



# **LTICs and Hub Pricing**

**follow up on Sergey Komlevs**  
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# Market imperfections gas

## ■ Supply:

- capacity bound
- resources subject to sovereignty (except US)

## ■ Demand: atypical demand curve

- demand: restricted by capacity
- residential: essential good without short term alternative (no short term price elasticity)
- industry / power: No price elasticity but switch to replacement fuel or merit order for power

# Why LTCs?

- Protection of specific investment decisions against obsolescent bargaining (in non liquid markets)
- Long term contracts in general:
  - Characteristic: long term contractual relation, dispute resolution
  - Typically under art 2 : for the term of this contract (duration usually 10 years +) the seller commits to deliver and the buyer commits to buy gas under the terms and conditions of this contract.
    - No specifics on price (e.g. oil price pegging)
    - No specifics on volumes (e.g. min pay)
    - Clause to adopt to changed circumstances useful
- LTCs under one jurisdiction:
  - Both sides subject to the same jurisdiction
  - Rent stays in the country concerned; distribution of rent defined by taxation regime under one jurisdiction
  - Dispute settlement under the respective jurisdiction
  - EU: one jurisdiction for infrastructure, but rent taking / taxation upstream (UK, NL some others) and downstream competence of MS

# Why LTICs?

- Stabilizing in case of oligopoly / oligopsony by PHYSICAL delivery and take (or pay) obligation
- LTIC: special case of LTC involving two jurisdictions (plus eventually transit countries)
  - Rent taking subject to two different jurisdictions (upstream and downstream)
  - Transaction to be agreed between commercial partners, but rent taking involving commercial partners AND at least two different Governments
  - Regulatory acts of one jurisdictions may affect the other side
  - Commercial balance subject to interference by either government
  - Dispute settlement by a neutral institution outside jurisdiction of either side

# Design parameter of LTICs

<b>Contract type Resource base</b>	Supply type contract portfolio or national (overall) resources		Depletion type contract Field specific	
<b>Delivery point</b>	Border		Hub (physical or virtual)	
<b>Pricing approach</b>	Cost based	Value based		Market based
<b>Offtake obligation</b>	Volume	Minimum Pay	Market share	Preferred seller
<b>Dispute settlement</b>	National jurisdiction [Court of law]		International arbitration	
<b>Price review</b>	Variety of Price review provisions (if any) to adopt to changing circumstances			

# World Price Formation: Total Imports 2014

Region	Total Imports			
	OPE	GOG	BIM	TOT
North America	0.0	114.4	0.0	114.4
Europe	144.5	216.3	9.0	369.9
Asia	69.4	8.3	0.0	77.7
Asia Pacific	185.0	28.0	7.2	220.2
Latin America	17.5	18.3	1.2	37.0
FSU	34.2	0.0	27.8	61.9
Africa	4.9	0.0	4.0	9.3
Middle East	9.2	2.9	18.7	30.8
<b>Total</b>	<b>464.7</b>	<b>388.2</b>	<b>67.8</b>	<b>921.1</b>

OPE: Oil Price Escalation; GOG: Gas on Gas; BIM: Bilateral Monopoly

Source : IGU 2015

# Gas prices: scarcity and surplus

## Different to oil

- Gas can always be replaced by other fuels (directly or indirectly, short term and long term with investment)
- Replacement fuels put a cap on gas prices (except for short term scarcity as long as replacement is not possible)
- Volume reaction depend mainly on **relative** pricing
- Scarcity of gas : allows for replacement pricing, optimizing resource rent
- **No scarcity of gas => no scarcity (replacement) gas prices**
- Surplus of gas => volume reduction by swing supplier or gas market clearing price: **competition with coal**

# Adopting LTICs to Gvt. /regulatory action

- LTICs duration was approved by respective Governments
- No direct Government interference into LTICs
  - Otherwise road to central planning
  - Changing unilaterally the balance along the chain
- No conflict resolution between Gvt involved => to be solved within commercial relation



# Challenges of hubs

- Hubs can work if enough supply competition; may attract cheap gas
- Resource rent under pressure and increasingly unpredictable
- Without LTIC exposure to oligopoly

# Restructuring: marketing or contracts ?

- To the extent contractually not bound:
  - Changing the aggregator role at import level
  - New role of exporters in the market
- Otherwise restructuring of LTICs:
  - Agreement outside contractual provisions
    - Changing volume / flexibility provisions
    - Extreme: dissolution of all firm obligations
  - By mechanism embedded in the contract
    - Bouleversement / government interference
    - Long lasting force majeure
    - Price review clause

