

# WEBINAR

## *“Procurement’s role in navigating the Himalayan Energy Markets”*

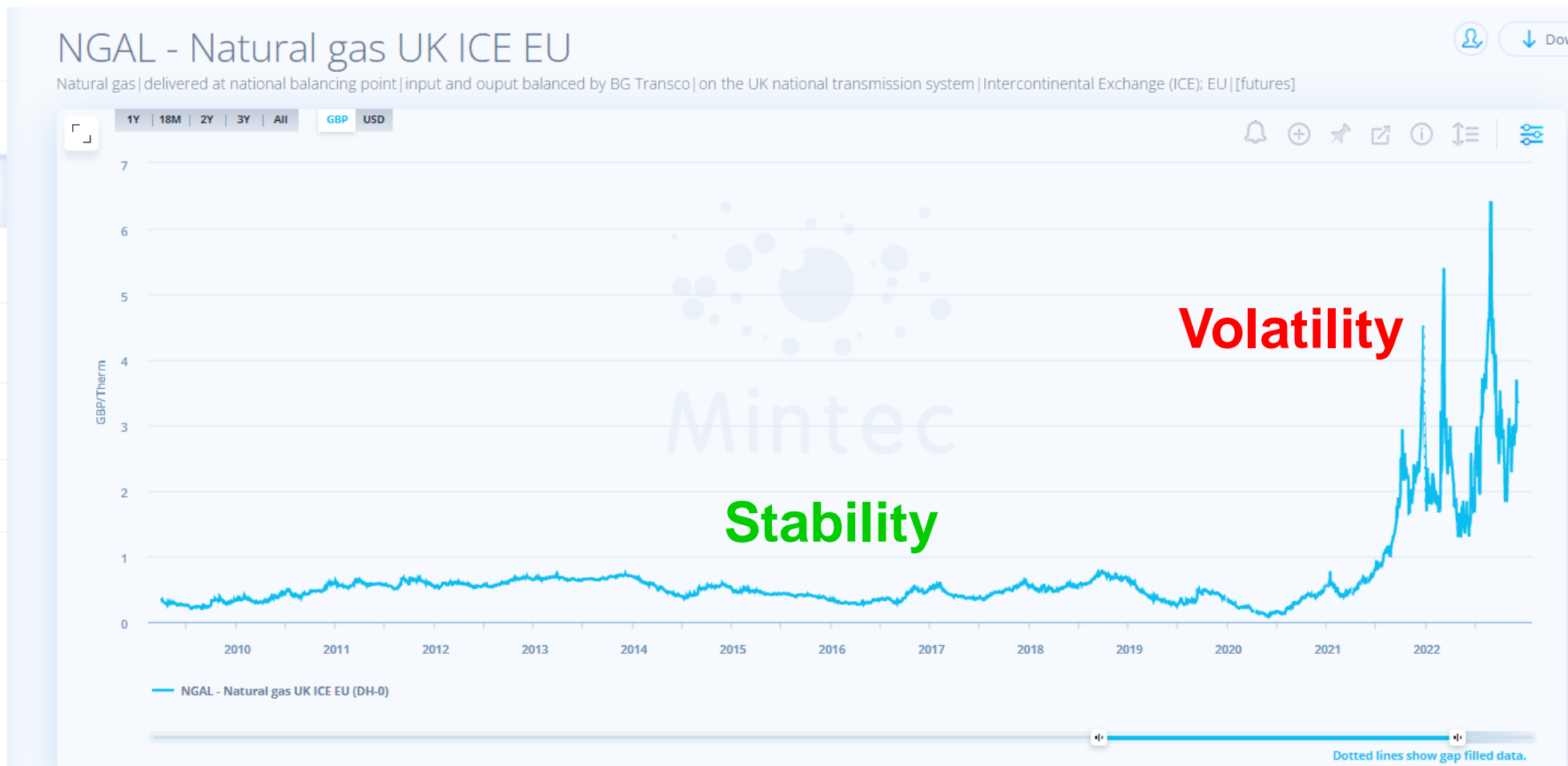
with Simon Frost

7<sup>th</sup> Dec 2022, 10am



**PROCUREMENT**  
**HEADS**

# The energy markets have fundamentally changed:



# FROST

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## PROCUREMENT ADVENTURER®

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MARS WRIGLEY

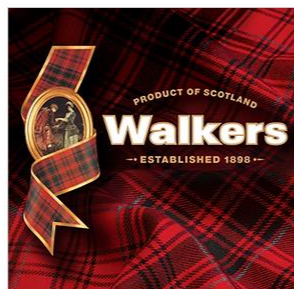


Huel®

GAIL's



HOTEL  
Chocolat.



fröosh  
fruit: bottled



1. The impact of energy on your business
2. De-mystifying energy - a simple calculation
3. Understanding the energy markets
4. How to navigate energy with your suppliers
5. Buying energy for your own business

**We'll weave in 2 mini case studies**



The value we're aiming to generate during this session is:

- Minimise Energy Inflation
- Much better forecasting
- Buyer confidence – better armed to tackle energy
- Less stressful

- **Disclaimer**
- **We don't need to be out and out energy experts**
- **Welcome your insights, ideas and thoughts**



# 1 - The impact on your business

The impact of energy on your business is likely to be based on a number of factors such as:

**Nature of  
product  
or service**

**Split of gas  
vs electricity**

**How well the  
energy has been  
bought**

**Country of  
production**

**Approach of  
your suppliers**

**% energy is of  
total cost**

**Supply vs  
demand power**

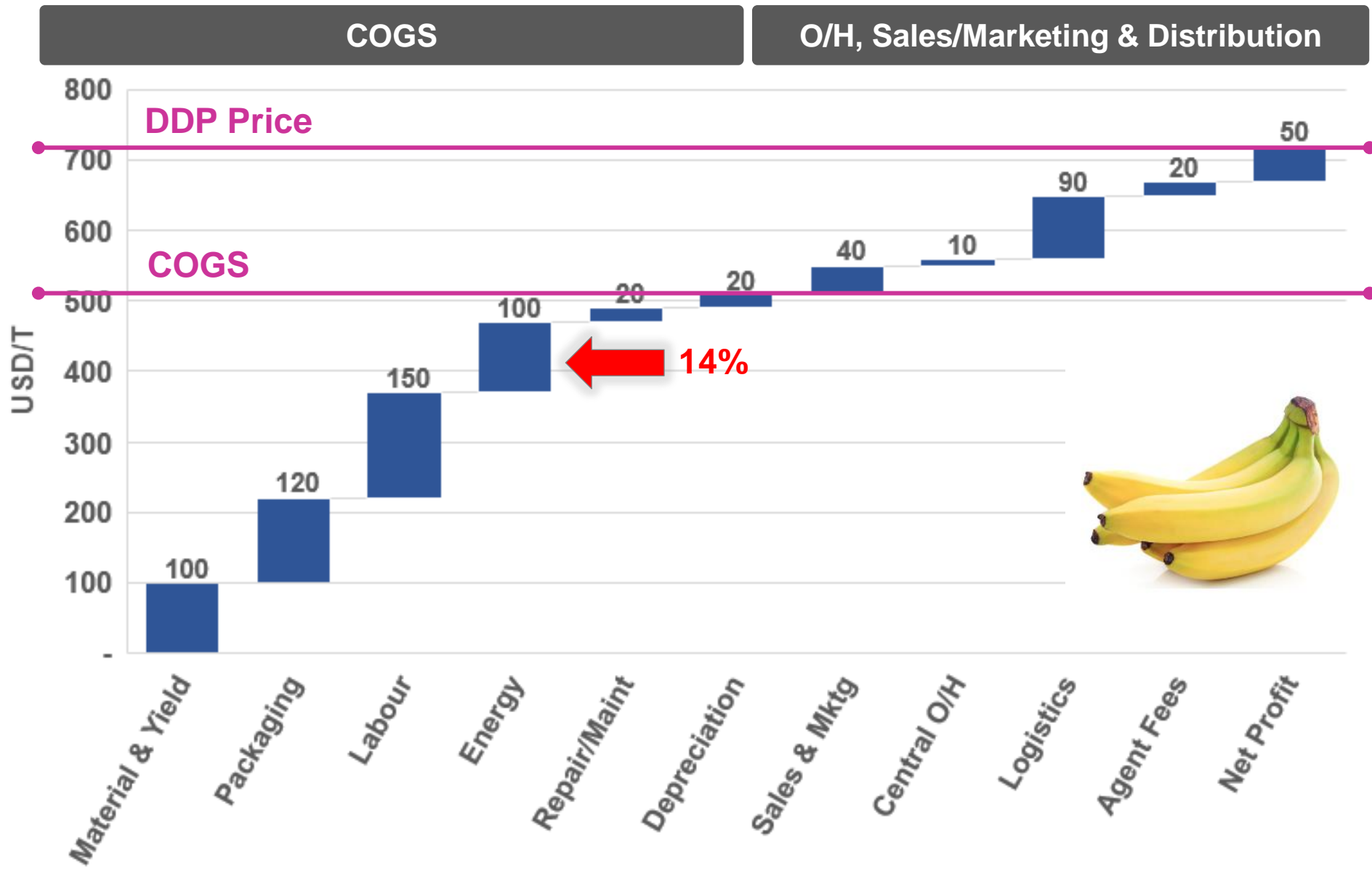
**Ethics of the  
other party**

**Amount of self  
generation**

The impact will be very different for different businesses:



Understand the impact energy has on the total cost:





GBP  
600/T



14%

GBP  
2,000/T



8%

GBP  
7,000/T



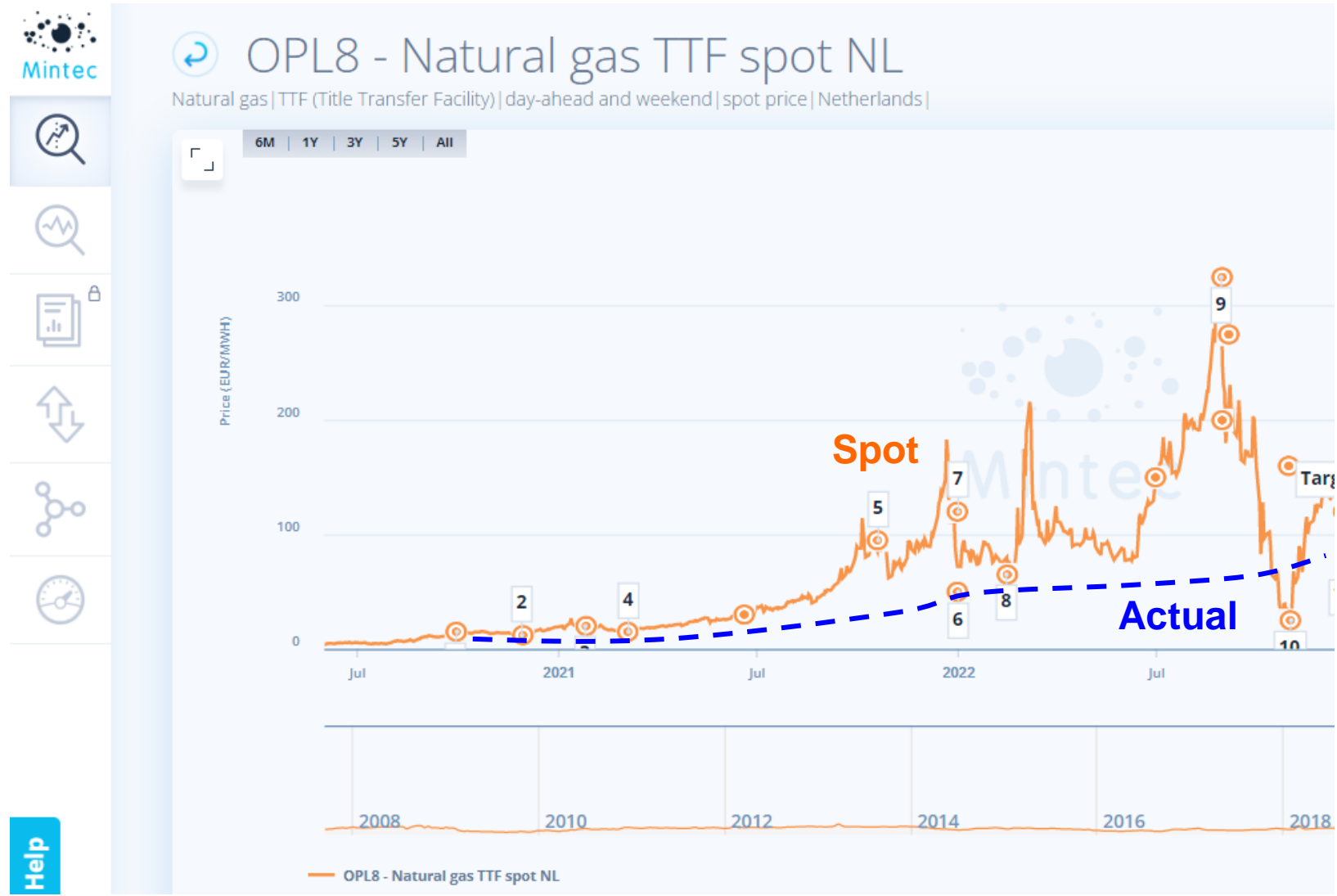
3%

GBP  
30,000/T



0.5%

Companies might well have bought well below the market by hedging and being opportunistic in the day/month ahead markets:

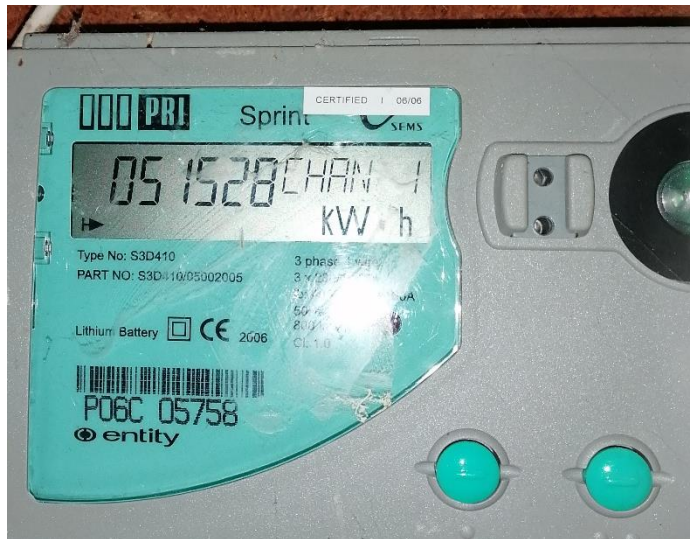


## 2 - The energy calculation

**If at all possible don't estimate  
using a percentage of the total  
price!**



On the one hand the energy markets are complex  
...on the other, thinking about it from a home perspective helps



**Supply address**  
THE MILL HOUSE  
WHERWELL  
ANDOVER  
HAMPSHIRE  
SP117JH

**Meter Serial Number** S06R94268

**MPAN** 2000007096150

S	02	805	104
20	0000	7096	150

### Electricity in detail 21st Mar - 20th Apr 2022

#### Detailed charges

Night energy use	1132.884 kWh at 12.44p	£140.93
Day energy use	671.201 kWh at 19.33p	£129.74
Standing charge	31 days at 22.99p a day	£7.13
<b>Cost of electricity</b>		<b>£277.80</b>

#### Night meter readings

Opening read on 21st March	Estimated 90864.716
18th April	You gave 91923.000
Closing read as of 20th April	Estimated 91997.600

**Total units** 1132.884 kWh

#### Day meter readings

Opening read on 21st March	Estimated 22455.840
18th April	You gave 23091.000
Closing read as of 20th April	Estimated 23127.041

**Total units** 671.201 kWh

#### Your electricity tariff

<b>Plan name</b>	OVO Member Special - Economy 7 22 July 2021
<b>Payment method</b>	Direct Debit
<b>Day unit rate</b>	19.33p per kWh
<b>Night unit rate</b>	12.44p per kWh
<b>Standing charge</b>	22.99p a day
<b>Contract start date</b>	22nd August 2021
<b>Contract end date</b>	21st August 2022
<b>Exit fee</b>	£30.00 if you end your contract

A kilowatt hour (kWh) is a measure of how much energy you're using. Find out more: [www.ovoenery.com/guides/energy-guides/what-is-a-kwh-kw-and-kwh-explained.html](https://www.ovoenery.com/guides/energy-guides/what-is-a-kwh-kw-and-kwh-explained.html)

The cost for energy is relatively simple:

$$\text{GBP/T} = \frac{[\text{kWh gas used}] \times [\text{Price per kWh}] + [\text{kWh electricity used}] \times [\text{Price per kWh}]}{\text{Output pa (tons)}}$$



- The energy calculation
- Finding energy usage & price
- Finding total production (tons)
- Comparing years

Let's now do the calculation:

$$\text{GBP/T} = \frac{[\text{kWh gas used}] \times [\text{Price per kWh}] + [\text{kWh electricity used}] \times [\text{Price per kWh}]}{\text{Output pa (tons)}}$$



Companies House and annual reports are a really good place to look:

# **KELLOGG COMPANY OF GREAT BRITAIN, LIMITED**

## **DIRECTORS' REPORT** *(continued)*

**FOR THE PERIOD ENDED 2 JANUARY 2021**

### **STREAMLINED ENERGY AND CARBON REPORTING DISCLOSURE (SECR)**

The Company is composed of two production plants that manufacture cereals. Their combined energy consumption and greenhouse gas (GHG) emissions for the 2020 financial year are:

Table 1: 2020 Energy Consumption and Carbon Emissions by Type

Emission Type	Energy [kWh]	GHG Emission [Tonne CO <sub>2</sub> E] (1)
Scope 1 – Fuel use from direct combustion of natural gas and fossil fuels and travel in company owned vehicles	113,702,178	24,930
Scope 2 – Electricity	95,534,254	13,197 (Location based) 0 (Market based) (2)
Scope 3 – Business travel - Personal cars where the company is responsible for the fuel; air / train travel originating and / or finishing in the UK	1,710	0.42
All scopes – Including heat generation from CHP (3)	282,227,197	38,128 (Location based) 24,931 (Market based)
Production [Tonne]		193,950
Total Intensity Ratio	14,55 kWh/Ton product	197 kg CO <sub>2</sub> E/Tonne product (Location based) 129 kg CO <sub>2</sub> E/Tonne product (Market based)

1MWh = 1,000kWh

We can slot in the consumption and the finished goods production:

$$\text{GBP/T} = \frac{\begin{array}{l} \checkmark [114,000,000 \text{ kWh gas}] \times [\text{Price per kWh}] \\ + \\ \checkmark [96,000,000 \text{ kWh electricity}] \times [\text{Price per kWh}] \end{array}}{\checkmark 194,000 \text{T}}$$

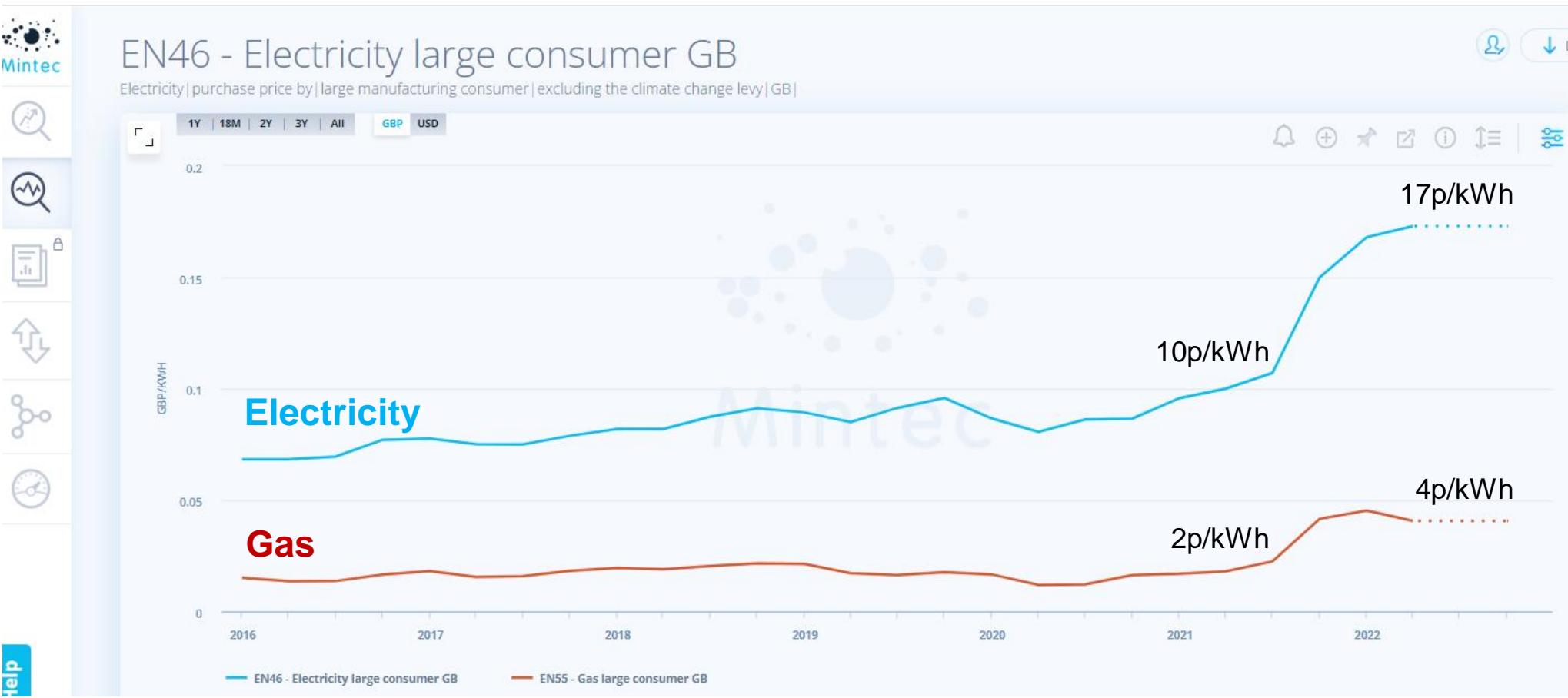
*Where do we get the price from?*

## Options:

- The other party is good enough to tell you
- You have to search for it
- They don't tell you. You have to estimate it



