

THE ROLE OF THE ECT IN SECURING EUROPEAN GAS SUPPLY

Dr. Andrey Konoplyanik, Deputy Secretary General, Energy Charter Secretariat

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CONTENTS:

- 1. Soviet / Russian gas supplies to Europe: contractual structure & its evolution
- 2. Zones of new risks within and outside the EU in the gas value chain of Russian gas supplies to Europe
- 3. New risks outside EU = risks related to transformation of contractual structures and pricing mechanisms within the FSU area to a market-based principles
- 4. New risks within the EU = risks related to liberalization of EU internal market and EU expansion:
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SOVIET/RUSSIAN GAS SUPPLIES TO EUROPE BASED ON GRONINGEN LTGEC CONCEPT

Soviet / Russian gas export contracts to:

- the EU (historically),
- former COMECON (since USSR dissolution), and
- FSU (since recently)
 are based on / modified towards
 Groningen (Dutch) concept of long-term gas export contract (LTGEC)



GRONINGEN LTGEC CONCEPT = BASIS FOR EU GAS SUPPLIES

Groningen LTGEC concept =

= long-term supply contract + replacement value pricing + net back + regular price rebate + minimum pay obligations + destination clauses

More than 250 BCM/y of gas imports to Continental Europe based on this concept



SOVIET/RUSSIAN GAS TO EUROPE: SUCCESSFUL HISTORY

Groningen LTGEC concept originated in 1962 (+ adaptation period) => USSR gas export to EU started in 1968 (Austria)

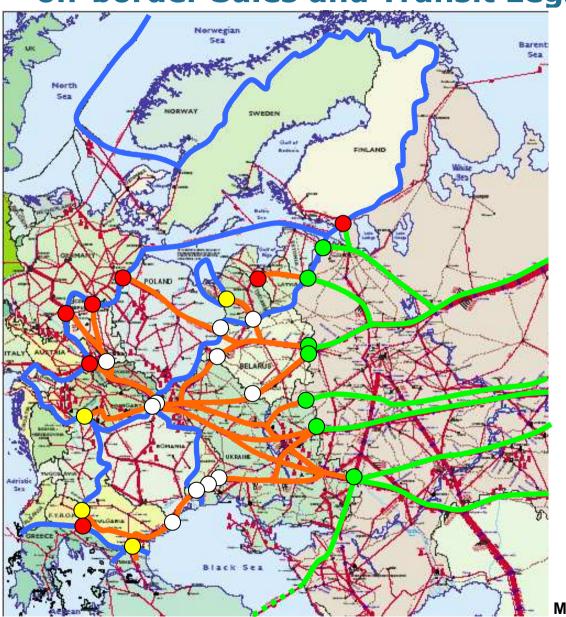
Based on Groningen concept, Russian gas export contractual structure proved its validity & reliability through Cold War and post-Soviet transformation periods => 40 years of successful history

Soviet/Russian Gas to Europe: Contractual Structure (1)

- Long-term gas export contracts (LTGEC)
- On-border EU (-15) sales
- Pricing: netted-back from replacement value at the end-market
- Destination clauses
- Multiple transit



Russian Gas Export to/through EU: on-border Sales and Transit Legs (post 2007)



Pipelines within Russia
Pipelines outside Russia

EU – 15 ► EU – 25 ► EU - 27

Russian LTGEC to EU:

A, B, C, D – points of change of ownership for gas and/or pipeline;
C – delivery points to EU;

D – delivery points through EU as REIO

After dissolution of USSR / COMECON new risks have appeared in Russian LTEGC to Europe outside Russia but within geographical area of Russian side responsibility upstream & inclusive to LTEGC delivery points

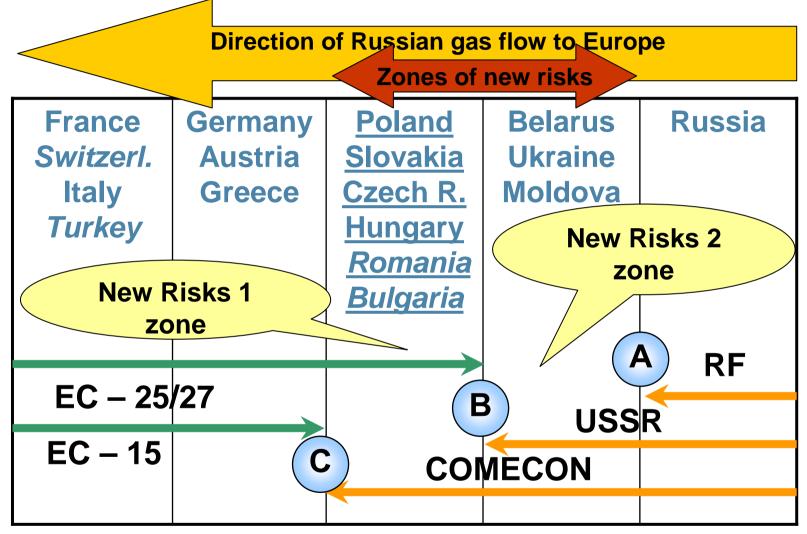
Map source: CGES



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Russian Gas Supplies to Europe: Zones of New Risks for Existing Supplies Within RF Area of Responsibility



