

**Ukrainian Import Gas Prices and Pricing -
In a Global Context and On the Basis of the
Energy Charter Study on International
Pricing Mechanisms for Oil & Gas**

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**Presentation at the Ukrainian Energy Summit
14 March 2007, London**

REPORT IN ENGLISH AND RUSSIAN BY THE ENERGY CHARTER

ЦЕНА ЭНЕРГИИ

Международные
механизмы формирования
цен на нефть и газ



СЕКРЕТАРИАТ ЭНЕРГЕТИЧЕСКОЙ ХАРТИИ

PUTTING A PRICE ON ENERGY

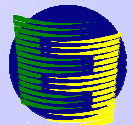
International
Pricing Mechanisms
for Oil and Gas



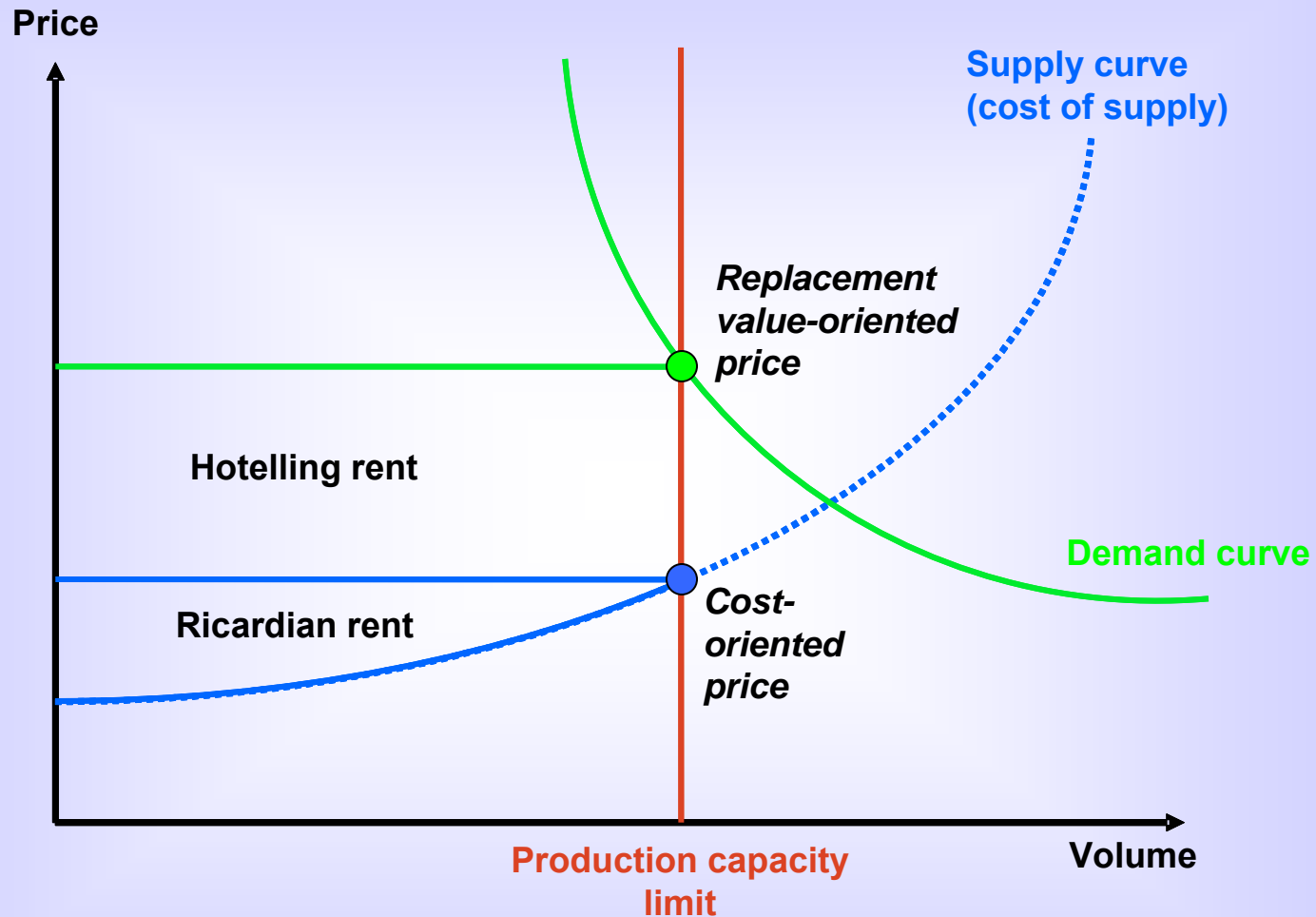
ENERGY CHARTER SECRETARIAT

CONTENTS:

1. Pricing of non-renewable energy resources: key elements of economic theory
2. Soviet / Russian gas to Europe: evolution of contractual structures
3. Russian gas for Ukraine & post-Soviet transformation of economic relations to market-based principles
4. Role of the Energy Charter

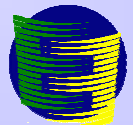


ENERGY PRICING: RICARDIAN VS. HOTELLING RENT



Source: "Putting a price on Energy: International Pricing Mechanisms for Oil and Gas", Energy Charter Secretariat, March 2007

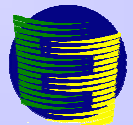
Dr. A. Konoplyanik, Ukrainian Energy Summit, London, 14.03.2007 – Figure 2



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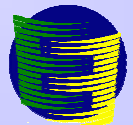
GAS EXPORT PRICING & PRICES

- **Resource price and resource rent for non-renewable energy:**
 - **Ricardian rent:** internal demand is *below* domestic production capacity limitations
