

# You Only Live Twice

Life after death of the merchant model for seasonal gas storage

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# Seasonal Gas Storage

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I.

The end of the Merchant model

II.

The case for regulatory intervention

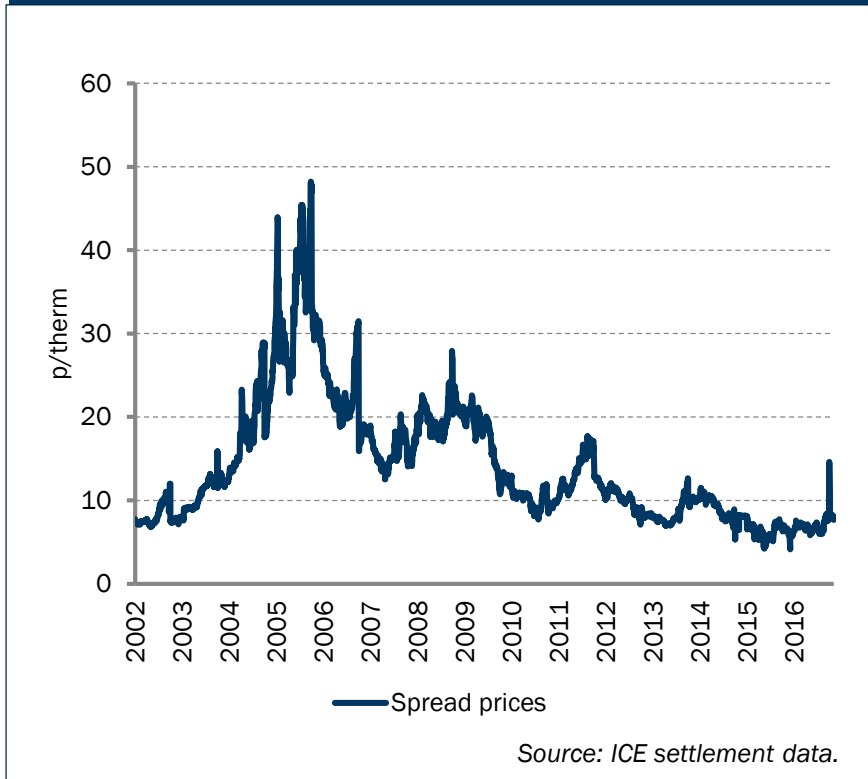
III.