Italic – non-EU countries; New EU accession states: <u>underlined</u> – since 01.05.2004, <u>underlined + italic</u> – since 1.01.2007; A, B, C – points of change of ownership for Russian gas and/or pipeline on its way to Europe

RUSSIA'S GAS SUPPLY TO EUROPE: NEW RISKS - WHICH, WHEN & WHERE (in the zone of responsibility of Russian side)

- Since 1991: upstream to delivery points, within CIS/NIS
 - USSR dissolution + diversified supply routes => new transit risks
- Since 2002/03: + at delivery points (consequences for Russian gas at end-use EU markets?)
 - solution on destination clauses = package deal, but whether it balanced? (e.g. TAG Dec'05 auction - capacity allocation procedure)
- Since 2004/07: + upstream to delivery points, within enlarged EU-25/27
 - combined result of EU expansion + EU gas market liberalization => new prospective transit / transportation risks
- Role of 3rd EU liberalization package? (announced 19 September 2007)

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NEW RISKS 2: COMECON / CIS RELATED (SINCE 1991)

- New CIS-related risks for Russian gas supplies to Europe:
 - result & long-term economic consequences of dissolution of USSR / COMECON political system
 - reflect objective long-term economic problems of (soft!) transition from political pricing / supply obligations within unified political system of USSR / COMECON to market-based pricing and supply obligations between sovereign states and their commercial entities

Soviet/Russian Gas Supplies to COMECON/CIS: *Prior to* Dissolution of the USSR

- Political (friendship) pricing => :
 - subsidized (notional) export prices
 - portion of resource rent is left to importer in exchange on his political concessions to exporter
 - sharing USSR resources (which today are mostly Russian resources) within USSR and with COMECON countries
- Barter & quasi-barter deals
- Transportation system but not transit system
- No transit within USSR
- Export & transit supplies are not contractually separated within COMECON

Soviet/Russian Gas Supplies to COMECON/CIS: After Dissolution of the USSR

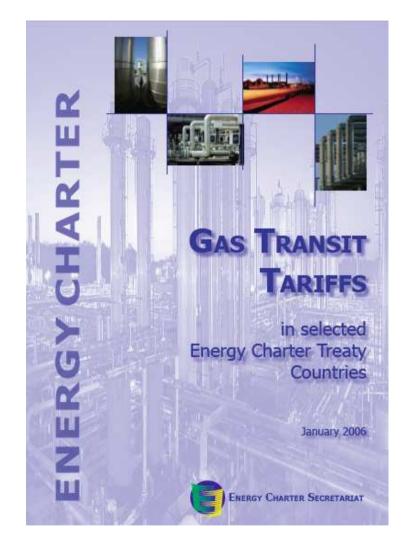
- Long & painful transition to :
 - Contractual separation of transit
 & export supplies
 - Formation of domestic transport vs. transit legislation
 - From barter to cash payments
 - From politically-subsidized to market-based pricing & prices:
 - Transit tariffs methodologies
 - Market-oriented export pricing & prices

Energy Charter
role: ECT Art.7
+ draft Transit
Protocol +
gas/transitrelated
activities: e.g.
Transit tariffs
study (Jan'06),
Pricing study
(March'07),
etc.



Report on Tariffs by the Energy Charter

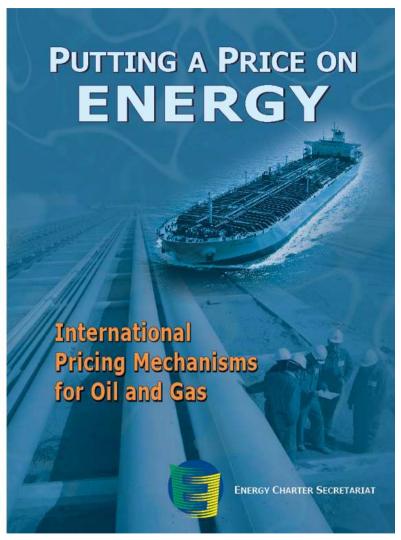




The Report can be downloaded free of charge at: www.encharter.org

Report on Pricing by the Energy Charter

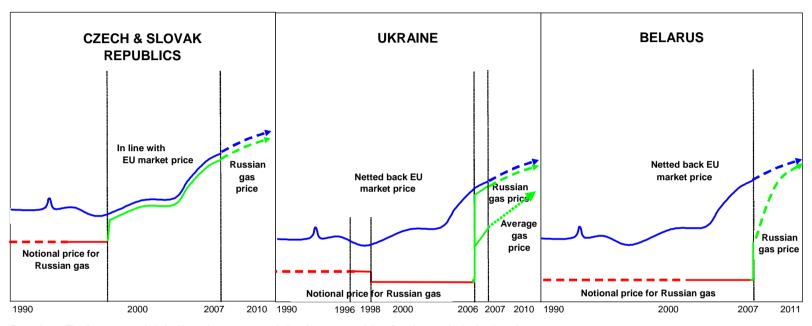




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Russian Gas Prices to the EU and Countries along the Pipe