# Price review provisions may not fit any more

- (Standard) Price reviews: yardstick for change of price provisions (except for review clause)
  - Change over time vs. status at a point in time
  - Replacement / netback / market value
  - Landscape clause (look at comparable contracts)
  - In any case (the gas shall be marketable) clause
- Dilemma:
  - Unbundling => importer under LTIC becomes an agent, no investment left to protect by in any case clause
  - Replacement market value approach void => application of
    - Landscape clause, if any
    - In any case clause (wording stems from earlier times)
  - No physical delivery but delivery at a hub => not pricing of gas any more (also no security of supply left)

# Lessons so far

- LTIC with hub pricing:
  - May work for importers with (to the extent) of own customer basis
- Hub pricing in multi-tier systems
  - May be problematic for producers in case of firm supply obligations
  - Exporter may take aggregator role
  - A multitude of approaches so far:
    - Partial pegging to hub prices
    - Retroactive cash settlement

#	Country	Company	2009	2010	2011	2012	2013	2014	review application
1	Austria	Centrex		1		1		1	
2	Austria	EconGas OMV		1		1	1		
3	Austria	Erdgas Import Salzburg				1			
4	Austria	Gazprom Austria (GWH Gashandel)		1		1		1	
5	Bulgaria	Bulgargaz	1				1		
6	Czech Republic	RWE Transgas (RWE Supply & Trading)					1	1	
7	Czech Republic	Vemex s.r.o.				1			
8	Denmark	DONG				1			
9	Estonia	Eesti Gaas AS			1				
10	France	GDF SUEZ		1	1		1		•
11	Germany	E.ON		1		1			
13	Germany	Verbundnetz Gas AG			1				
14	Germany	WIEH		1	1				•
15	Germany	Wingas		1	1				•
16	Greece	DEPA			1			1	
17	Hungary	Centrex Hungary Zrt.					1		
18	Hungary	Panrusgas Gas Trading Plc.					1		
19	Italy	Axpo Trading (EGL)		1		1			
20	Italy	Edison (Promgas)			1				•
21	Italy	ENI		1		1	1	1	
22	Italy	ERG		1				1	
23	Italy	PremiumGas			1		1		
24	Italy	Sinergie Italiane		1	1		1		
25	Latvia	Latvijas Gaze			1				
26	Lithuania	Lietuvos Dujos						1	
27	Netherlands	GasTerra		1		1			
28	Poland	PGNiG				1			
29	Slovakia	SPP			1			1	
30	Serbia	Srbijagas			1			1	
31	Turkey	Botas	1		1				
32	Turkey	Akfel Gaz, Avrasya Gaz, Bosphorus Gas, Bati Hatti, Kibar Enerji, Enerco Enerji, Shell Enerji A.S.						1	
33		Shell Energy Europe (SEEL)				1			
		Renegotiated contracts (by years)	2	12	13	12	9	10	

1 - Contract renegotiated according to Gazprom's data

1 - Discount made (inc. discount that is made without amendment to contract) according to Gazprom officials statements or media

Source: ERI RAS using Gazprom Annual Reports 2009-2013, Quarterly report: 1 Quarter 2014

# How could LTICs work in the future?

- Starting point freedom of contract: free contract pricing for single transaction or LTICs for any two parties
- What marketing structure? Demand aggregation by exporter or importer? Hindrances to demand aggregation?
- Indices for LTICs beyond the influence of the parties
- LTICs purely pegged to hub prices: economic sense?
- Making gas for power (de-carbonization) work under a different pricing?



# **Reserve slides**

# Oil pricing: supply and demand

- Cournot Nash Theorem:

$(\text{Price} - \text{Marginal cost}) / \text{Price} = \text{HHI} / \varepsilon$  , where:

HHI = Hirschmann-Herfindahl index

$\varepsilon$  = demand price elasticity

- Oil: oligopoly and inelastic demand => possibility of scarcity pricing, scarcity rent
- Scarcity: Oil price determined by **value of marginal demand** and capacity limit
- No scarcity of oil => no scarcity oil prices : oil price determined by supply / demand equilibrium: **marginal production costs** equal value of marginal demand



# Elements of a Price Re-opener\*

\*see Energy Charter: Putting a price on energy, p.155

## Trigger:

- Just by date, or index development, not by market
- If the circumstances beyond the control of the Parties change significantly compared to the underlying assumptions in the prevailing price provisions

## Adjustment:

1. Just talk, or fair and equitable adjustment,

2. Level of resource rent

- each Party is entitled to an adjustment of the price provisions reflecting such changes.
- (in some contracts: landscape clause: comparison to other similar, large import contracts)

3. Protection of the buyer (marketability)

- The price provisions shall in any case allow the gas to be economically marketed based on sound marketing.**

## Procedure / formalities

- Frequency
- Each Party to provide the information to substantiate its claim
- Peace period before starting arbitration
- Prevailing provisions apply until settlement
- Retroactive settlement incl. interest payment
- Arbitration clause, applicable law