 - **Hotelling rent:** internal demand is *above* domestic production capacity limitations
- **Pricing principles:**
 - **Cost-plus** => pricing at the internal domestic market of the producer *or* subsidized export pricing
 - **Replacement value** (costs of alternative energies) => in case when domestic production capacities are below internal demand for gas
 - **Net-back replacement value** = Replacement value netted back to an upstream point in the delivery chain (delivery point) => Dutch (Groningen) model of long-term export contract



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RUSSIAN GAS EXPORT TO EUROPE: ON-BORDER SALES AND TRANSIT LEGS

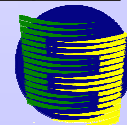
Map source
- IEA



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



Dr. A. Konoplyanik, Ukrainian Energy Summit, London, 14.03.2007 – Figure 4

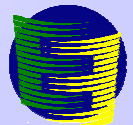


SOVIET / RUSSIAN GAS TO EUROPE: CONTRACTUAL STRUCTURE

- **Long-term contracts**
- **On-border EU (-15) sales / delivery points**
- **Pricing: netted-back from replacement value at the end-market (e.g. less cost of transportation from end-market to delivery point)**
- **Protection against arbitrage (destination clauses)**
- **Multiple transit**

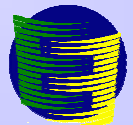
Soviet / Russian gas export contracts to the EU (historically), former COMECON (since after USSR dissolution) and FSU (since recently) are based (& to be based) on Groningen concept of long-term export contract

Historically existing structure of LTC – proved its validity & reliability through Cold War and post-Soviet transformation periods