Remarks: 1- The figures are entirely for illustration purposes and, therefore, may not fully reflect the actual price levels and movements

- 2- The illustration for "Netted back EU market prices" are based on the IEA's World Energy Outook, 2006
- 3- Estimates for future gas price movements beyond 2007 are entirely illustrative.
- 4- Recent actual price figures for Ukraine and Belarus, based on information from public sources, are as follows:

For Ukraine - Russian gas price: 230 \$/mcm (2006); Average gas price (for a mixture of Russian / Central Asian gas): 95 and 135 \$/mcm (2006 and 2007, respectively) For Belarus - Russian gas price: 100 \$/mcm (2007) It will reach market price level by 2011 in agreed upon steps (67, 80, 90 and 100% from 2008 to 2011)

5- Notinal prices for Russian gas were used to determine volumes of gas as compensation for transit services.

For Ukraine: 80 \$/mcm until 1998: 50 \$/mcm from 1998 to 2006

For Belarus: 47 \$/mcm most recently until 2007

Source: "Putting a Price on Energy: International Pricing mechanisms for Oil and Gas", Energy Charter Secretariat, March 2007, p. 168



Russia & Former COMECON/USSR: Different Sensitivity of Transition to Market-based Gas Prices

	Czech & Slovak Republics	Ukraine	Belarus
Internal motivation vs. external political obligations to move to market pricing / prices	(No?) / Yes (accession to EU)	No / No	No / No
Price gap (market vs. political price): value (USD/mcm) & trend prior to transition	10- (1998); diminishing	15 (1998), 160 (2005); growing	25 (1998), 170+ (2006); growing
Relative economic value / political sensitivity	Low	High	Highest (Union state)



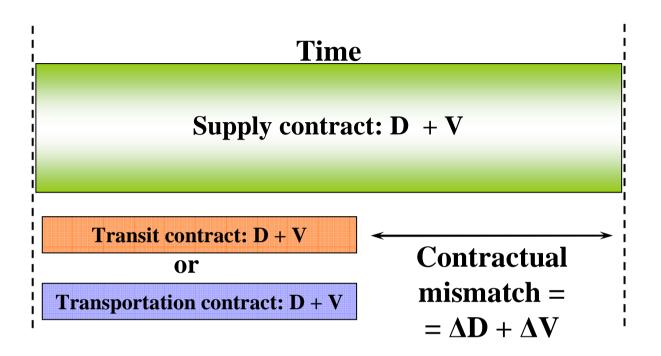
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NEW RISKS 1: EU-RELATED (SINCE 2004/2007)

- No transit of Russian gas inside/through EU up to May'2004 (EU-15) (except to Switzerland)
- Transit of Russian gas inside/through EU since May'2004 (EU-25) and even more since Jan'2007 (EU-27)
- Transit / transportation risks for imported Russian & other non-EU gas inside EU (issue for multilateral debate => Energy Charter as the best forum):
 - No clear transit rules for internal EU gas market (domestic transportation = free flow of goods inside EU)
 - but: ECT signed/ratified by both the EU and by individual EU memberstates =>
 - EU acquis vs. international treaties of EU as REIO => ?
 - disputes between/with EU member-states (ECT CPs & REIO members)
 vs international arbitration (ECT: ICSID, UNCITRAL, SCC) and/or
 European Court of Justice => ?
 - Internal EU issue (REIO clause), BUT international (external EU) effect
 - Problem of contractual mismatch (long-term access to infrastructure for transit flows to match existing LTGEC supply obligations)
 - Major elements of EU liberalization (unbundling + mandatory TPA)
 + contractual mismatch => creates new transit / transportation / investment risks

CONTRACTUAL MISMATCH PROBLEM



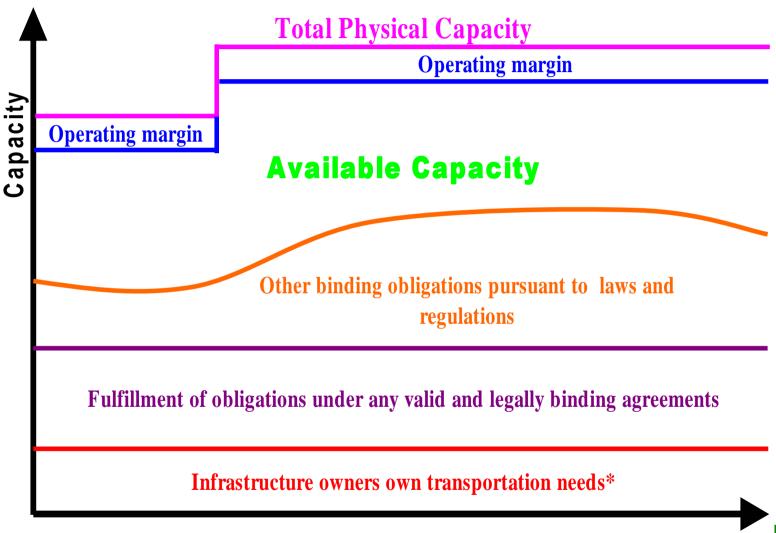
Mismatch: between duration/volumes (D/V) of long term supply (delivery) contract and transit/transportation contract as integral part to fulfill the delivery contract => risk of non-renewal of transit / transportation contract => risk for supply contract.

