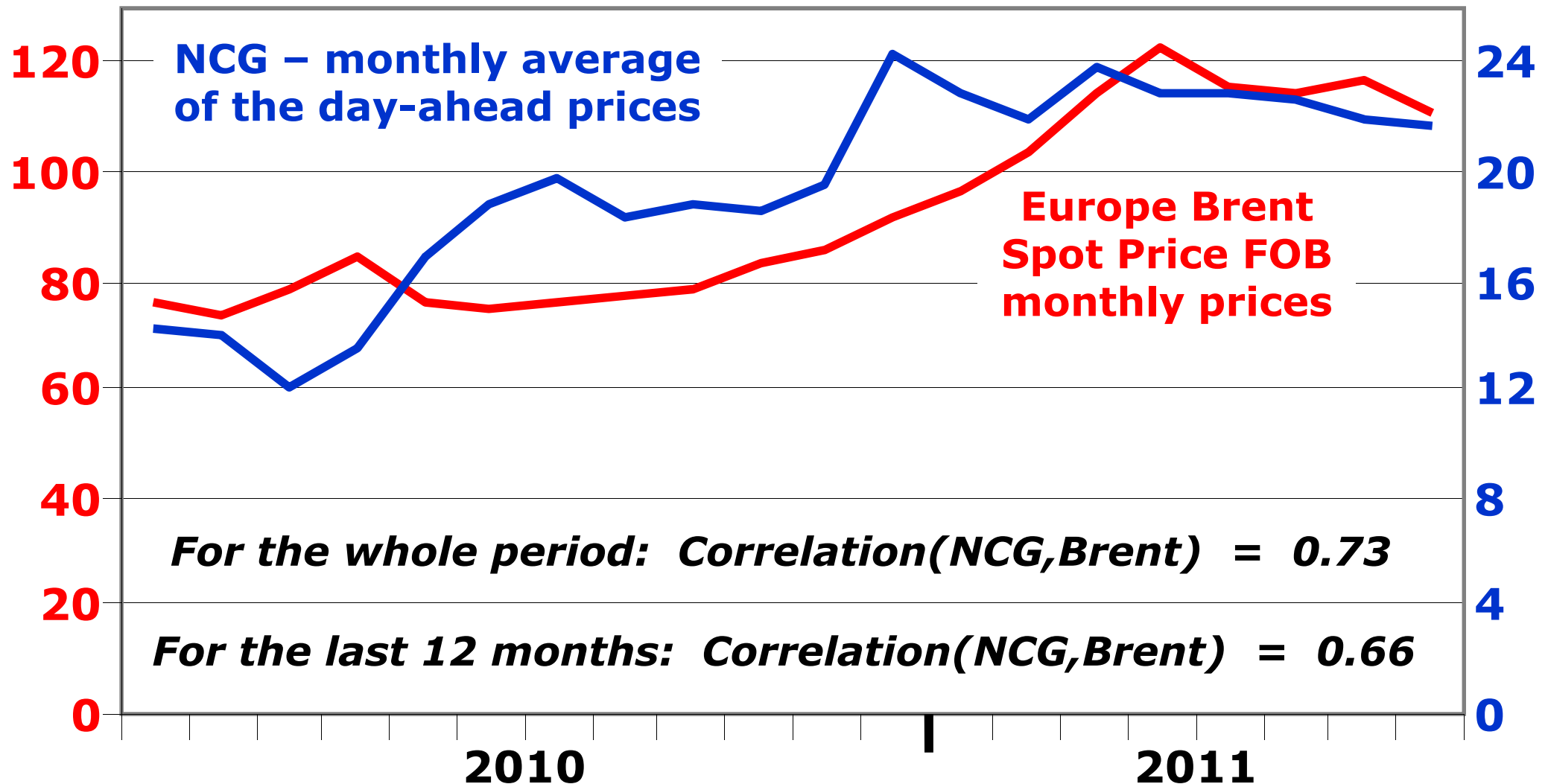
- ⇒ **Just in order to demonstrate the weaknesses of the archaic pricing structure:**
- ✓ **In this presentation, for the last year at the Danish gas market, it's demonstrated, you would have had a better hedge by linking your price to the price of Colombian Mild Arabicas coffee**
 - **Compared with linking to the oil price.**