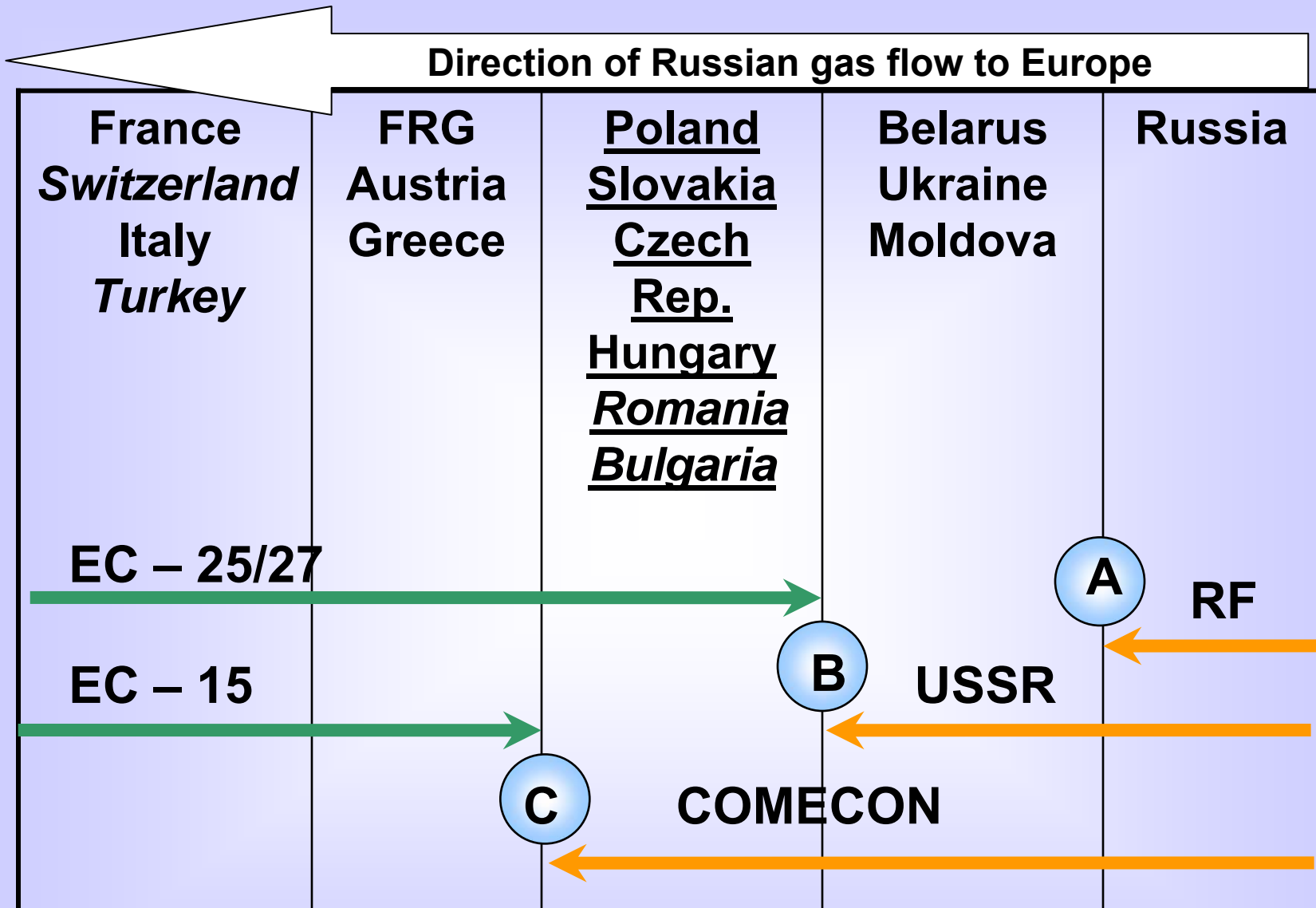


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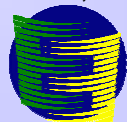
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RUSSIAN GAS SUPPLIES TO EUROPE: ZONES OF NEW RISKS

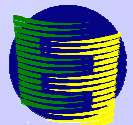


Italic – non-EU countries; New EU accession states: underlined – since 01.05.2004, underlined + italic – since 1.01.2007; A, B, C – points of change of ownership for Russian gas and/or pipeline on its way to Europe