Core issue: guarantee of access to / creation of adequate transportation capacity for the duration of long term contracts

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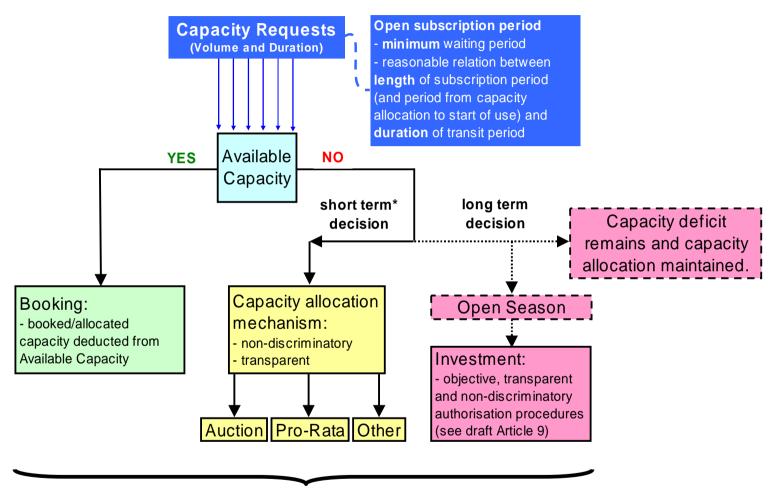
Definition of Available Capacity

(**Draft TP Article 1.2 -- CC 251**)



^{* &}quot;Subject to requirements for access to ETFs applicable within a CP" -- EU Time
Dr.A.Konoplyanik, CESSA Conference, Cambridge, 13-15 December 2007 Slide 22

Capacity Allocation



Prevention of speculative hoarding and capacity blocking e.g. operational use-it-or-lose-it



^{*} short term: capacity increase not possible within given timeframe

Use of Excess Revenues from Auctions

(Draft TP Article 10bis.3 -- CC 315)

Excess Revenues Generated

reducing or mitigating congestion, including, reasonable measures for maintaining or restoring physical operating capacity

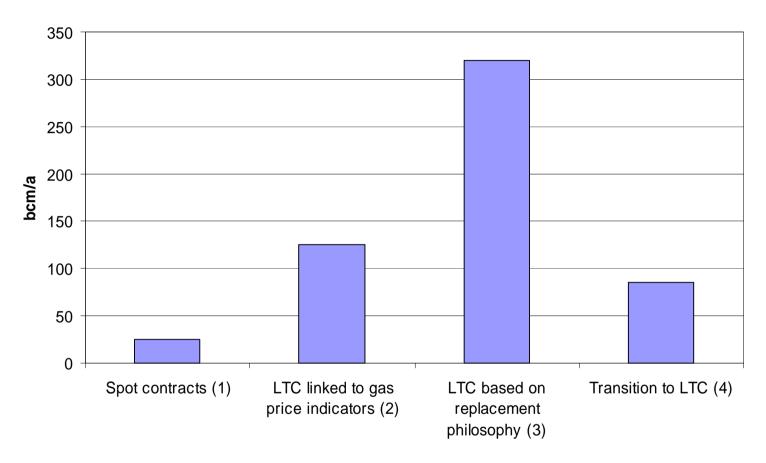
reducing, within a reasonable timeframe, the Transit Tariffs charged for the use of the relevant ETFs



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Estimated International Gas Trade (2005): Different Pricing Mechanisms for Main Regions

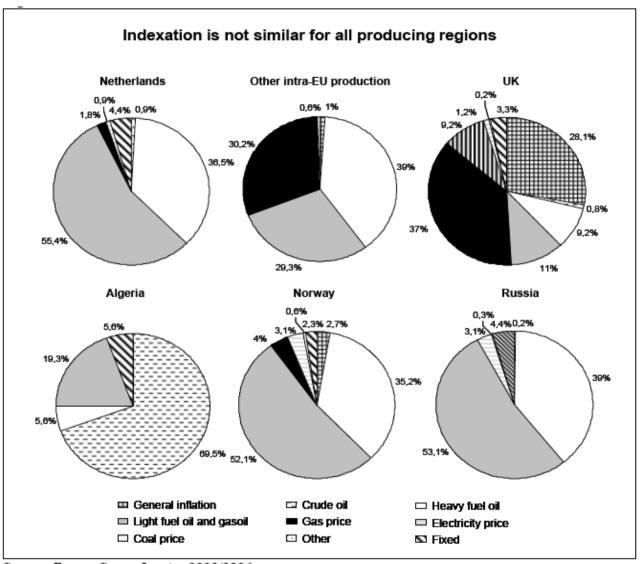


Source: BP (2006)