Use a recognised data source:

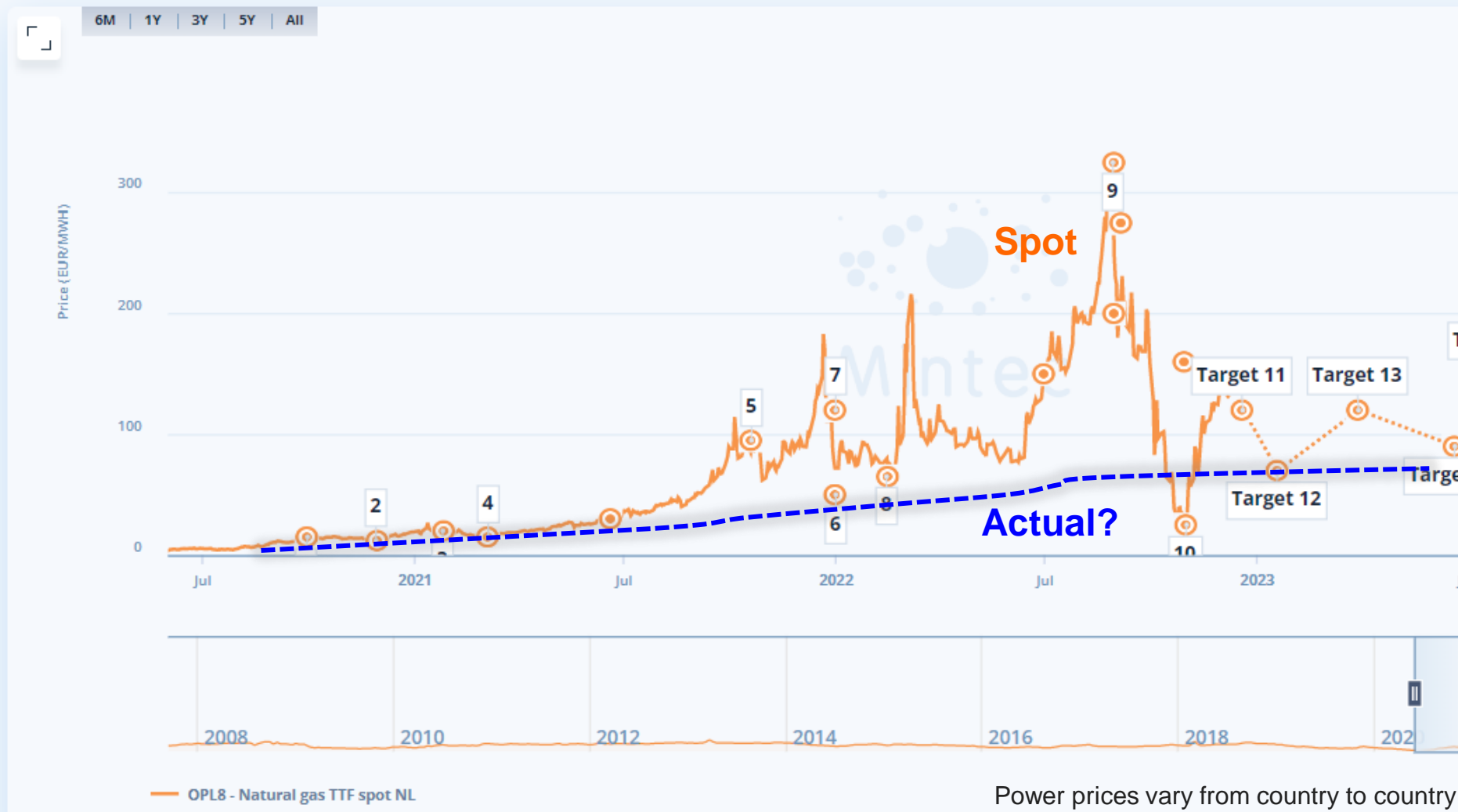


You might have to make some sort of an estimate:



# OPL8 - Natural gas TTF spot NL

Natural gas | TTF (Title Transfer Facility) | day-ahead and weekend | spot price | Netherlands |



Power prices vary from country to country

It's very easy to get lost in the numbers of gas and electricity. Here's a little crib sheet:

Price Status	Situation Timing	Electricity (per/kWh)			Gas (per Therm)			Gas (per kWh)		
>> Currency		GBP pence	EUR cents	USD* Cents	GBP pence	EUR cents	USD* Cents	GBP pence	EUR cents	USD* Cents
<b>Super Expensive</b>	Sept 22 NS1 Shut	30 - 87	35 - 100	39 - 113	500 - 790	435 - 685	650 - 1030	17 - 27	20 - 31	22 - 35
<b>Very Expensive</b>	Feb 22 Russian Invasion**	17 - 23	20 - 26	22 - 30	205 - 235	235 - 270	265 - 525	9 - 18	10 - 20	12 - 23
<b>Increasingly Expensive</b>	Sept – Dec 21	14 - 16	16 - 18	18 - 21	115 - 175	130 - 200	150 - 230	4 - 8	4.5 - 9	5 - 10
<b>Cheaper (Datum)</b>	2019-2020 Post Brexit	12	14	16	75 - 115	85 - 130	100 - 150	2.5 - 4	3 - 4.5	3 - 5
<b>Super Cheap</b>	2014-2018 Pre Brexit	9	10	12	45 - 75	50 - 85	60 - 100	1.5 - 2.5	1.7 - 3	2 - 3

\*Currency set at GBP for all time period at GBP to USD 1.3, GBP to EUR 1.15. In reality lots of currency fluctuation

1 Therm of gas – 29.3 kWh

\*\*Russian invasion – short peak

We can now slot in the unit price:

$$\begin{aligned} & \checkmark [114,000,000 \text{ kWh gas}] \times [6\text{p per kWh}] \\ & \quad + \\ \text{GBP/T} = & \checkmark [96,000,000 \text{ kWh electricity}] \times [17\text{p per kWh}] \\ & \quad \underline{\hspace{10em}} \\ & \checkmark 194,000\text{T} \end{aligned}$$

The calculation comes out as follows:

		2022	
	Usage	GBP per kWh	Spend pa (GBP)
Gas	114,000,000	0.06	6,840,000
Electricity	96,000,000	0.17	16,320,000
Total			23,160,000

Total tons pa 194,000

Cost (GBP/T) 119



Let's now compare 2022 vs 2023:

		2022		2023		On Cost 18,180,000
	Usage	GBP per kWh	Spend pa (GBP)	GBP per kWh	Spend pa (GBP)	
Gas	114,000,000	0.06	6,840,000	0.11	12,540,000	
Electricity	96,000,000	0.17	16,320,000	0.3	28,800,000	
Total			23,160,000		41,340,000	
Total tons pa		194,000		Total tons pa		94
Cost (GBP/T)		119		213		
Estimated price per ton to retailer		4,000		...assume no CPI		2%
% total price		3%		5%		

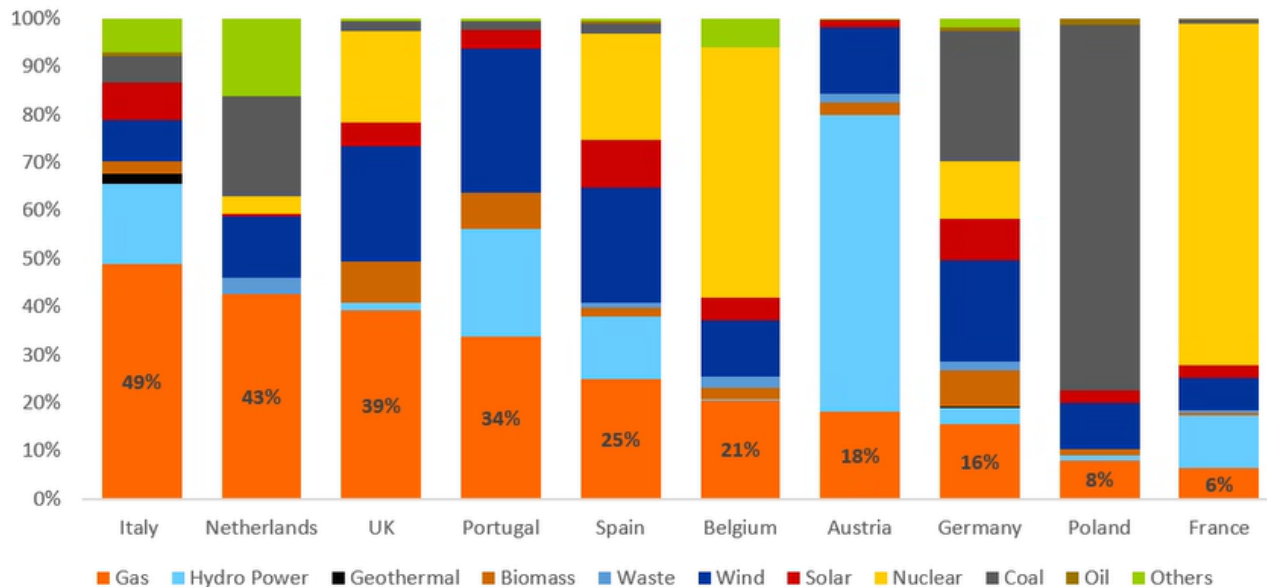
To contrast and compare other foods:



Energy intensity >>	High	Medium	Low
Year	GBP/T		
2020	95	75	20
2021	120	95	25
2022	150	120	35
2023	270	215	60