SOVIET / RUSSIAN GAS SUPPLIES TO COMECON / CIS: **PRIOR TO** DISSOLUTION OF THE USSR

- Political & friendship pricing => subsidized (no resource rent) export pricing & prices
- Barter & quasi-barter deals
- Notional export prices => transfer of Hotelling rent from producer-state to consumer-state => sharing USSR resources (which are now mostly Russian resources) within USSR and with COMECON countries
- 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

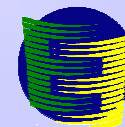
Long & painful transition to :

- **Contractual separation of transit & export supplies**
- **Formation of domestic transportation vs. transit legislation**
- **From barter to cash payments**
- **From political/subsidized to market-based pricing & prices:**
 - **Transit tariffs methodology**
 - **Market-oriented export pricing & prices**

Energy Charter role:
draft Transit Protocol + gas & transit-related activities => e.g. Transit tariffs study (Jan'06), Pricing study (March'07), etc.

Gas problems in post-Soviet area = result & long-term economic consequences of dissolution of USSR / COMECON political system = objective economic problems of transition period

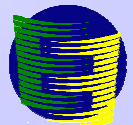
Dr. A. Konoplyanik, Ukrainian Energy Summit, London, 14.03.2007 – Figure 8



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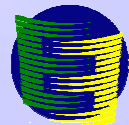
UKRAINE: EXPORT AND TRANSIT OF RUSSIAN GAS *PRIOR TO* 4 JANUARY 2006

- Export & transit are not contractually separated
- Quasi-barter deal
- Notional export prices & transit tariffs – to balance gas supplies to Ukraine
- Export pricing:
 - “cost-plus” – on the basis of the marginal costs (supply curve) for Russia,
- Who receive the resource rent:
 - Ricardian rent – producer / exporting state (Russia),
 - (part of) Hotelling rent – consumer / importing state (Ukraine) => ECT Art.18 ?