- (1) LNG to USA, UK and other spot LNG; arbitrage on the UK-Belgium Interconnector
- (2) Pipeline Canada-USA, pipelines to UK (BBL, Langeled) and new Dutch exports
- (3) All imports by Continental Europe (incl. accession countries) less spot LNG under (1
- (4) Trade with FSU now in transition from quasi-barter deals to LTCs, 2004 figures



LTGEC: Indexation by Producer



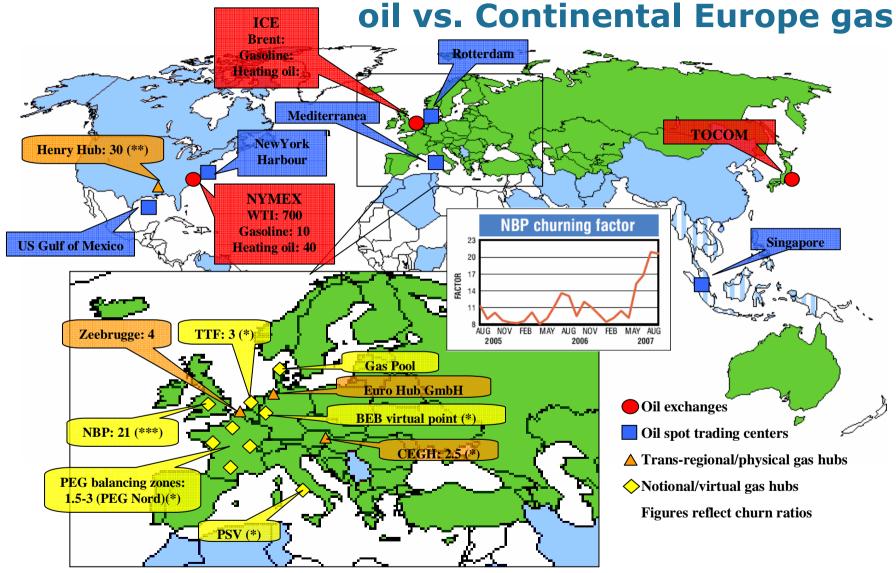
Source: Energy Sector Inquiry 2005/2006



The most intriguing question

- is => the difficulties and risks of transition from a system with strong players to a system with one/few liquid market places & many players
- Representative of a gas-producing company at Energy Charter IAP meeting: "Producers are interested and know how to supply their gas to a market with deep liquidity, or to a market with low liquidity but with strong players; however, markets with low liquidity and weak players are difficult to supply" (Putting a Price on Energy, p. 166)

Comparative liquidity of marketplaces: worldwide oil vs. Continental Europe gas



(*) BEB hub = Bunde (Germany) at German/Dutch border, CEGH = Central European gas hub (Baumgarten, Austria), NBP = Notional Balancing Point (UK hub), PEGs = French hubs (GdF), PSV = Punto di Scambio Virtuale (Italian hub), TTF = Title Transfer Facility (Dutch hub); (**) 2004 – 2006 average; (***) 8-14 during the 2004 – 2006 period

2004-2006 FLAME Polls on Gas-to-Oil Price Pegging

Q 2004-05: When will European LTC gas prices "break loose" from oil prices and be ruled by spot/futures quotations?			Q 2006: To what extent will spot pricing in gas markets replace oil price pegging formulas?	
By yearend 2005	1	-	Very considerably	4
By yearend 2008	ı	5	Considerably	28
By yearend 2010	24	17	To some extent	44
By yearend 2015	36	23	Slightly	23
After 2015	15	30	Nil	1
Never	24	25		

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International Energy: competition & investments

Cross-border energy flows (energy value chains)

Consumer states
/ importers

Transit states / importers



<u>Aim of importers</u> = to increase import supplies of EMP in order to decrease energy prices for end-users => competition is not the end in itself, but the mean to achieve major aim => competition between exporters (!) => diversification of supply routes from few existing exporters (multiple pipelines) + few new exporters & new supply routes (multiple supplies) => CAPEX + time => competition (or cooperation !) between few major producers;

But: competition leads to increase of energy prices for end-users - if organised as increase of number of traders (especially of small re-sellers) at the market of consumer/importer state under limited supply (restricted, *inter alia*, by liberalization risks for exporters)

Non-renewable energy resources: limited number of producers / exporters + national sovereignty on energy resources;