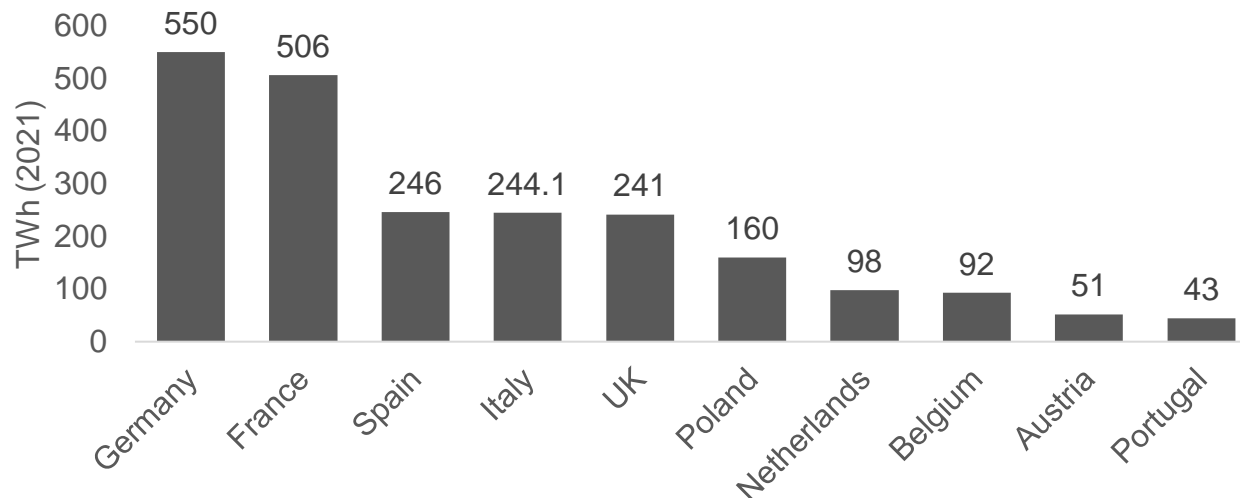
# 3 – Understanding the energy markets

### Power Grid Mix - Europe



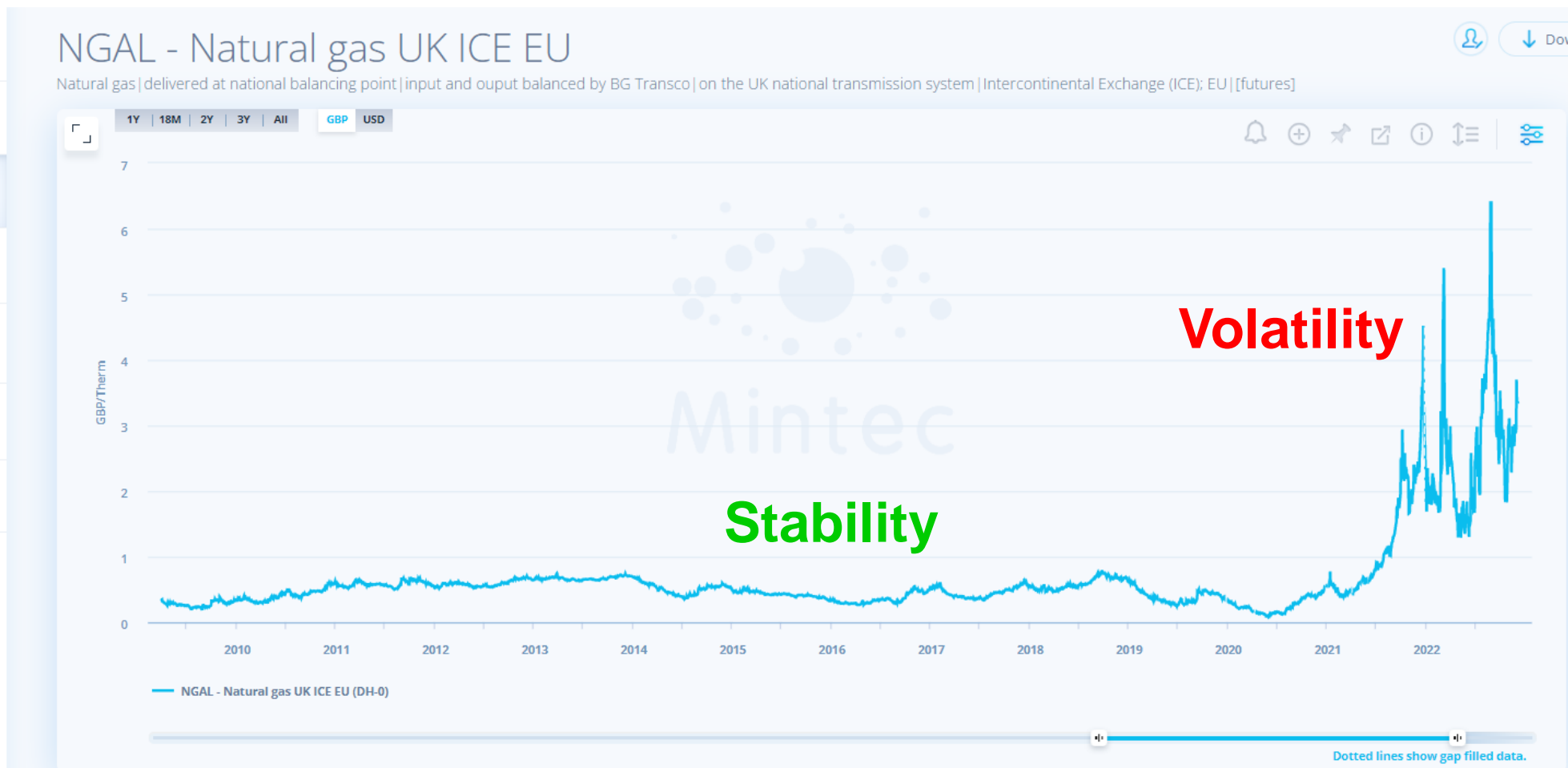
- Each Country has its own distinct mix of energy sources
- ...but inter-connected markets
- Renewables are growing
- Gas key back up for renewables

### Energy Usage - Europe



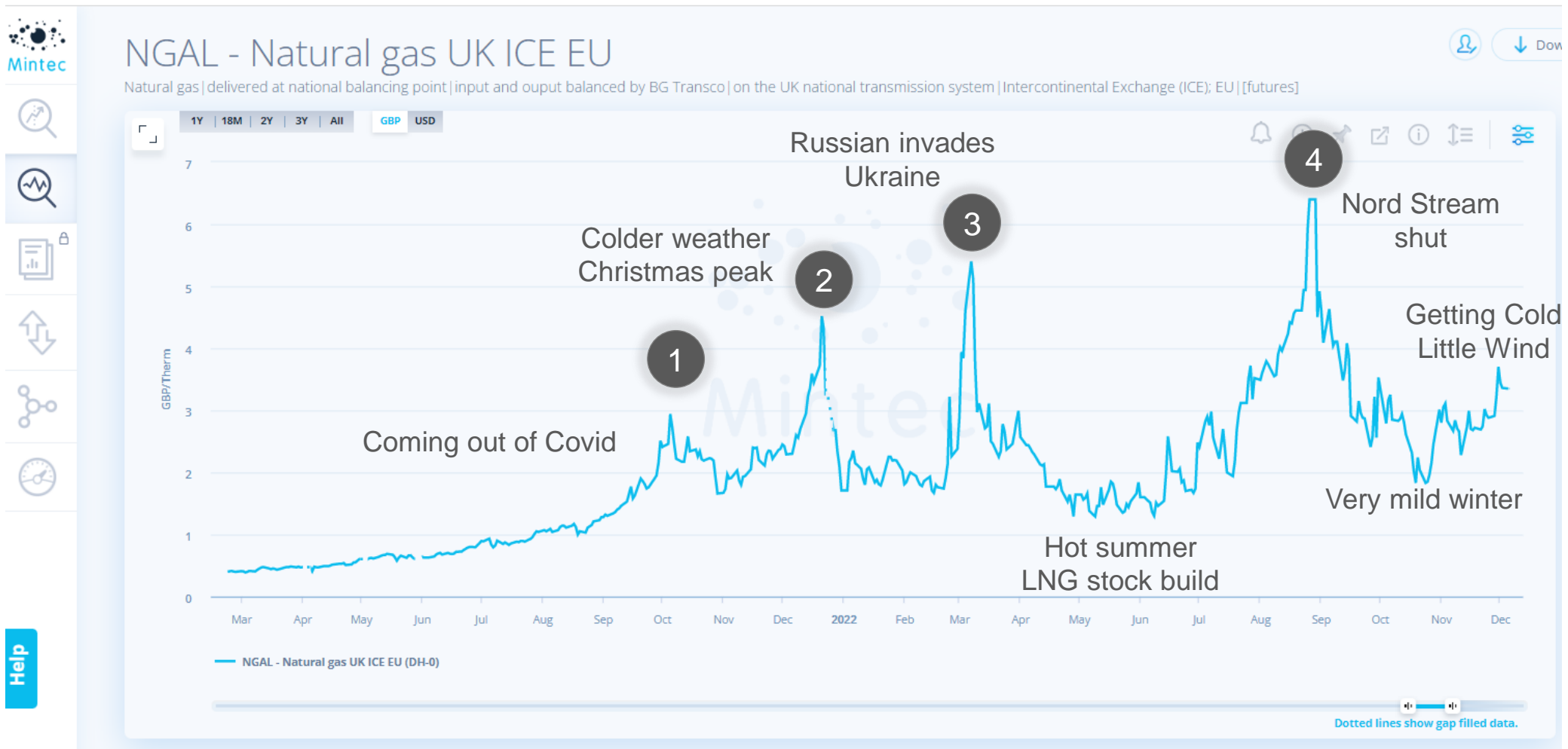
- Nuclear divisive & long lead time to install
- Weather impact on supply (wind, sun, water for cooling nuclear)
- Demand (eg mild winters)

Coming back to the graph we looked at earlier....