Methods of intervention

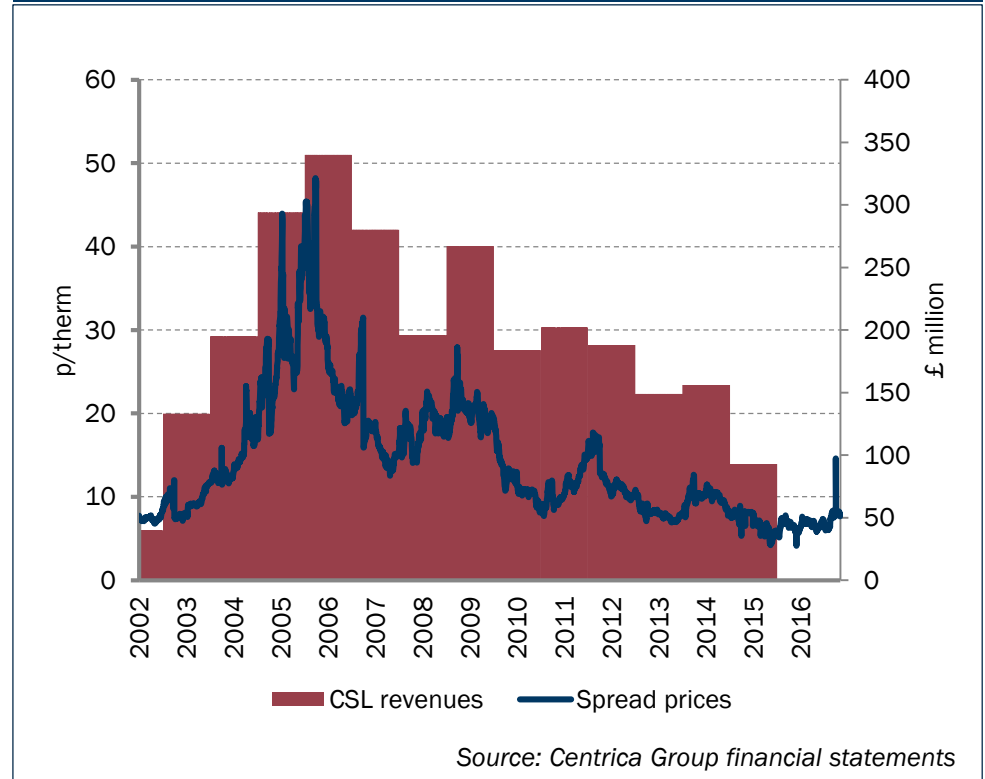
# The end of the Merchant model

# For a decade seasonal storage was highly profitable....

## High Summer/winter spread prices for most of the 2000s....



## ....supported strong revenues for seasonal storage (particularly in GB)

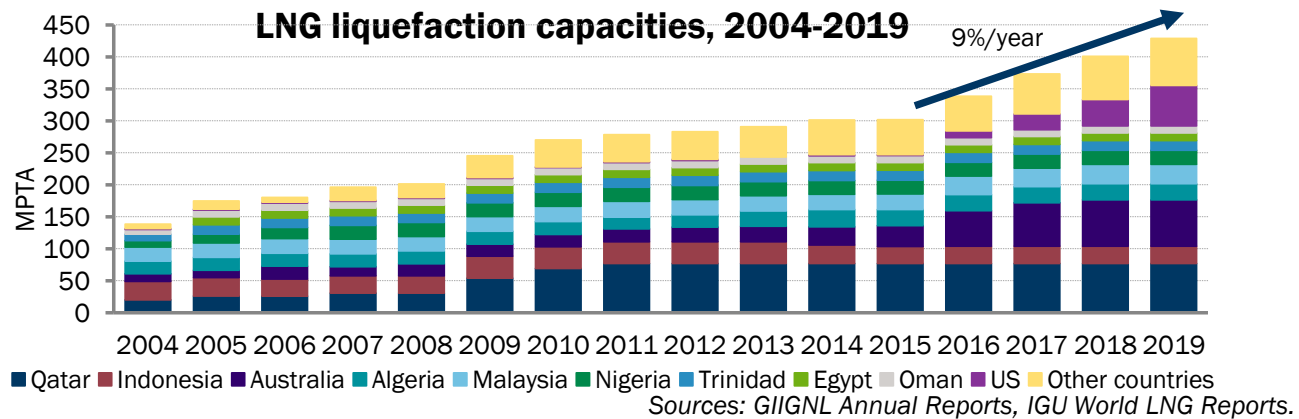


...but now revenues are significantly lower – with many operators incurring losses

# The drivers of this price collapse are relatively well understood

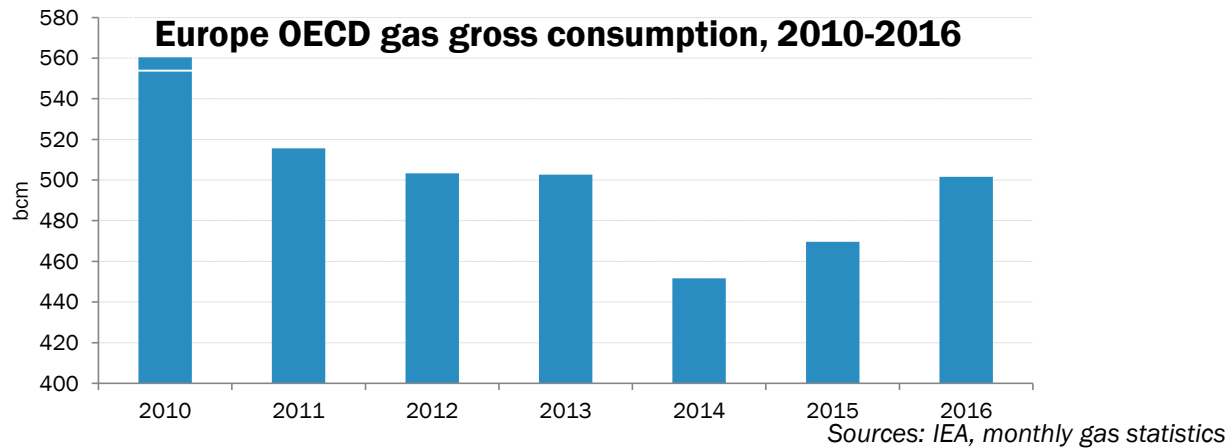
More than doubling of expansion in Global LNG production