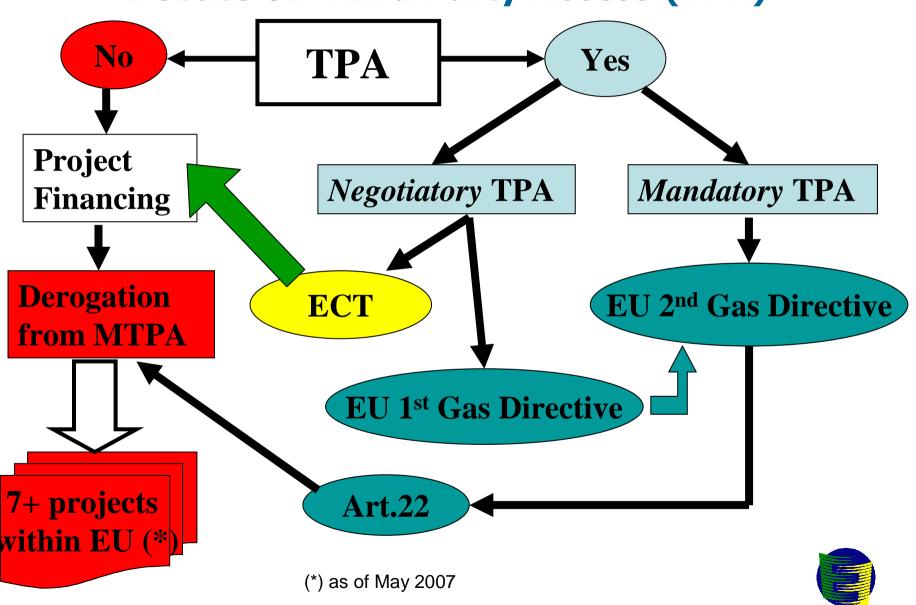
<u>Aim of exporters</u> = maximization of Hotelling rent;

Competition (for exporters) = diversification of supply routes to existing markets & access to new markets =>

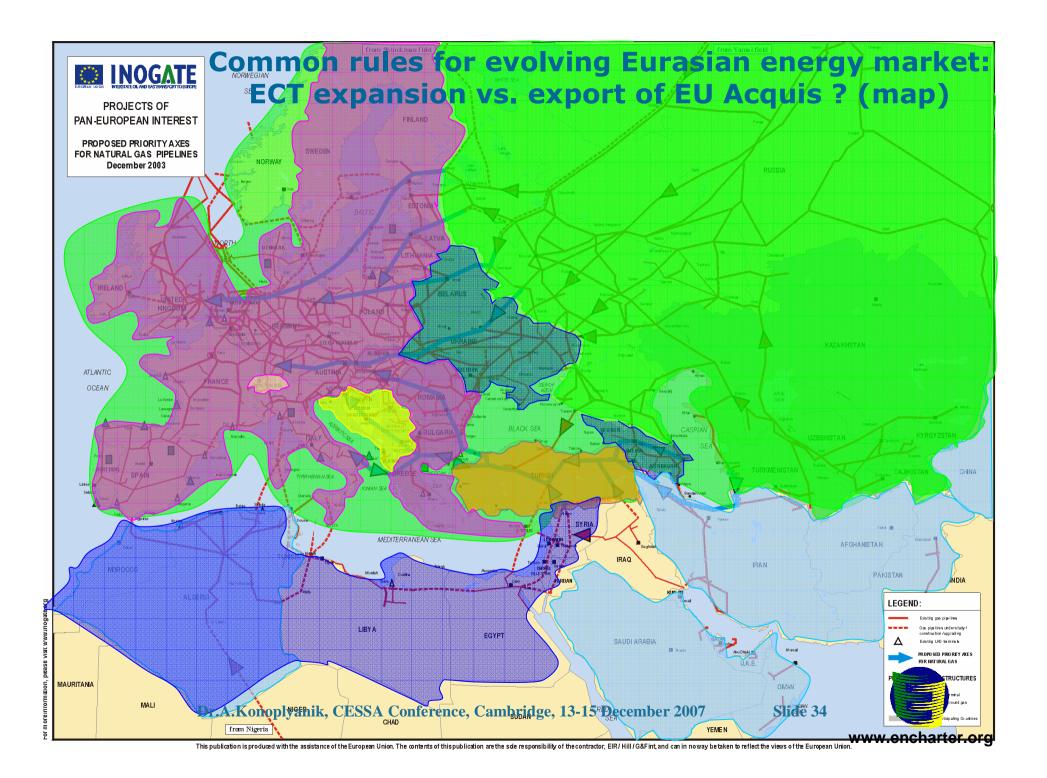
CAPEX + time



Competition & investment: Debate on Third Party Access (TPA)



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Common rules for evolving Eurasian energy market: ECT expansion vs. export of EU Acquis ? (legend)