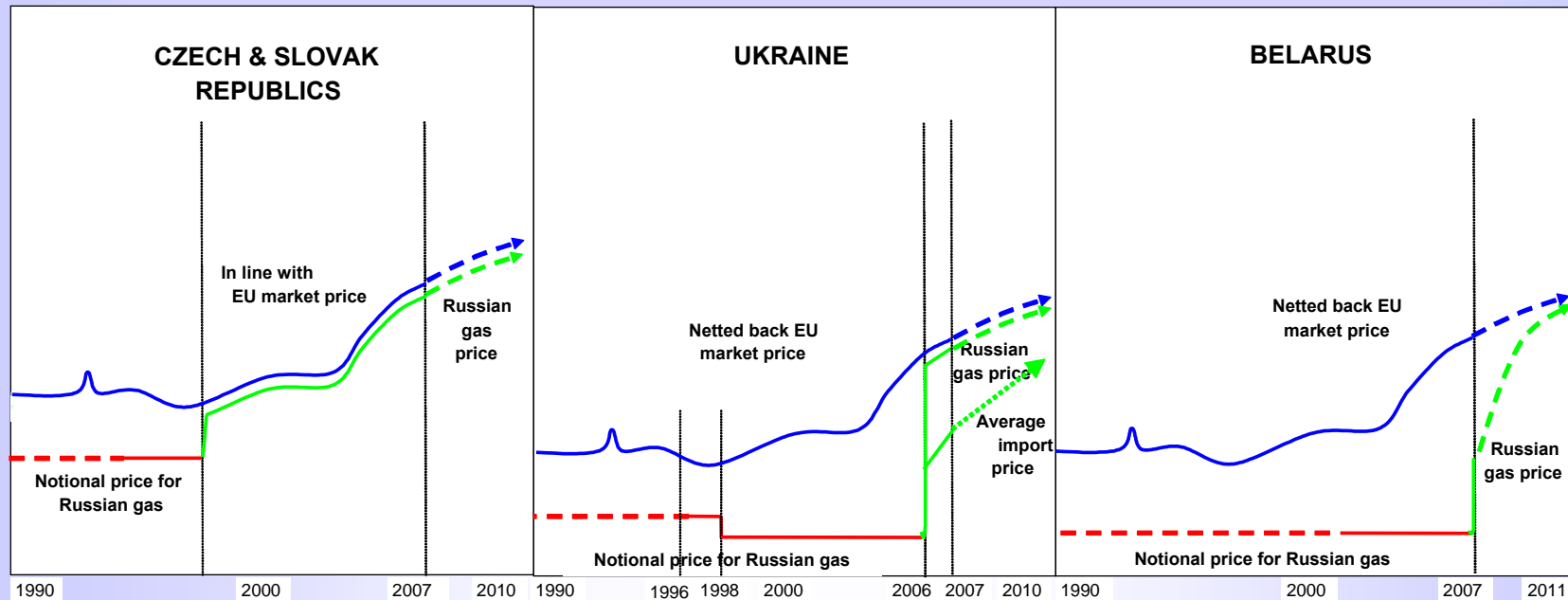


UKRAINE: EXPORT AND TRANSIT OF RUSSIAN GAS **AFTER** 4 JANUARY 2006

- Transit and export are contractually separated
- Cash payments
- Export price => average based on cocktail from two sources: Russia and Central Asia
- Export pricing:
 - for Russian gas: by net back (reverse) calculation => based on demand-curve => replacement value within EU netted-back (less transportation costs) to Russia-Ukraine border
 - for Central Asian gas: by direct calculation => based on supply curve => negotiated price at external border of exporter country plus transportation costs to Russia-Ukraine border
- Who receive the resource rent:
 - Ricardian rent & Hotelling rent – producer / exporting-state (Russia) => ECT Art.18 !

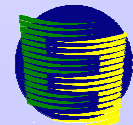


RUSSIAN GAS PRICES TO EU & COUNTRIES ALONG THE PIPE



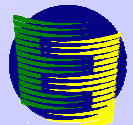
- Remarks:**
- 1- The figures are entirely for illustration purposes and, therefore, may not fully reflect the actual price levels and movements
 - 2- The illustration for "Netted back EU market prices" are based on the IEA's World Energy Outlook, 2006
 - 3- Estimates for future gas price movements beyond 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- Notional 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



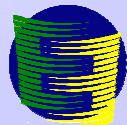
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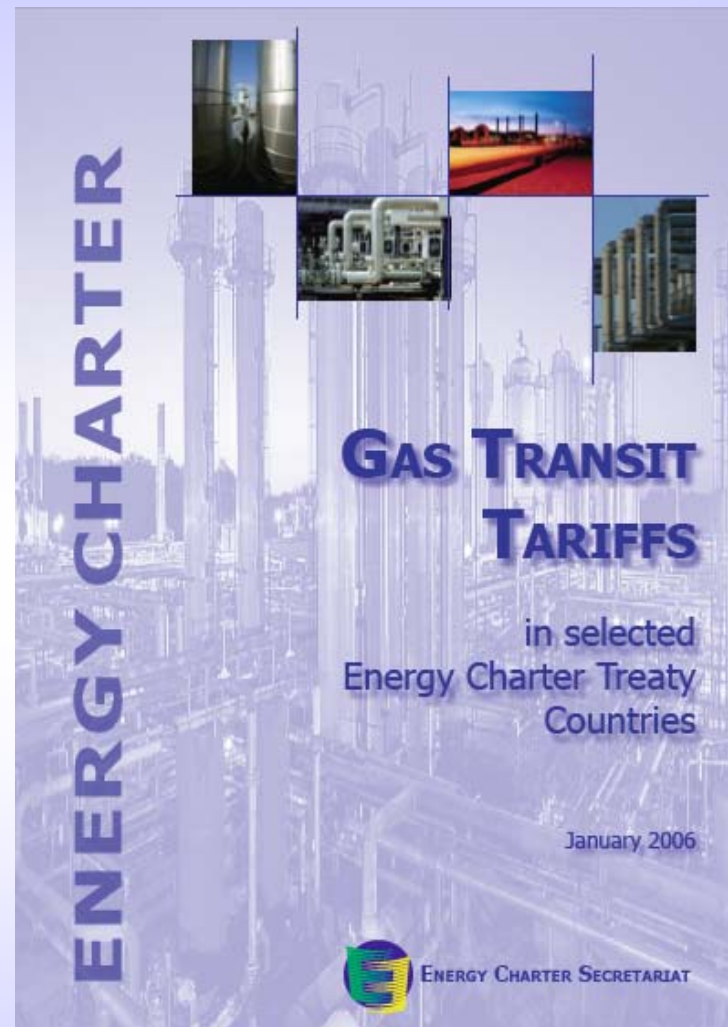