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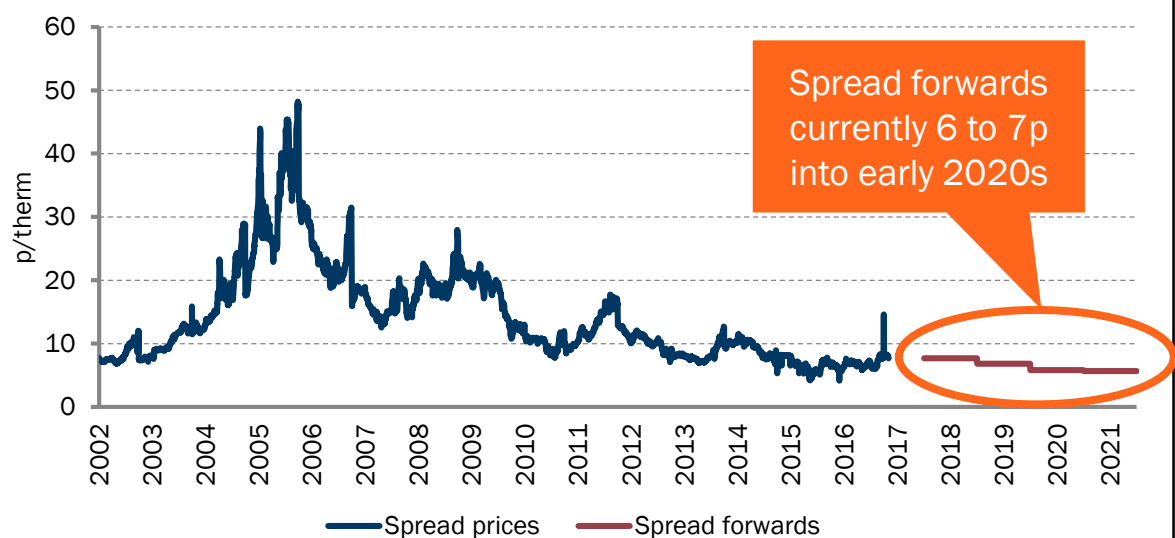
...plus other sources of gas coming on stream – e.g. additional Norwegian imports

....and a demand slowdown in key markets



...and market fundamentals appear unlikely to change in coming years

**Low spreads appear set to continue well into 2020s**



**Merchant operators unlikely to want to sustain significant commercial losses**

- Operating costs are high and some facilities, in particular Rough, in need of extensive capital expenditure – means ongoing losses for foreseeable future
- Cushion gas offers merchant operators opportunity of “one last hurrah” through blow down....
- ...but “once its gone, its gone”.

...hence, may well see permanent closures of merchant seasonal storage facilities

# The case for intervention in the market

# There are two possible rationales for regulatory intervention

1

## Security of supply

- Storage provides a form of insurance against security of supply shocks..
- A reasonable question to ask is whether market participants would buy as much insurance as politicians believe consumers want