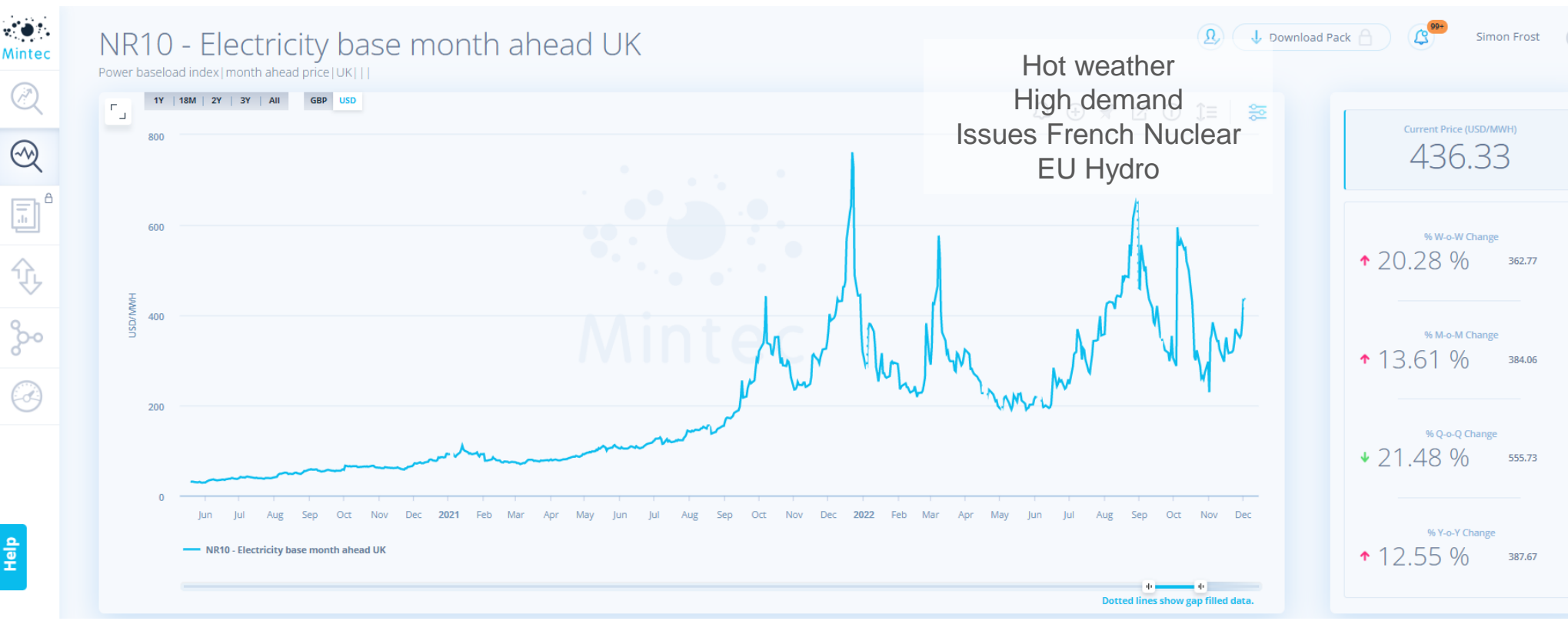


Key dynamics over the last 2 years:



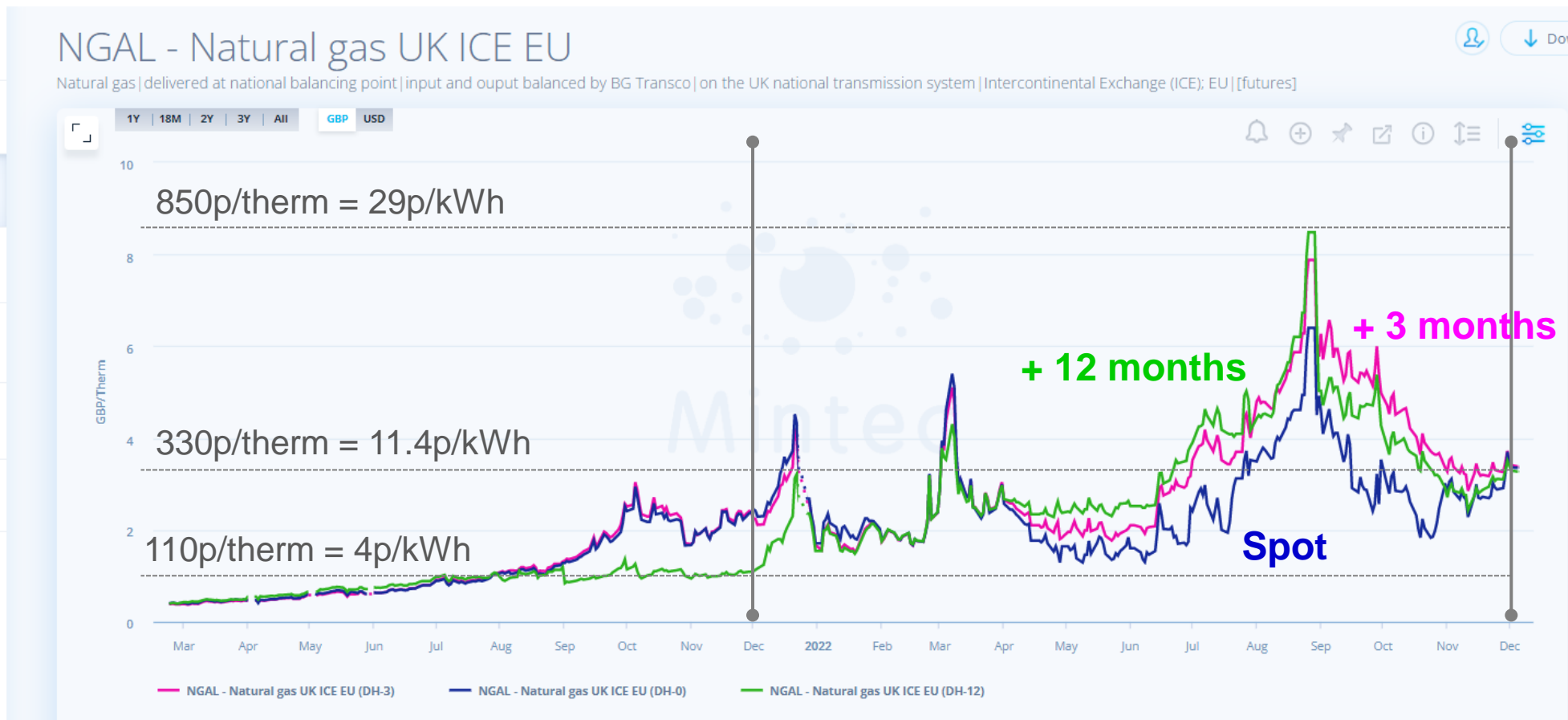
Power prices vary from country to country

And there’s a pretty strong correlation between gas and electricity with some of its own specific dynamics:

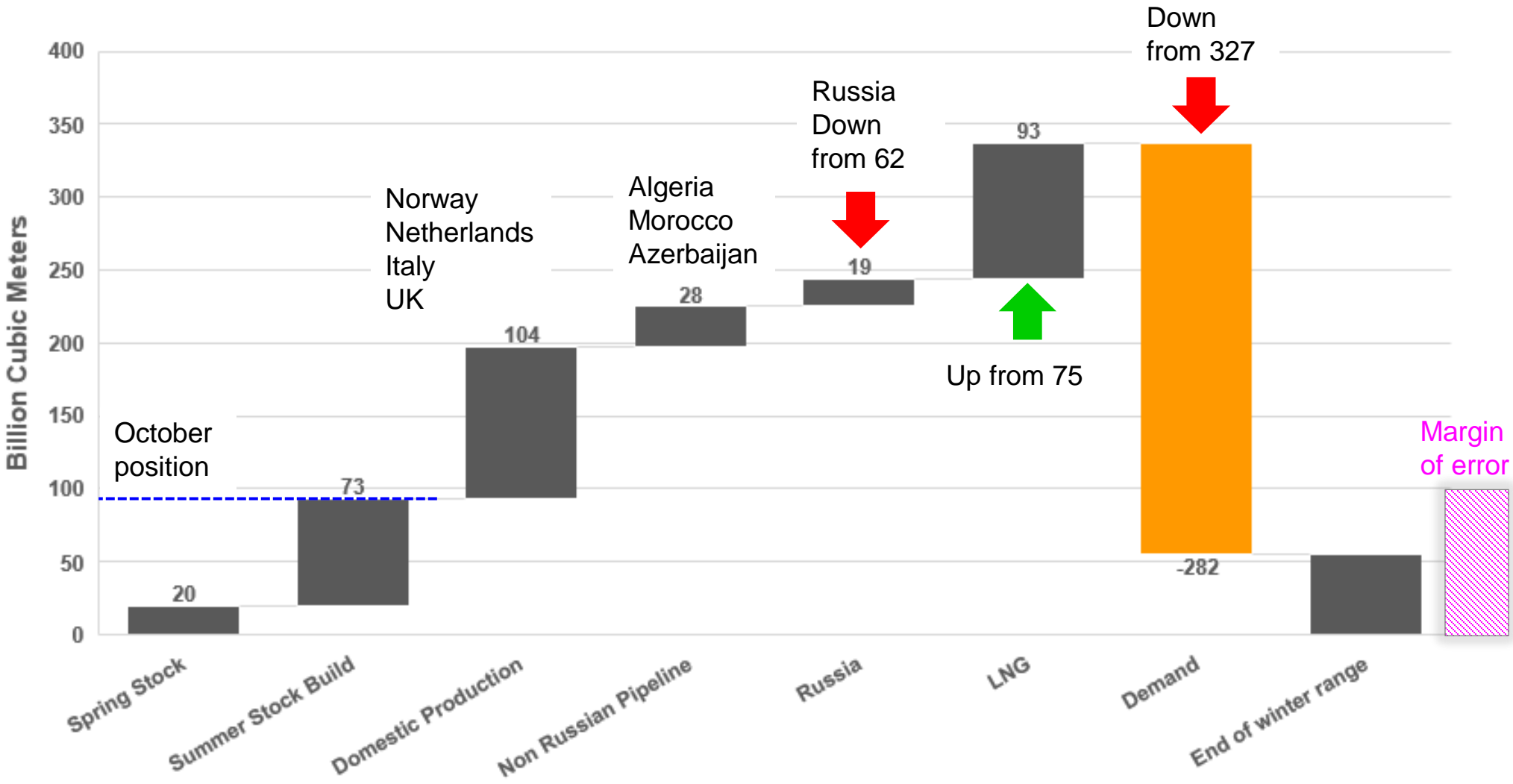


Power prices vary from country to country

The volatility of the last 12 months gives a sense of the future:

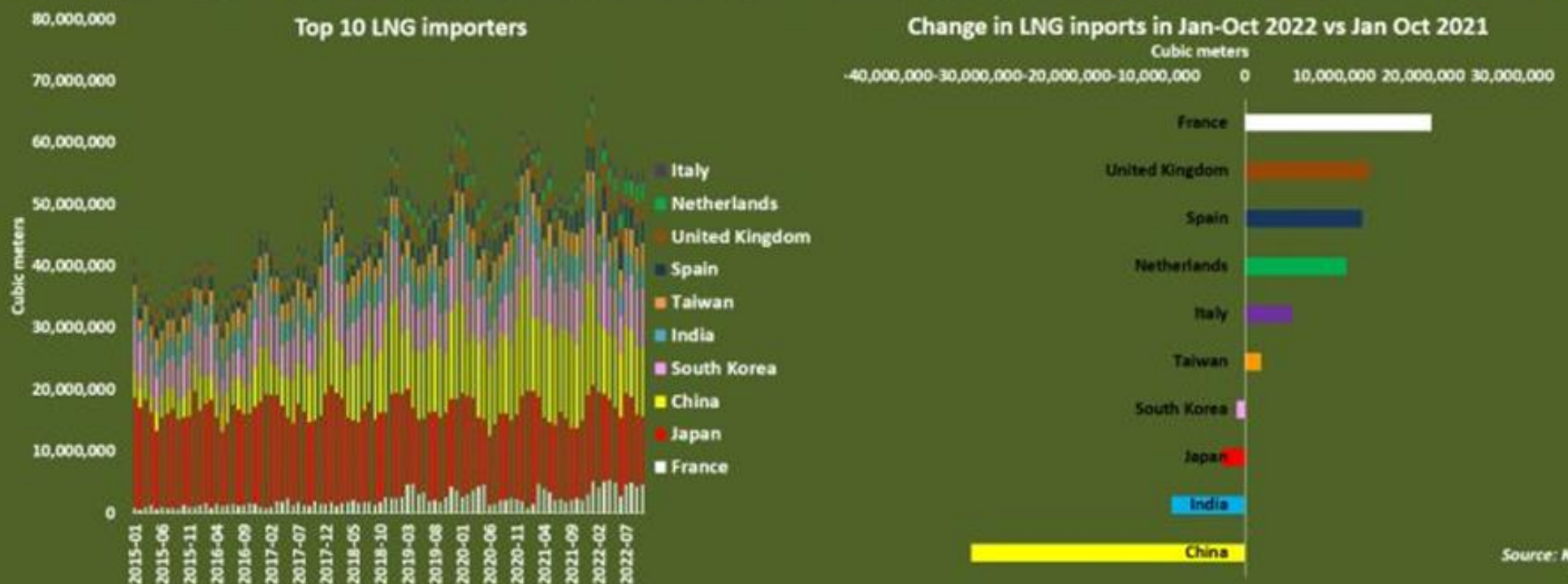


There are a number of major factors that could play out:



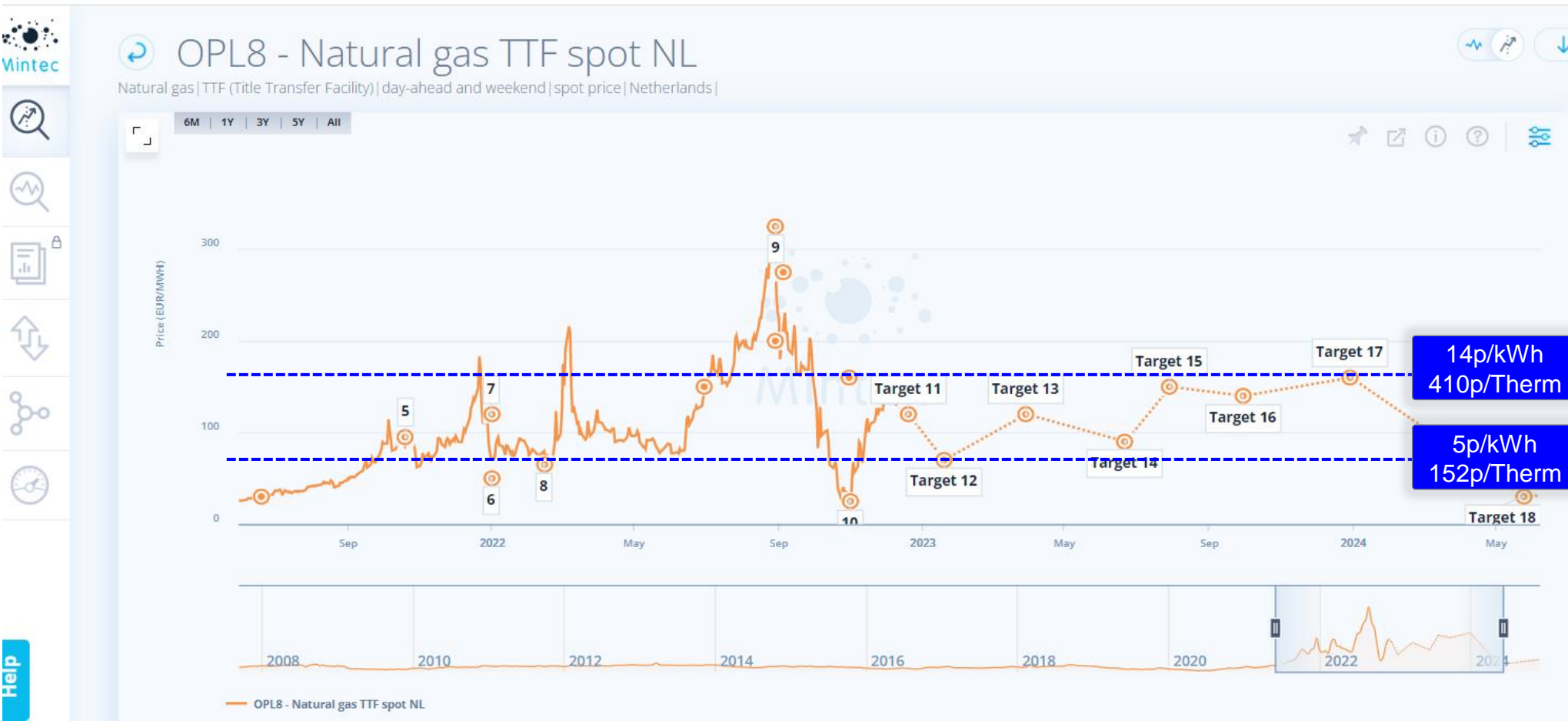
LNG is a global commodity. Europe's surging demand has been offset by weaker demand from China:

### France increased LNG imports in the first 10 months of 2022 by more than any other major buyer





There is a lot that could happen, but a forecast sentiment is as follows:

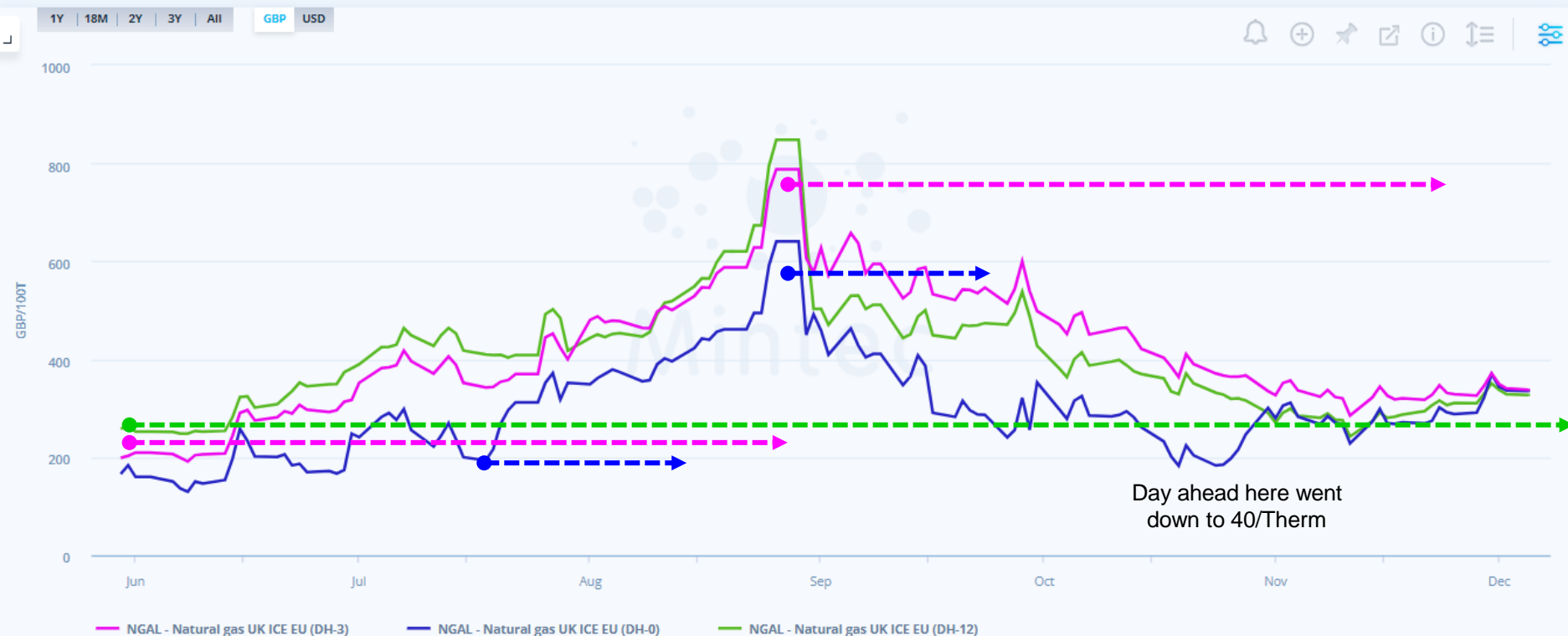


Companies buying energy are typically trying to strike the balance between longer term protection (eg 12 months out) and near term opportunistic buying (eg spot/day ahead, month ahead):