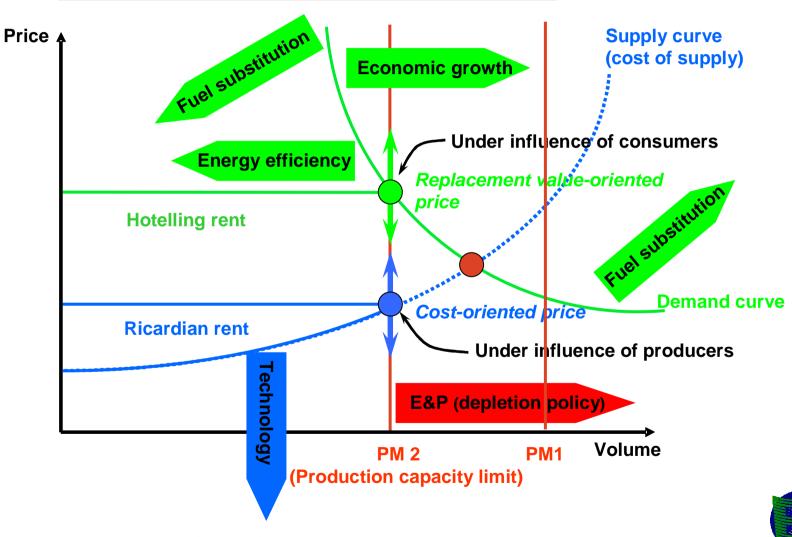
Zone	States within the zone	Description
	EU Members: 27 EU countries	EU legislation, including the energy legislation, is fully applicable
	Energy Community EU-SEE Countries: Croatia, Serbia, Montenegro, Croatia, Bosnia, FYROM (Macedonia), Albania, UNMIK (Kosova); other Energy Community members are already EU members	Only EU legislation on internal electricity and gas markets is applicable
	EU Candidate Countries: Turkey (Croatia is already an Energy Community member so applying the EU energy market acquis)	Still in the process of alignment to the EU legislation but full compliance not likely before membership
	EU Neigbourhood Policy Countires: CIS (Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine) and Northern Africa (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, the Palestinian Authority, Syria, Tunisia)	Enhanced energy cooperation based on National Action Plans with Ukraine and Moldova (as well as with Israel, Jordan, Morocco, the Palestinian Authority and Tunisia); partial application of EU energy policies and legislation may be possible in the future
	EU-Russia Strategic Partnership: EU & Russia	Based on shared principles and objectives; applicability of the EU legislation in Russia is out of question
	ECT member-states: 51 states of Europe & Asia	ECT is fully applicable within the EU as minimum standard; EU went further in liberalizing its internal energy market, BUT whether EU can demand that other ECT member-states follow same model and speed of developing their domestic markets?
	ECT observer-states: 20 states of Europe, Asia (e.g. Middle East, South-, SE- & NE-Asia), Africa, North & Latin America	Shared ECT aims & principles; did not take ECT legally binding rules; not ready to take more liberal rules of EU Acquis

Thank you! www.encharter.org

Back-up slides

Pricing of Non-Renewable Energy Resources: RICARDIAN VS. HOTELLING RENT

Ricardian rent + Hotelling rent = Resource rent



Gas Export Pricing & Prices (2)

Pricing principles:

- <u>Cost-plus</u> => pricing at the internal domestic market of the producer or subsidized export pricing (Hotelling rent is shared with your own nation or with foreign nation)
- Replacement value (costs of alternative energies) at the burner tip => can be realized, in case when domestic production capacities are below internal demand for gas
- Net-back replacement value = replacement value netted back to a point upstream of the burner tip in the delivery chain (delivery point) => Dutch (Groningen) model of long-term export contract (since 1962)

The Groningen Concept

Developed by Nota de Pous (Note to Parliament in 1962) For exports:

Pricing:

- Replacement value principle at the consumer market (no production cost-related approach at the producer market)
- Net-back value, netted back from replacement value at the end-use market
- Regular price review, if no joint solution=> arbitration
- Price risk and reward for seller, marketing risk for buyer
- Protection against arbitrage by buyer (destination clauses)

Volumes and risks:

- Long term supply vs. off-take obligation based on minimum pay: dedication of certain volumes of reserves vs. commitment to market defined volumes
- Secure supply at marketable prices against reliable sales volumes at maximum highest marketable price



Driver for Groningen Concept: Optimizing the Resource Rent

Specificity of investment and resource base

Replacement value principle (domestic and export):

Max price consumer will pay compared to alternatives

If gas-to-gas competition:

replacement value => gas market price

Otherwise defined by costs of replacement fuels

Export:

Long term: Maximise resource rent over time (in cash)

Keep supplies reliable but tight

Ensure a defined sales volume

Replacement value pricing => periodical adjustment

Net back to supply point: Consumers pay, but costs of infrastructure deducted from revenue of resource owner



LTGEC = DEPOLITICISED MODEL

Groningen LTGEC concept: No political problems ever - related to regular price rebates within LTC structures - nor with Dutch (*), nor with Soviet/Russian gas exports (pure commercial & depoliticized issues)