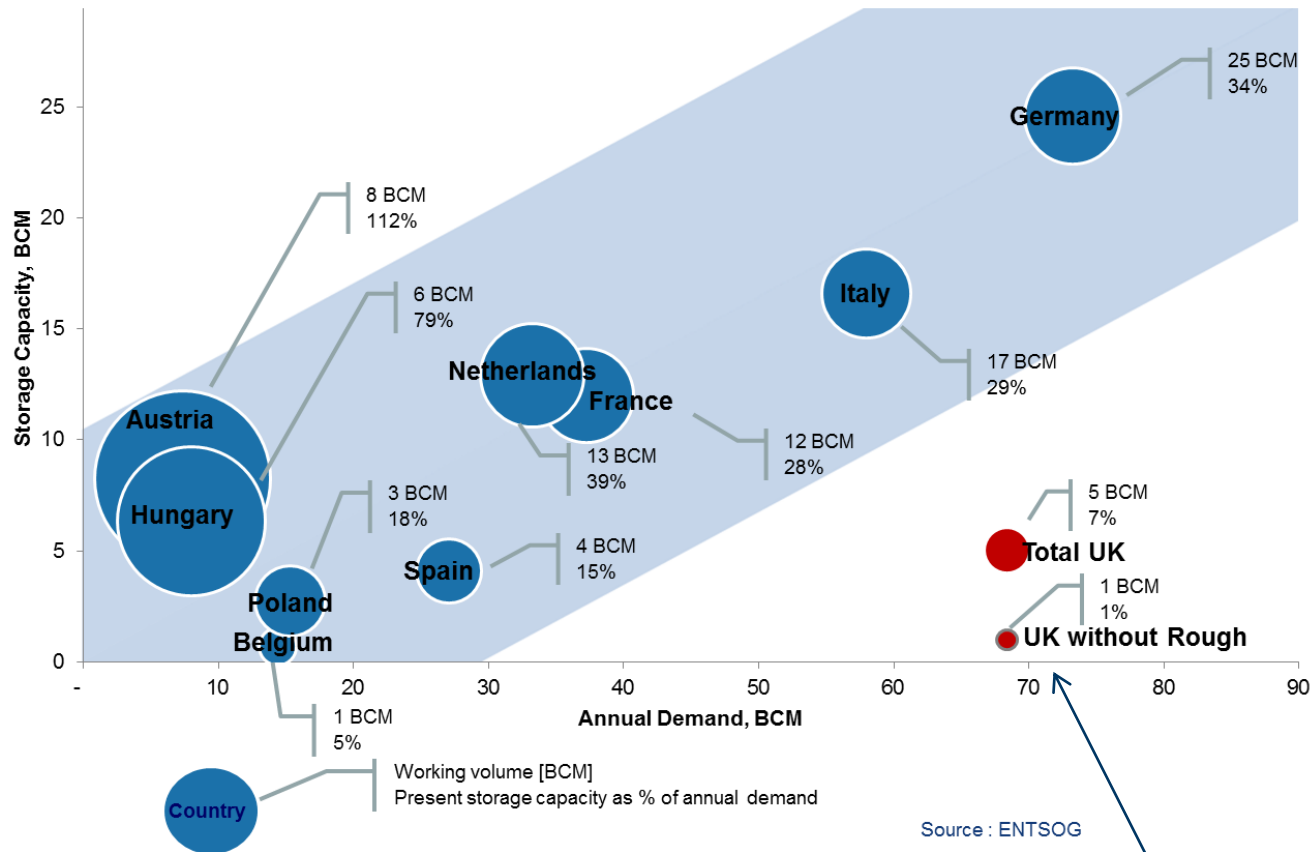
2

## Market failures

- Large seasonal gas storage sites have a significant impact on market prices...
- ...implying not all of the benefits of gas storage are caught by the merchant operator
- Or, as economists call it, storage has a “*positive externality*” ...
- ...which means there may well be an under-provision of gas storage



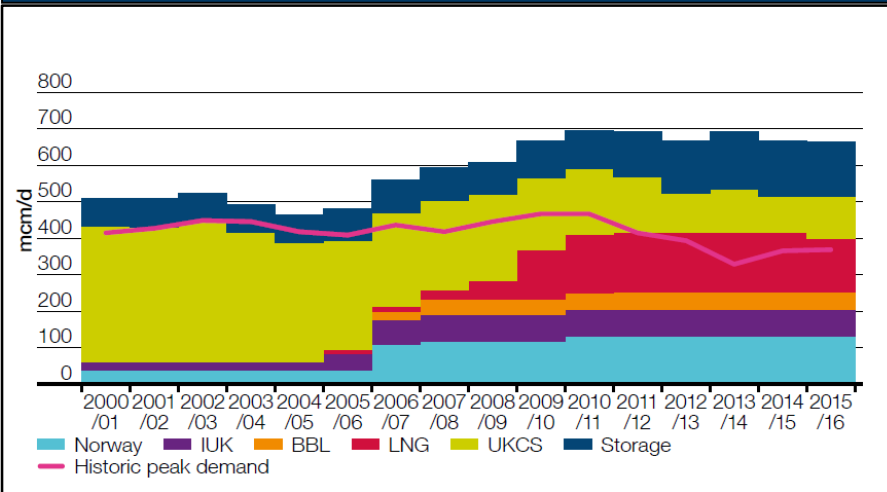
Compared to the rest of Europe, UK has significantly lower storage capacity..



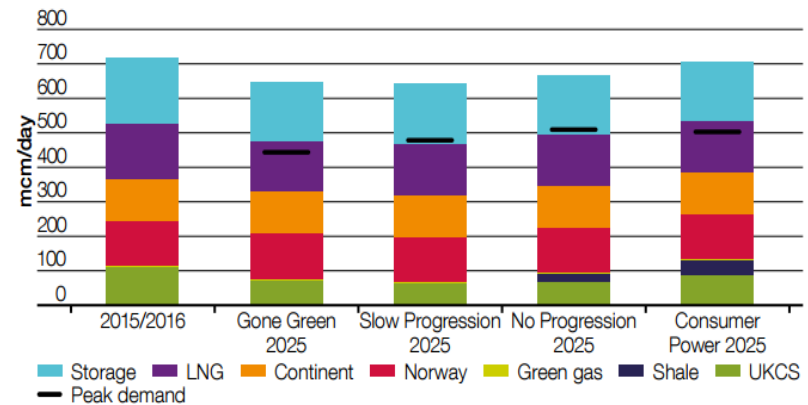
...and without Rough would have very low volumes