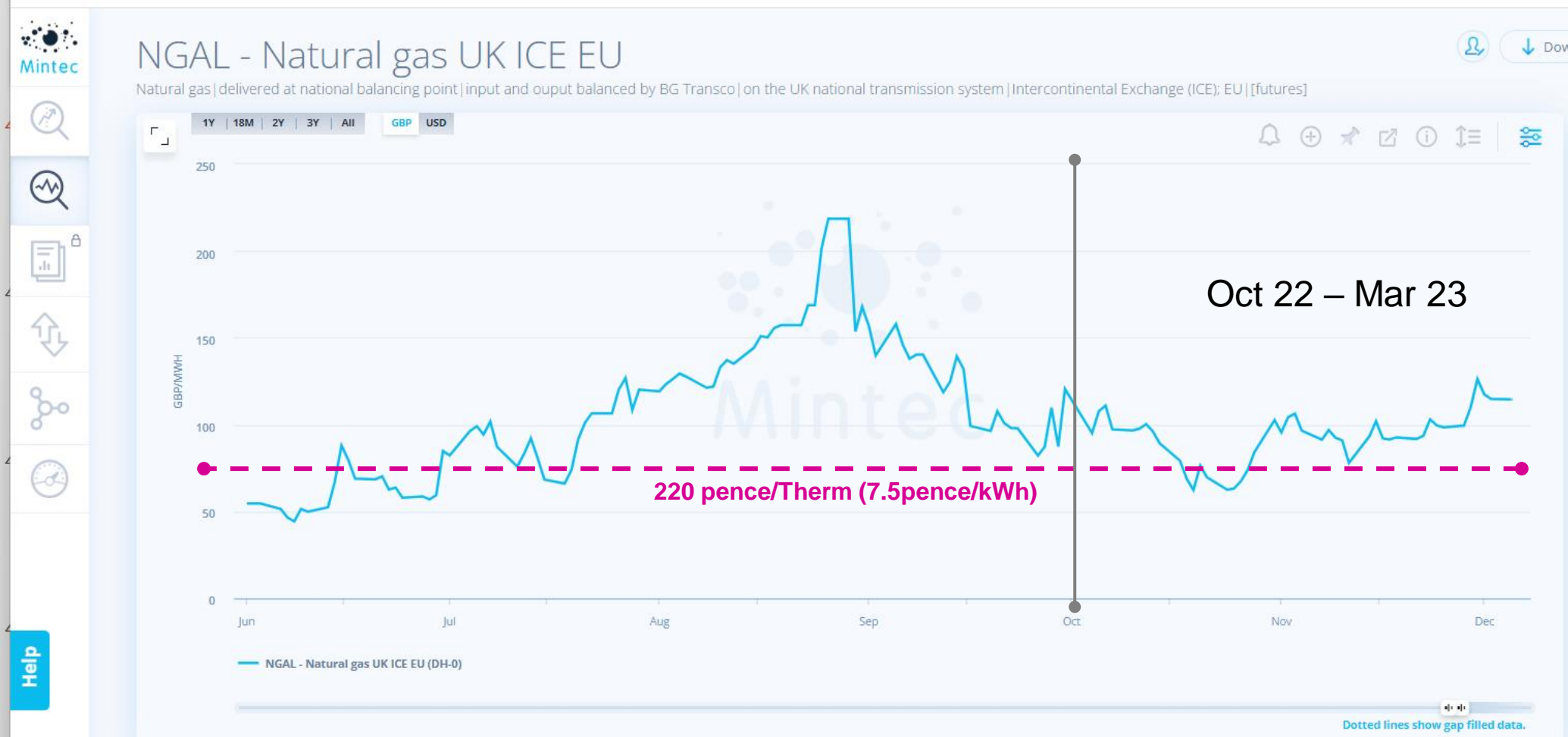


## NGAL - Natural gas UK ICE EU

Natural gas | delivered at national balancing point | input and output balanced by BG Transco | on the UK national transmission system | Intercontinental Exchange (ICE); EU | [futures]



There has been governmental support in some countries (eg UK):



UK Govt cap, commodity element only:  
Power [p/KWH]: Capped at 21.1pkWh to a max support of 34.5p, to give an effective ceiling price of 55.6; so if you fixed at 56.6 you'd pay 22.1p  
Gas [p/Th]: 220p up to max 267, effective ceiling 487; therefore is you fixed at 488, you'd pay 221

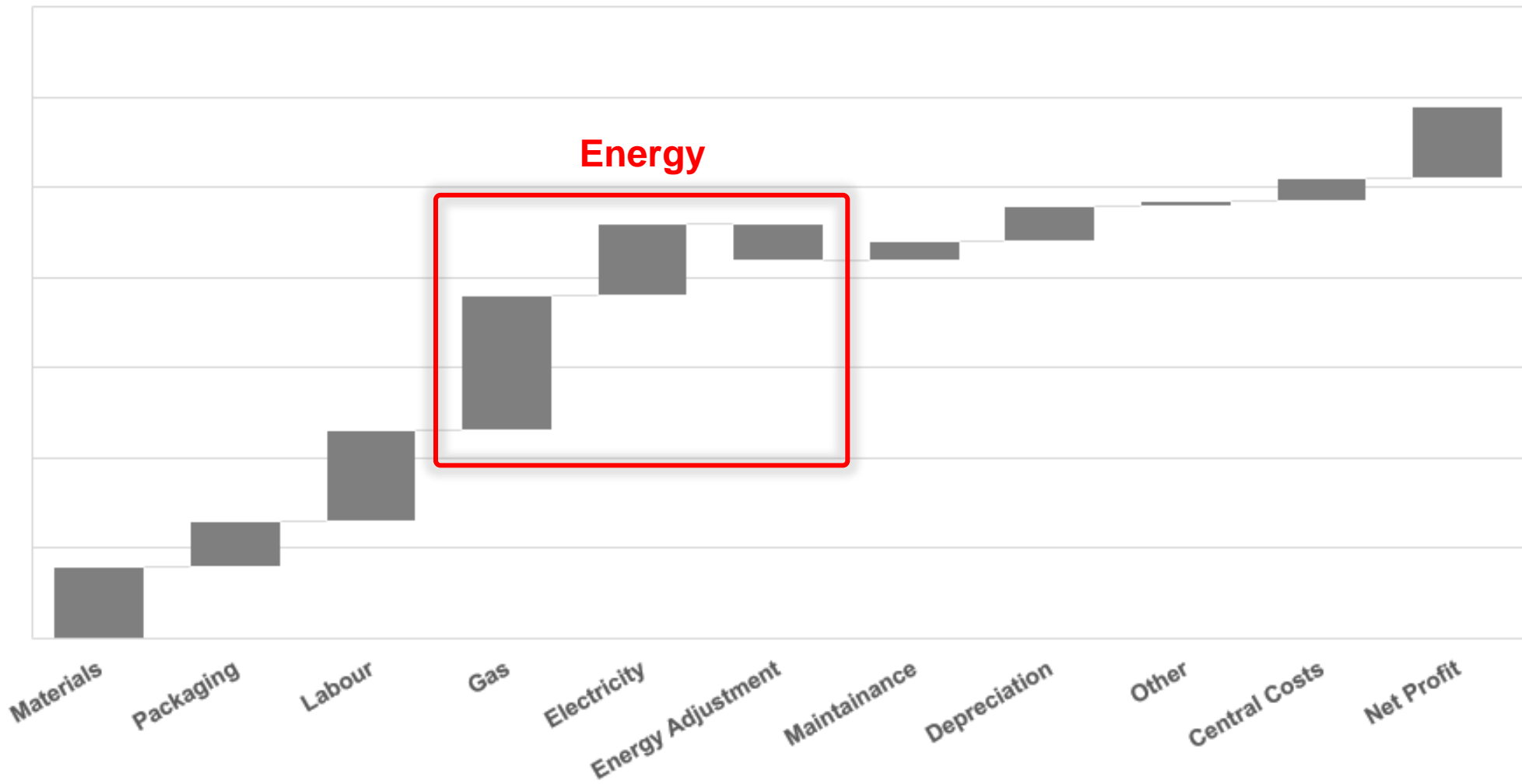
# 4 – How to navigate energy with your suppliers



- **Rules of engagement**
- **Understanding the supplier's situation**
- **Creating a viable mechanism**
- **Buying energy for your business**



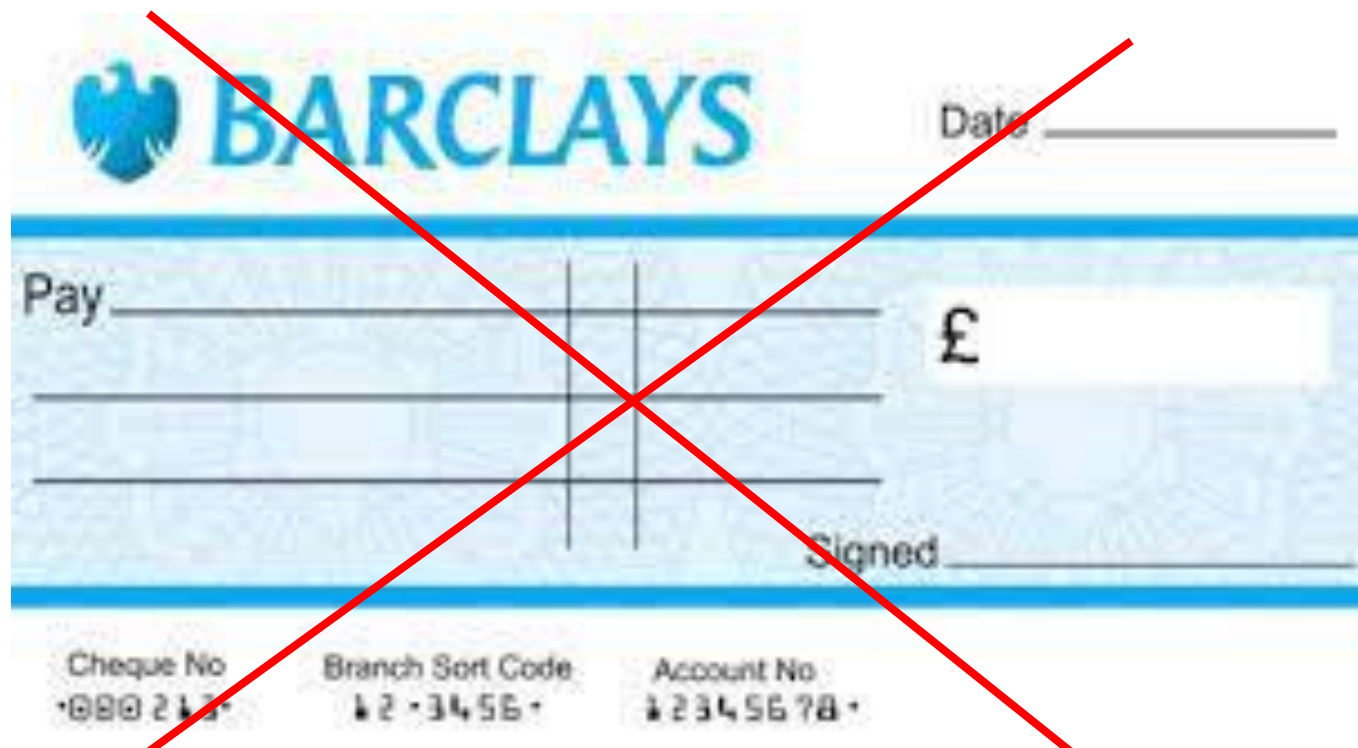
Here is an indicative glass cost model:





Some basic rules of engagement:

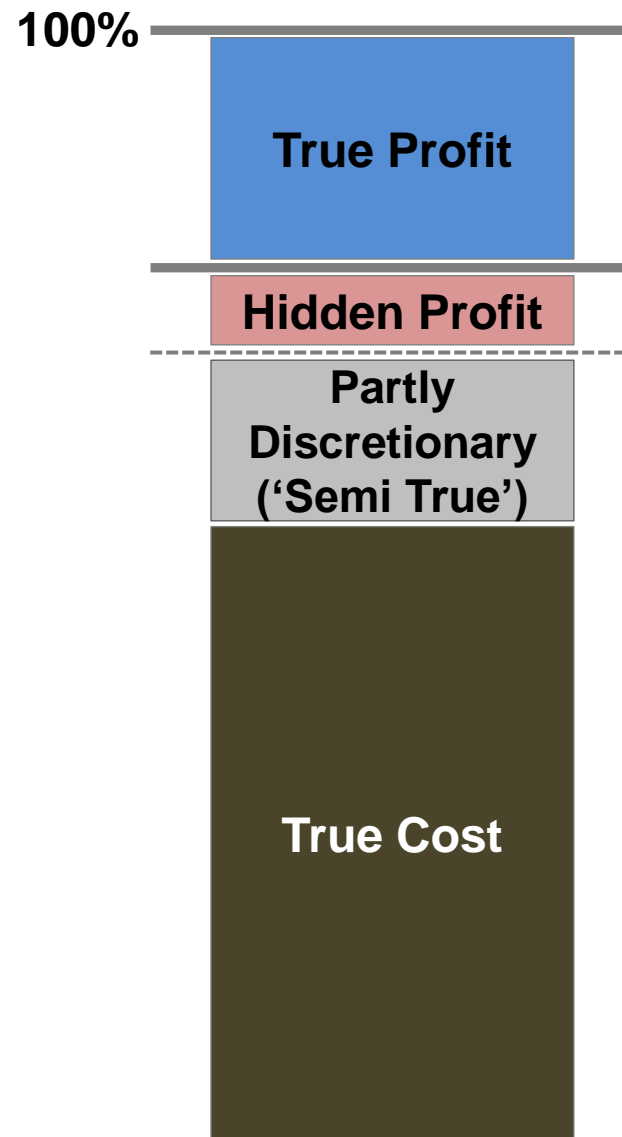
- No blank checks
- Acceptable degree of transparency & honesty
- Acceptable degree of competence
- Minimise consumption
- Collaboration



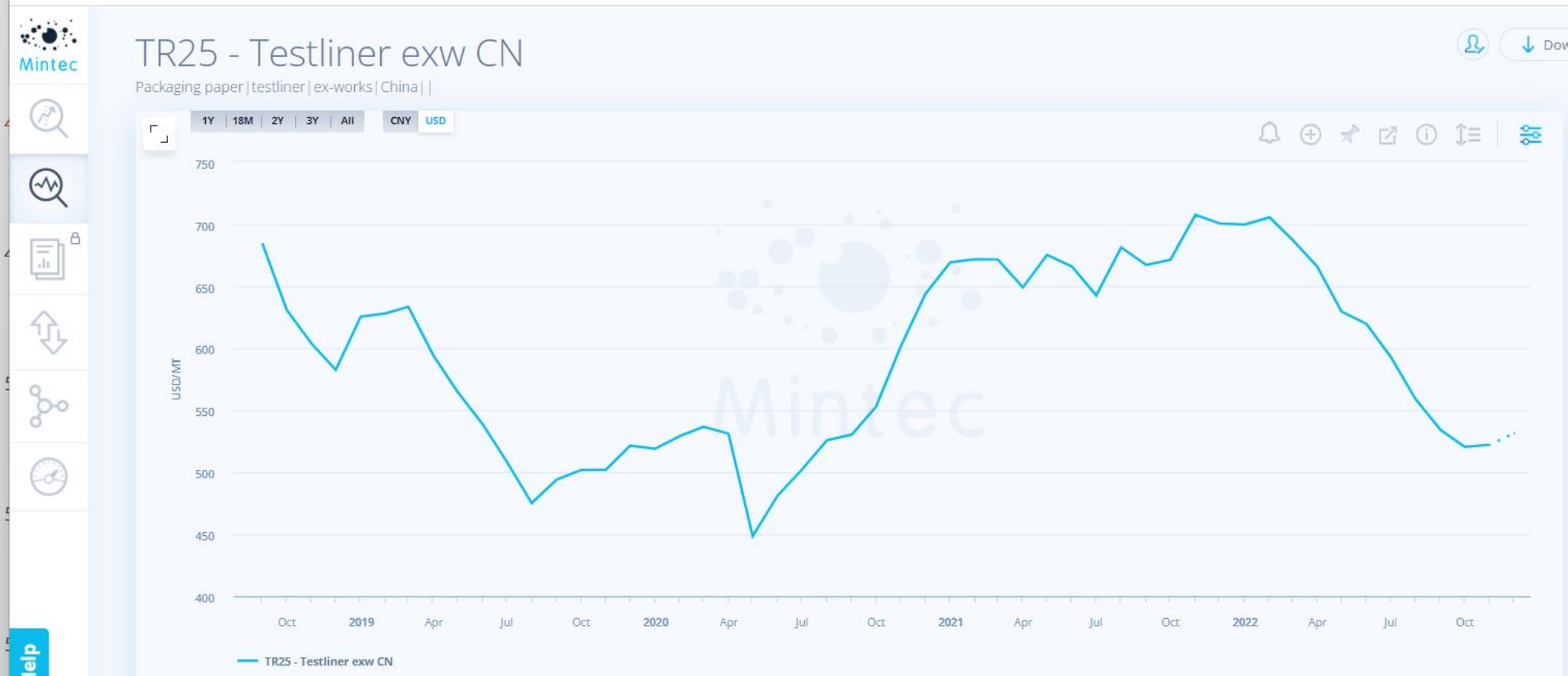
Request transparency from the supplier:

	Item	Past (Datum)	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	>>
Gas	Cover position	100%	100%	100%	100%	80%	80%	60%	30%	etc
	Price pence/kWh	6p	9p	9p	10p	etc	etc	etc	etc	
Electricity	Cover position	100%	100%	100%	100%	100%	50%	50%	20%	etc
	Price pence/kWh	17p	22p	22p	25p	etc	etc	etc	etc	

You need to approach each bit differently:



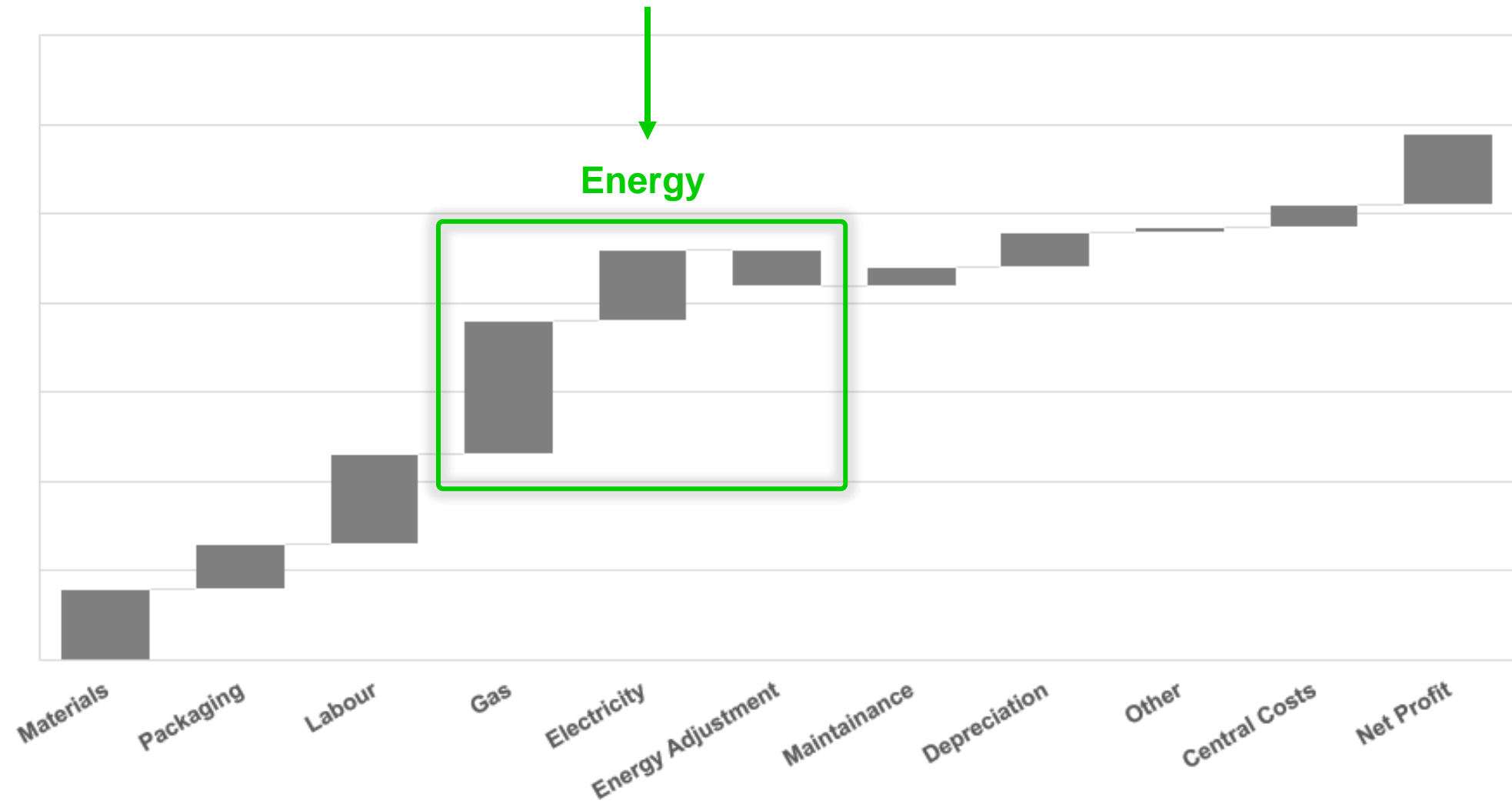
No muddying of the water with other variables....



Let's have a discussion....



Set up the appropriate mechanism



If the supplier refuses to reveal their numbers then:

- State it's not equitable
- Point out the reason they're not sharing their number is because they must have bought really well
- Don't let them hide behind anything
- Share your estimation of their energy costs
- Declare that your answer is correct unless they come with plausible amends



# 5 – Buying energy for your business

## Considerations:

- 1) Building up of knowledge & skills
- 2) Third party expertise
- 3) When to insource energy buying

### Market Impact

300%	2	4	20	80	200	400	600
200%	1.5	3	15	60	150	300	450
100%	1	2	10	40	100	200	300
50%	0.75	1.5	7.5	30	75	150	225
20%	0.6	1.2	6	24	60	120	180
5%	0.525	1.05	5.25	21	52.5	105	157.5
	0.5	1	5	20	50	100	150

Energy Spend GBP M pa

## Solar on factories and warehousing:



## Key Messages

- **Volatility is here to stay for the foreseeable future**
- **Know enough about energy to hold your own**
- **Work on absolute #s, not % of total price**
- **Understand true impact of energy through cost modelling**
- **Don't accept blank cheques**
- **Where feasible, work collaboratively**

**Thank you**

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