RUSSIA-UKRAINE COOPERATION IN GAS: ENERGY CHARTER ROLE

- **Large-scale supplies of Russian gas through Ukraine => historical background of reliable gas supplies to Europe & of mutually beneficial Russia-Ukraine cooperation in gas**
- **After USSR dissolution – inevitable & objective transition risks related to break-up of USSR / COMECON political system and switch to market-oriented export pricing on Russian gas with the states along Russian-fueled gas pipeline to Europe**
- **ECT and draft Transit Protocol = multilateral international law instruments to minimize such risks**
- **Transit component of Russia-Ukraine gas (2006), Russia-Belarus gas (2006) and oil (2007) disputes :**
 - **Parties involved appeal to spirit & letter of Energy Charter**
 - **ECS propose (& prepare) conciliatory procedure**
- **ECS surveys :**
 - **On international pricing mechanisms (fact-finding study + methodologies)**
 - **On transit tariffs (fact-finding + methodologies)**
 - **Other studies according to ECS POW**



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PUTTING A PRICE ON ENERGY

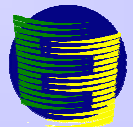
International
Pricing Mechanisms
for Oil and Gas



ENERGY CHARTER SECRETARIAT

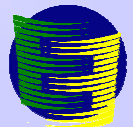
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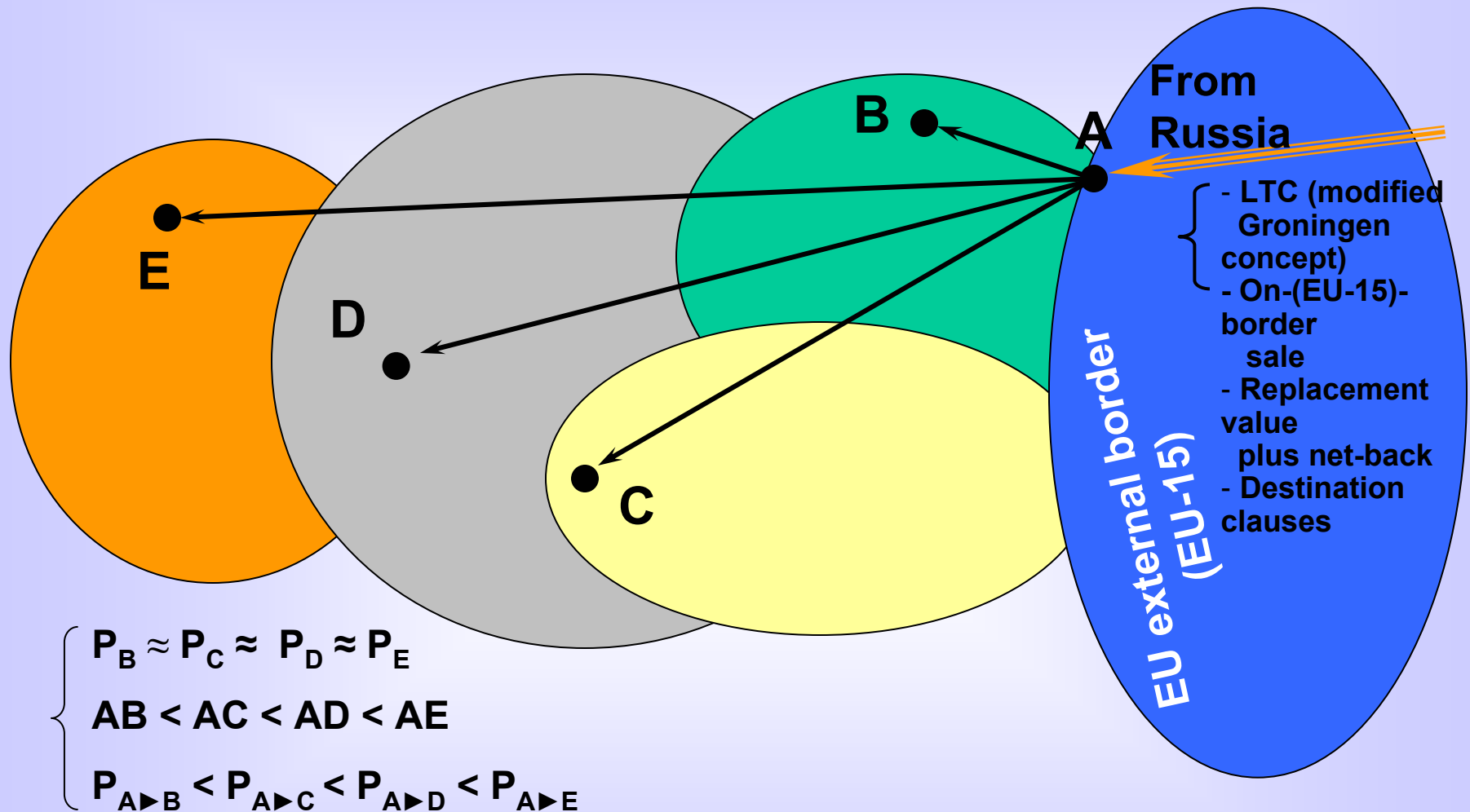


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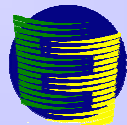