# A low storage level in UK is primarily a function of history

## UK gas demand historically met by local supply...



## ...but by 2025, under any scenario, nearly all gas will be imported



Source: National Grid's Gas Ten Year Statement, 2016

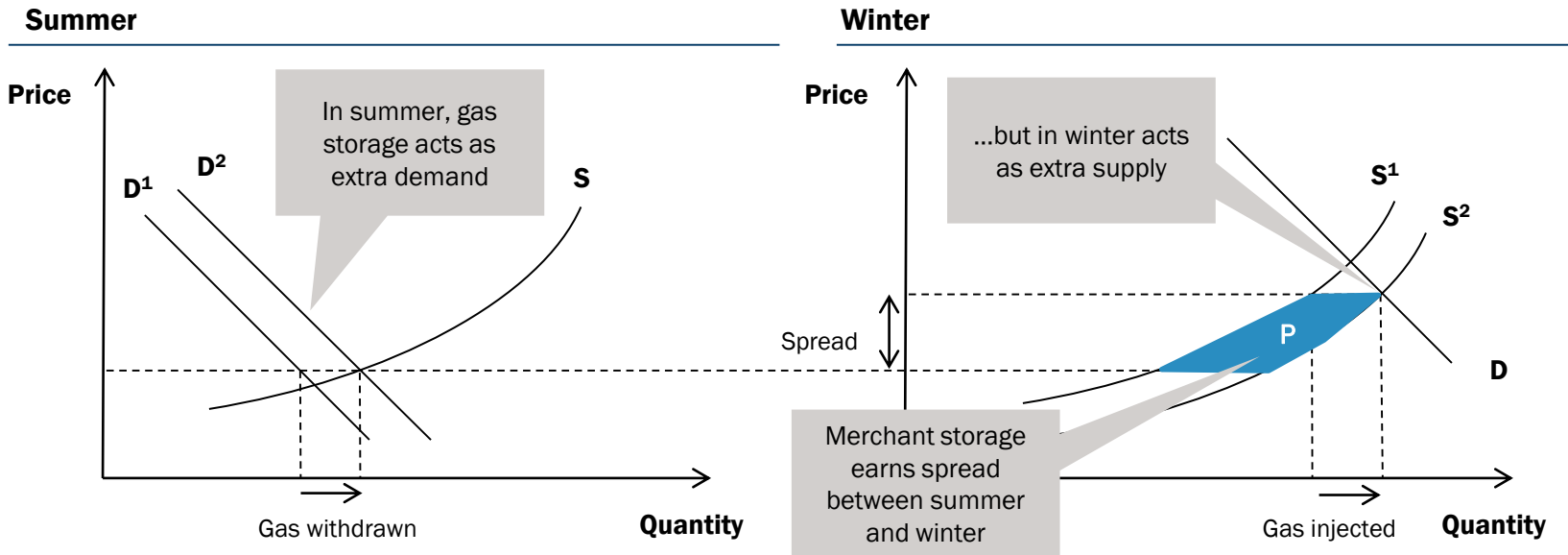
- Appears to be a sense of *"laissez faire"* that long range storage will continue E.g. National Grid 10 Year Statement *"Based on the best information available to us, we assumed that Rough would be in service throughout the duration of the analysis"*..
- ...but, as noted, we know that on current trajectory this will not be the case

## Key questions for UK policy makers

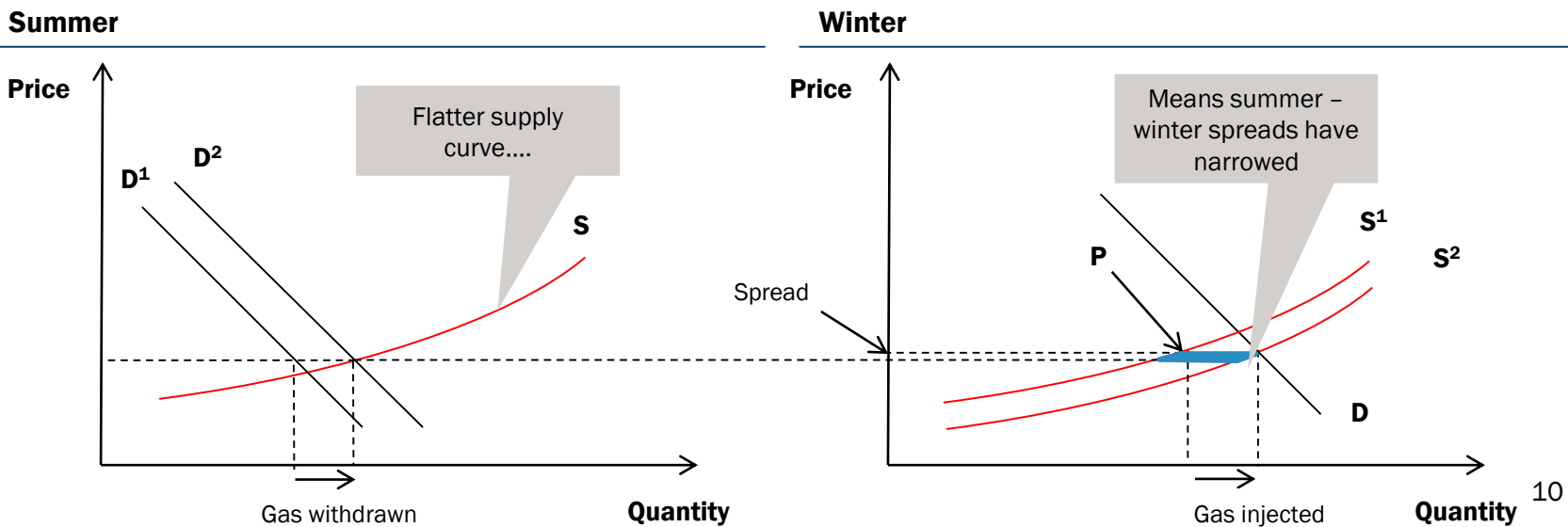
- Is it comfortable that diverse, but distant sources of supply are sufficiently reliable to meet UK security standards expected by customers?
- Will the market procure sufficient insurance against low probability high impact risks?
- Does Brexit bring additional risks?