Russia-Ukraine (2005/06) & Russia-Belarus (2006/07) gas disputes = results of painful transition from political to market-based export pricing to be finally based on Groningen LTGEC concept => mostly artificially politicized commercial issues (e.g. investigation of reasons for gas undersupplies to Italy in Winter 2005/06)

(*) except one case in 1980/81 – "Spierenburg round",



Soviet/Russian Gas to Europe: Contractual Structure (2)

- Long-term gas export contracts (LTGEC)
 - Basis for financing of large-scale & capitalintensive projects on gas production & longdistance transportation (approx. 20%:80% project costs)
 - Demand of financial institutions to provide for long-term & stable financial flows from gas sales to pay-back debt (project) financing
 - Debt (project) financing = up to 80-90% of project CAPEX
- On-border EU (-15) sales
- Pricing: netted-back from replacement value at the end-market
- Destination clauses
- Multiple transit



Soviet/Russian Gas to Europe: Contractual Structure (3)

- Long-term gas export contracts (LTGEC)
- On-border EU (-15) sales
 - Delivery points upstream to end-markets
 - Sales on EU border = distribution of zones of responsibility between gas supplies and buyers for secure gas supplies within the cross-border gas value chain
 - Historically predetermined by political split of Europe in end-1960's
 - One delivery point served for few (more than one) final consumers
- Pricing: netted-back from replacement value at the end-market
- Destination clauses
- Multiple transit



Soviet/Russian Gas to Europe: Contractual Structure (4)

- Long-term gas export contracts (LTGEC)
- On-border EU (-15) sales
- Pricing: netted-back from replacement value at the end-market
 - e.g. less compensation for transportation costs from end-market to delivery point =>
 - Different end-use gas prices at different end-use markets for Soviet/Russian gas +
 - Different distances from different end-use markets to delivery points =
 - Availability of Soviet/Russian gas with different levels of contractual prices (aimed at different final destinations) in the same delivery point
- Destination clauses
- Multiple transit



A Typical Net Back Gas Price Formula & its Review

```
Pm = Po
+ [0.60] x [0.80] x 0.0078 x (LFOm - LFOo)
+ [0.40] x [0.90] x 0.0076 x (HFOm -HFOo)
[+ ... ]
[+ ... ]
```

The gas price Pm during the Month m is a function of

- the starting gas price Po
- and the price development of competing fuels Light Fuel Oil (LFO) and Heavy Fuel Oil (HFO)

Typical subjects of a price review:

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

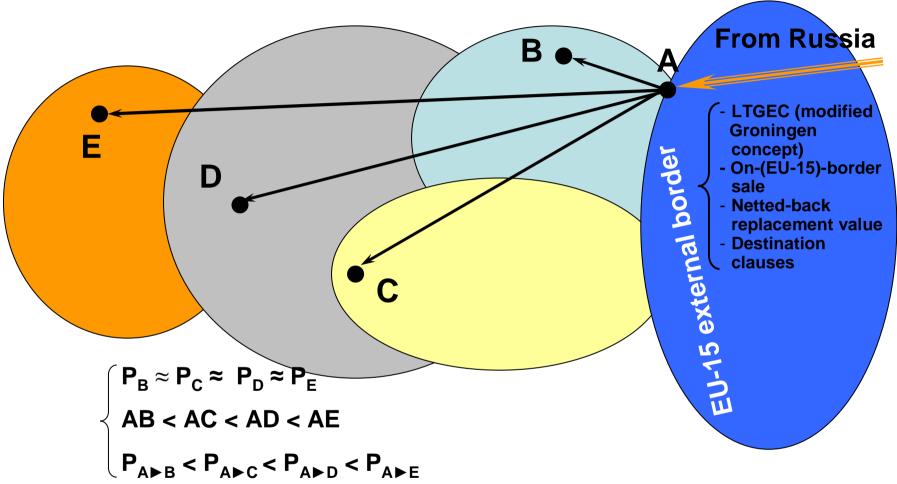


Soviet/Russian Gas to Europe: Contractual Structure (5)

- Long-term gas export contracts (LTGEC)
- On-border EU (-15) sales
- Pricing: netted-back from replacement value at the end-market
- Destination clauses
 - Protection against price arbitrage =>
 - Instrument of price risk mitigation =>
 - increase reliability of repayment of debt financing
- Multiple transit



Destination Clauses: Economically Motivated Integral Part of Soviet / Russian Export Schemes to Europe



"Destination clauses" allowed gas supplier to sell gas to different buyers at different prices and other contractual terms at one and the same delivery point to protect its competitiveness at the end-use market (to prevent arbitrage by buyers)

Soviet/Russian Gas to Europe: Contractual Structure (6)

- Long-term gas export contracts (LTGEC)
- On-border EU (-15) sales
- Pricing: netted-back from replacement value at the end-market
- Destination clauses
- Multiple transit
 - Multi-vector transit within the expanded geography & more complicated structure of gas supplies
 - increasingly important: compared to other exporters & esp. after USSR/COMECON dissolutions

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