# Classic Review of a Typical Net Back Gas Price Formula

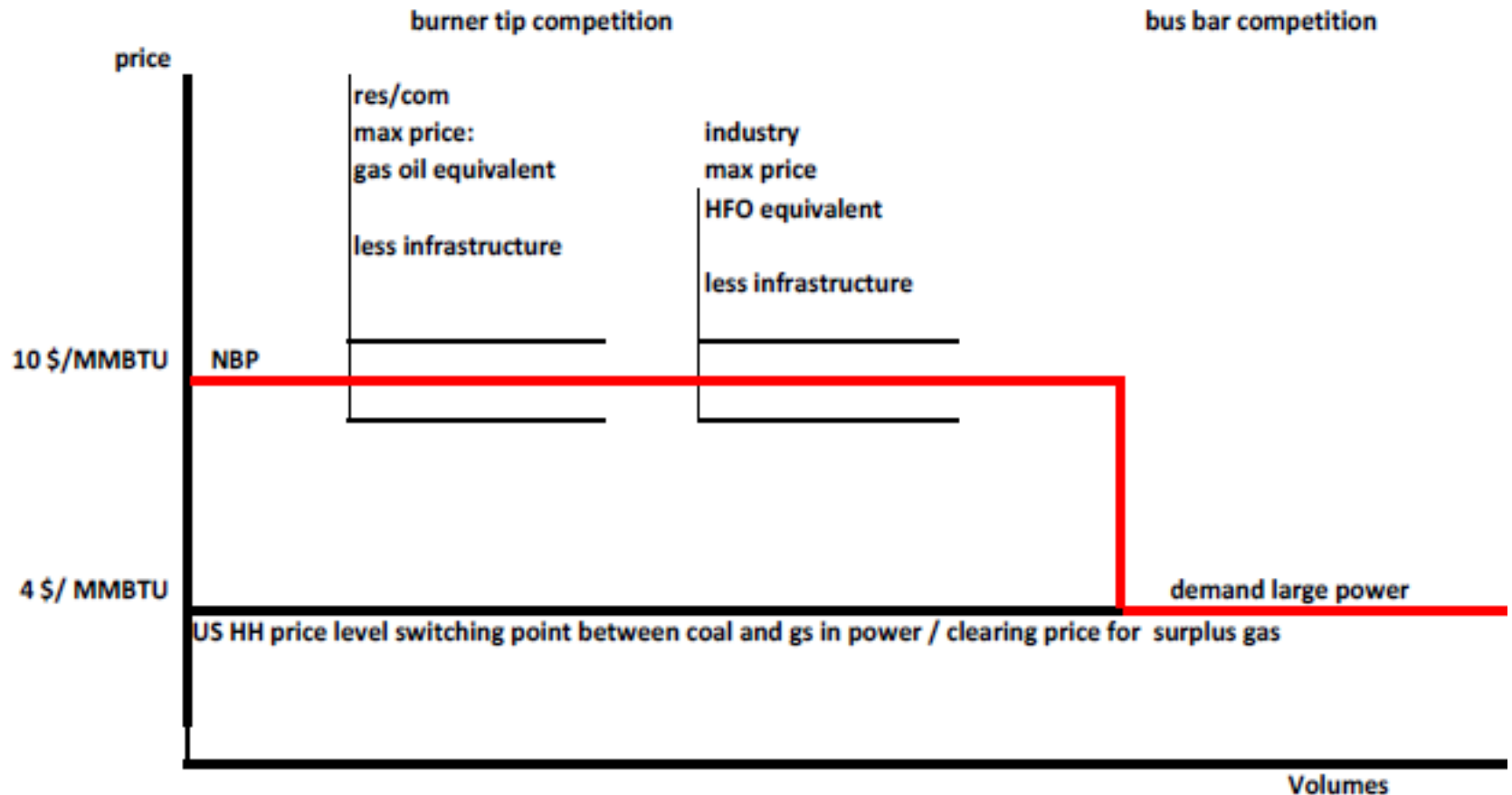
$$P_m = P_o + 0.60 \times 0.80 \times 0.0078 \times (LFO_m - LFO_o) + 0.40 \times 0.90 \times 0.0076 \times (HFO_m - HFO_o)$$

Typical subjects of a price review:

- Shares of competing fuels / new competing fuels / gas to gas competition / switching possibilities
- Adjustment of  $P_o$  to reflect changed shares
- Adjustment of rent sharing / marketing incentive implicit in  $P_o$
- Ceilings and bottoms
- More technical elements: Reference fuels, time lags

Possible: cash settlement of difference to marketable price

# Gas demand scheme (high prices)



# Gas demand scheme (low prices)