# Summer winter price spread has historically funded merchant long range storage

Historically, shape of supply curve created sufficient spread...

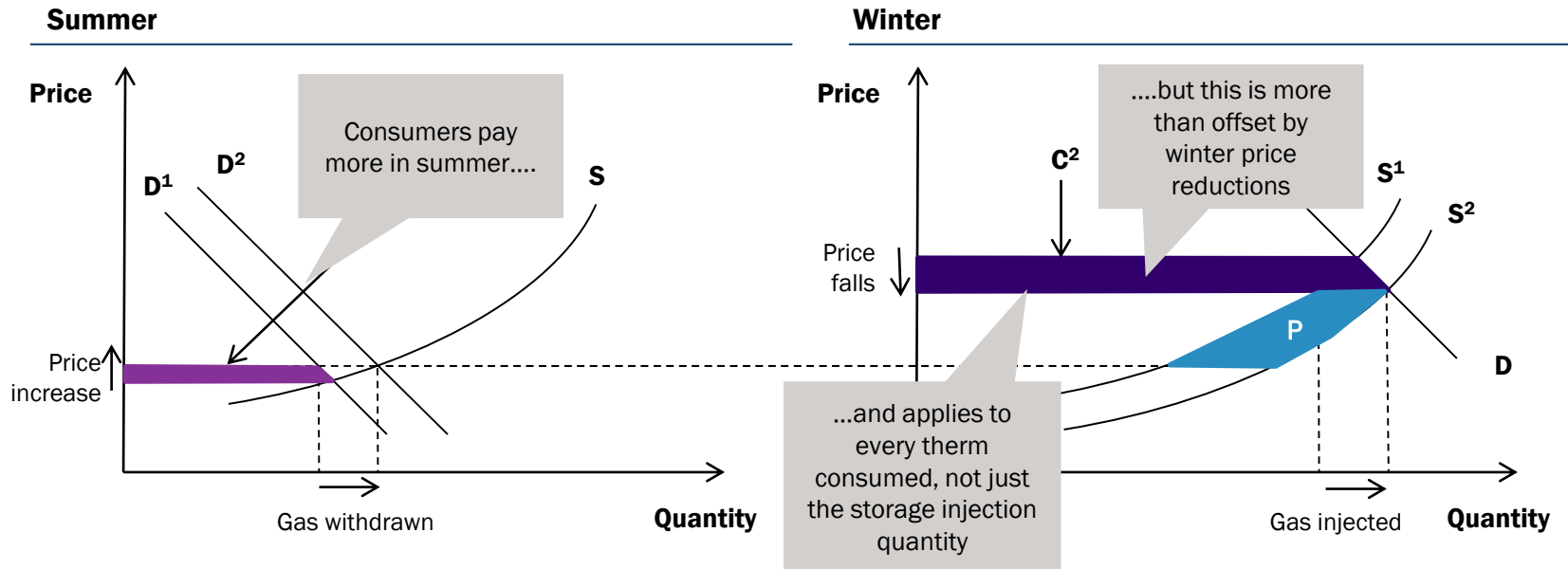


...but now supply curve flatter, thereby reducing spread

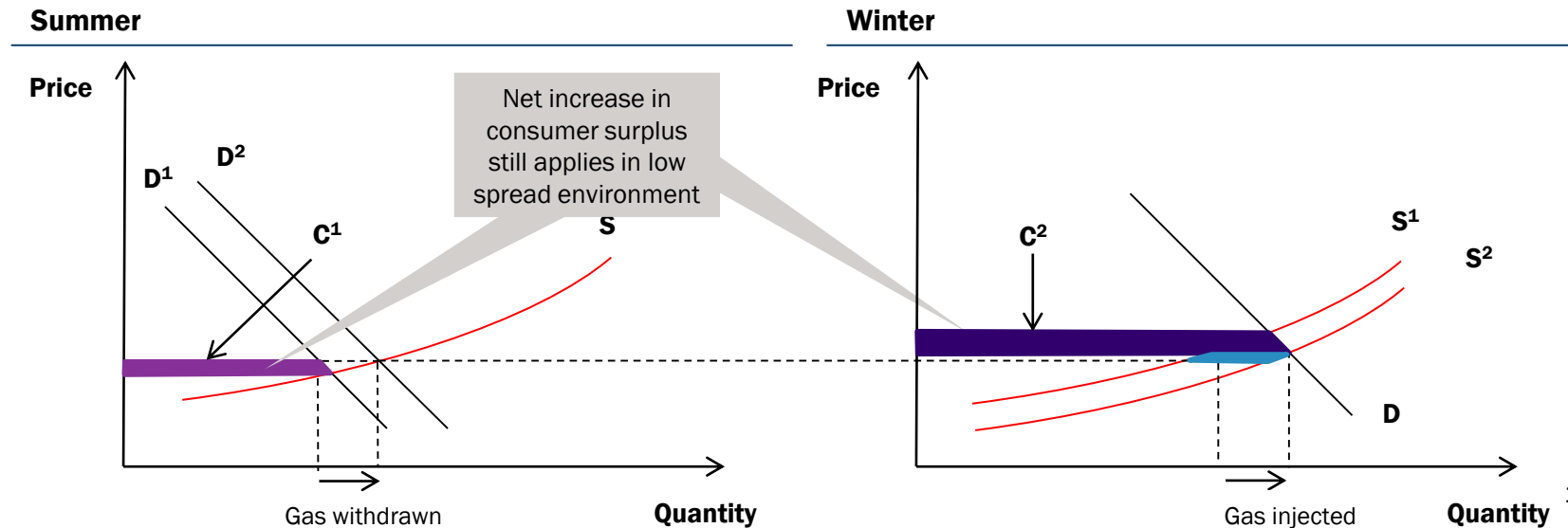


# As well as the merchant operator, customers also gain from storage

In the past, customers have benefitted from Rough's presence...

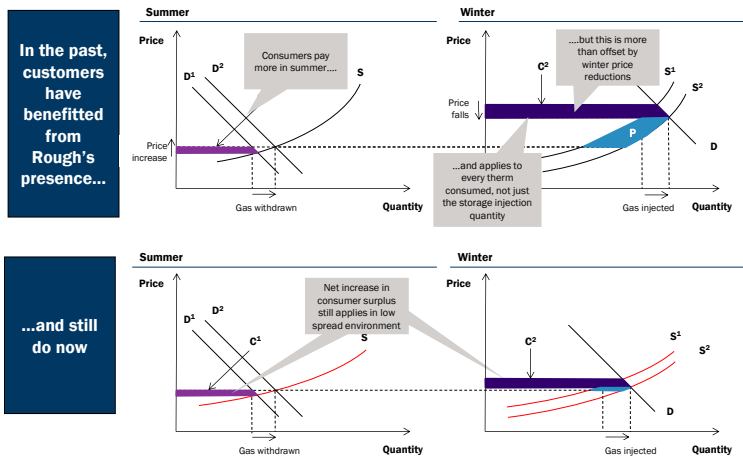


...and still do now



# In other energy infrastructure assets the risk of this market failure of the merchant model is relatively well understood...

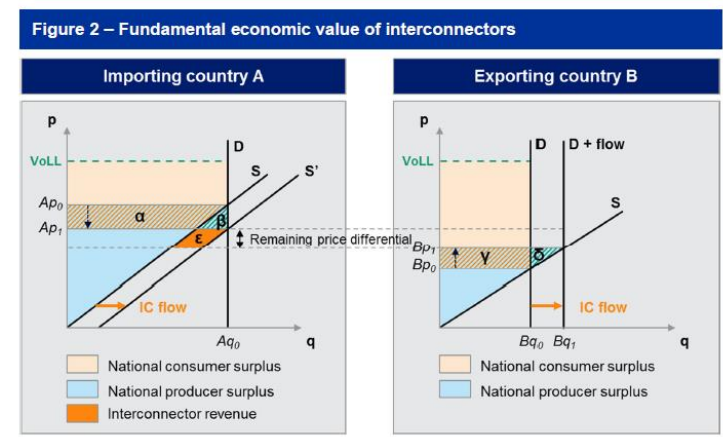
## The analysis just shown for gas storage....



...showing that benefits are not captured fully by merchant operator

Furthermore, market failure of merchant model in electricity transmission well recognised by academics

## ....is deployed frequently in evaluation of benefits electricity interconnector assets



...and is used to justify regulatory interventions

*“Relying primarily on market based ‘merchant transmission investment, is likely to lead to inefficient investment in transmission capacity” Joskow (2008)*

...hard to see rationale for relying on merchant model for gas infrastructure but not for electricity infrastructure.

# Regulatory options

# Given potential concerns regarding market failure and security of supply, regulators face choices over best way to intervene...