NCG gas prices and Brent oil spot prices

January 2010 – August 2011

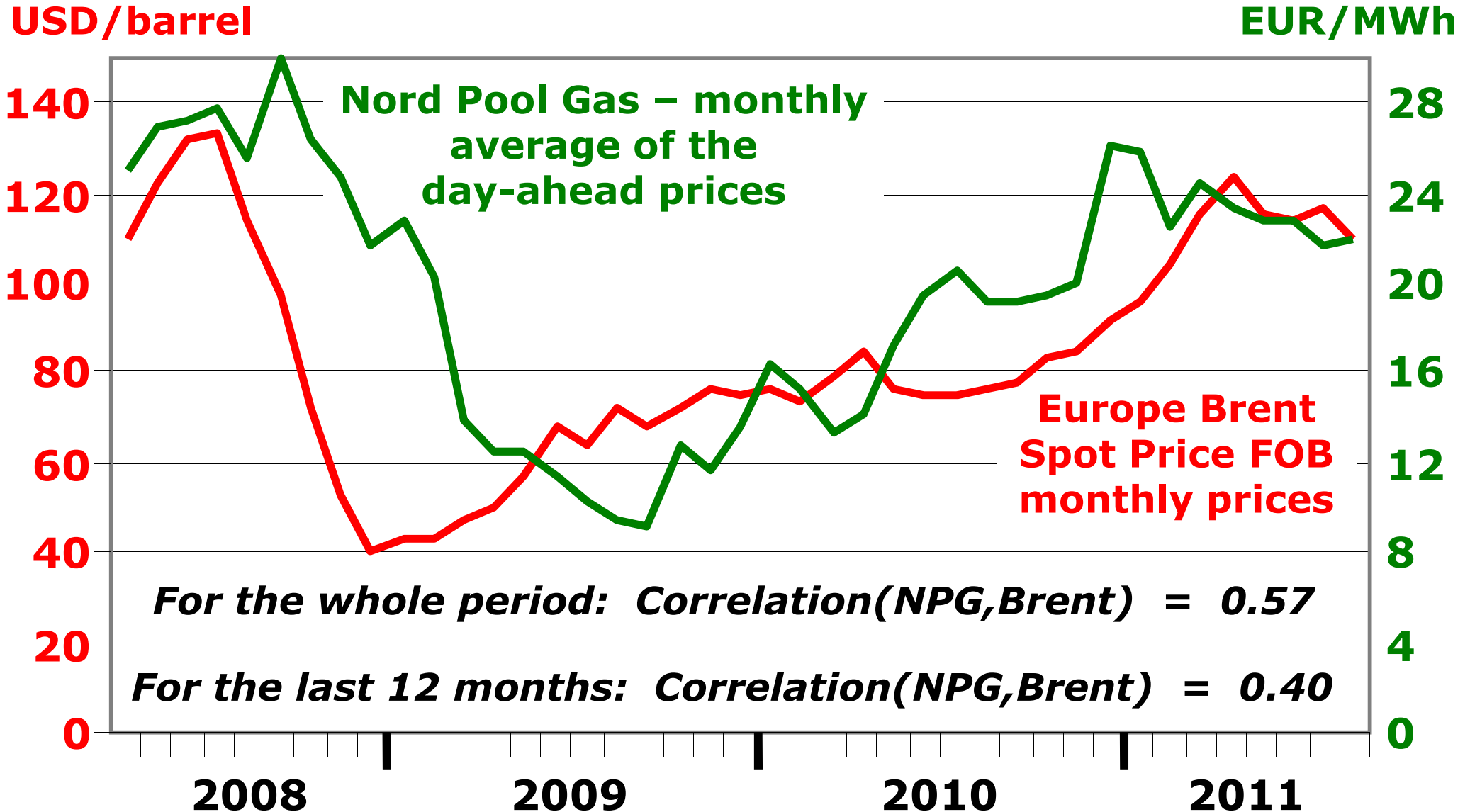
USD/barrel

EUR/MWh

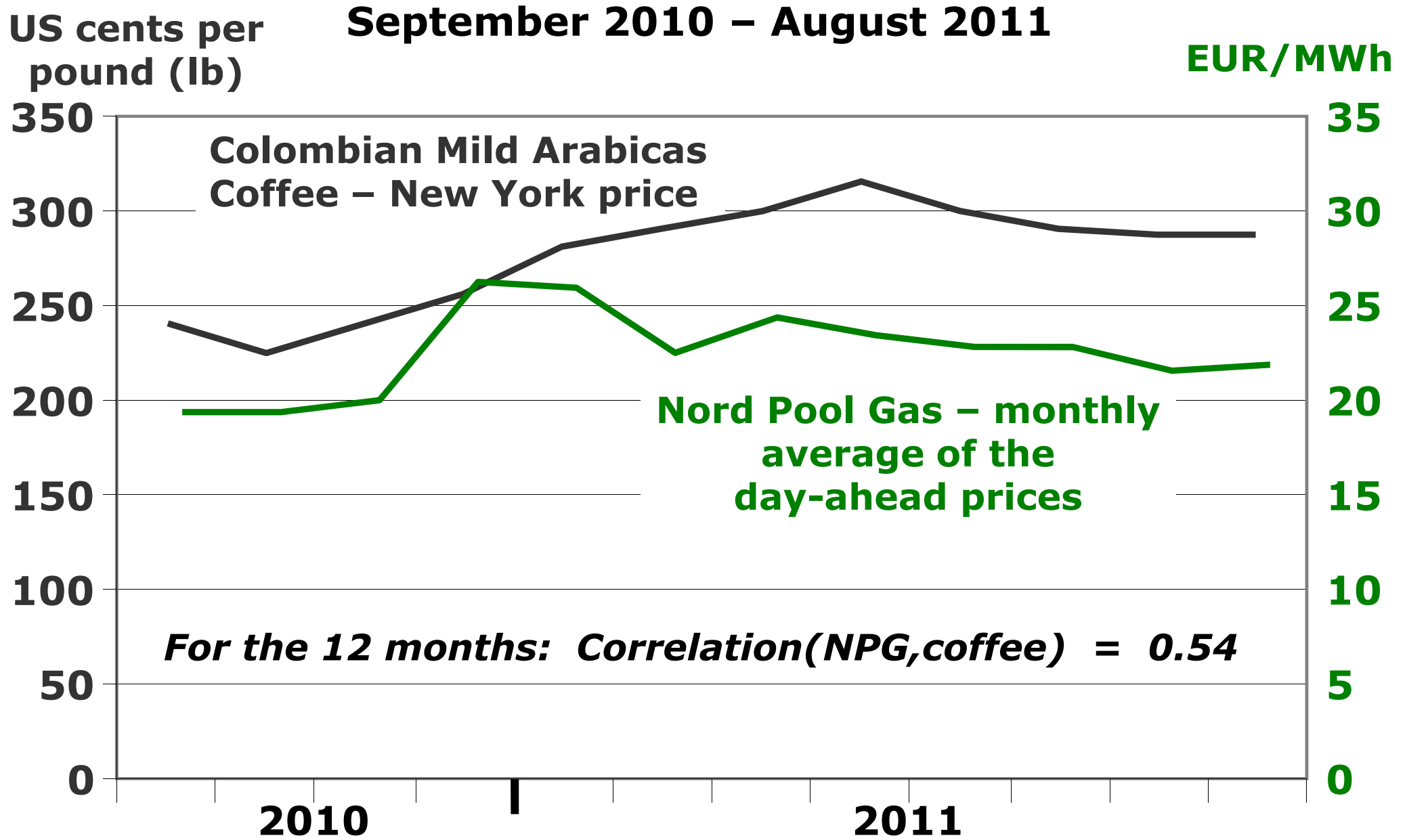


Nord Pool Gas prices and Brent oil spot prices

April 2008 – August 2011



Nord Pool Gas prices and coffee prices



Thank you for your attention!

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