Often portrayed as a binary choice, but actually there are variants in between

*Relatively low degree of regulator intrusion and higher revenue risk to asset owner*

*Relatively high degree of regulator intrusion and low revenue risk to asset owner*



**Rely on market revenues**

- Interconnectors in UK
- LNG terminals
- UK Gas storage

**Mix of market regulatory revenues**

- NEMO interconnector
- NSL interconnector

**Fully regulated revenue stream**

- Electricity and gas networks
- Storage in some parts of Europe

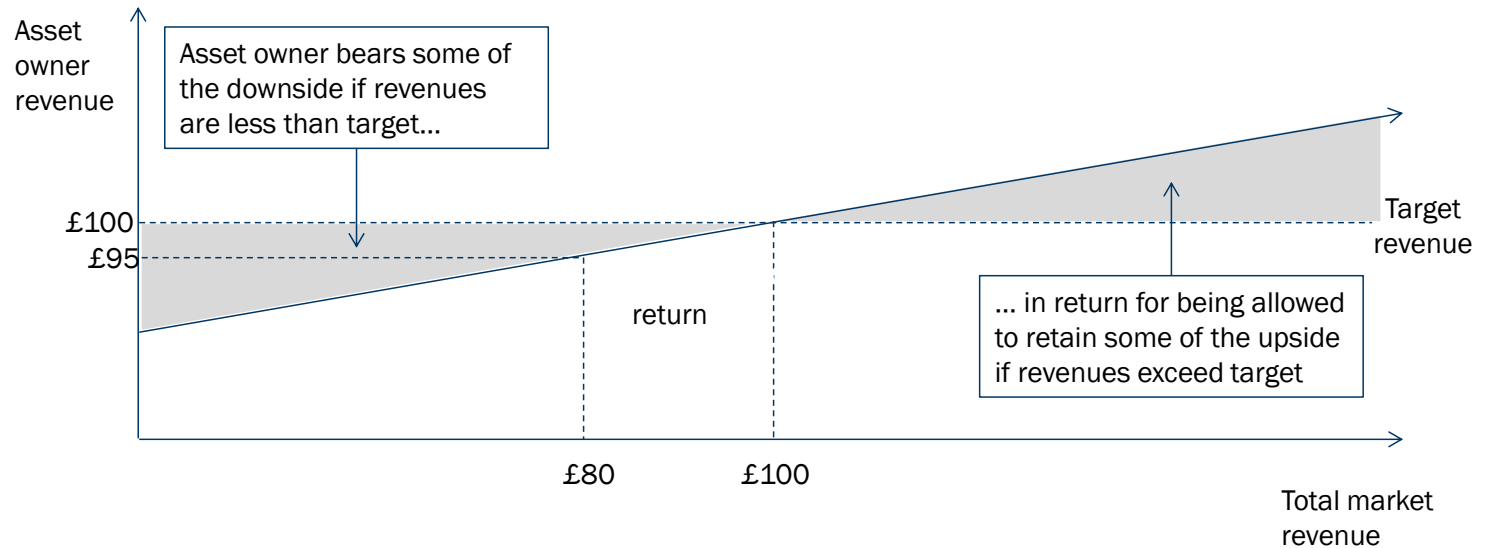
**Obligation to purchase services**

- Capacity mechanisms

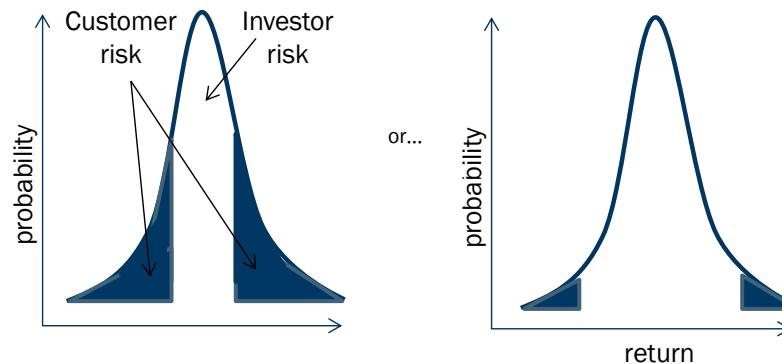
...but need to recognise that no regulatory intervention is costless and that it does introduce distortions into the market

# Like electricity interconnectors – some form of risk share probably presents the best approach for intervention

**A classic regulatory risk share device would create sensible incentives...**



**...although the “in vogue” cap and floor might also be effective**







## To summarise....

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- The merchant model for long range gas storage provision will lead to closure of significant storage assets – especially in UK
- Policy makers would be right to question whether this is in consumer interests – for both security and price reasons
- There are a number of well established regulatory models that could be deployed to support storage assets if policy makers choose to.



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# Critical Thinking at the Critical Time <sup>TM</sup>

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