Back up slides



DESTINATION CLAUSES = ECONOMICALLY MOTIVATED INTEGRAL PART OF HISTORICALLY EXISTING RUSSIAN EXPORT SCHEMES TO EUROPE



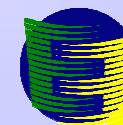
“Destination clauses” allowed gas supplier to sell gas to different buyers at different prices and other contractual terms at one and the same delivery point to protect its competitiveness at the end market (to prevent arbitrage by buyers).



IMPLEMENTATION OF THE ECT TRANSIT PROVISIONS

		Crude Oil	Natural Gas	
Legal/Regulatory	Non-discrimination / Transparency	Report on Crude Oil Transit (It, Aus, Ch, Cz, Slo, Pol, Lat, Lit, Hun, Tur, Cro, Bul, Rom, Bel, Ukr, RuF, Geo)	Domestic Gas Transport Legislation Reports (Cz, Slo, Pol, Bel, Ukr, RuF, Kaz)	
	Access to networks & tariffs			Report on Gas Transit (Aus, Bul, Rom, Ch, Tur, Geo, Uzb, Mol)
	Legal and regulatory framework for transit facilities			
Existing Pipelines	Legal/contractual arrangements	All reports available on www.encharter.org		
	Access to network	Oil Transit Tariff Report (published - Jan 2007)	Gas Transit Tariffs Report (published - Jan 2006)	
	Transit tariffication			
New Pipelines	Legal/contractual arrangements incl. relevance to the Energy Charter principles	Voluntary Presentations on New Cross-Border Pipeline Projects (e.g. oil and gas pipelines from Caspian and Central Asia to East and West, Pakistani pipeline projects, Turkish Straits oil pipeline by-pass options)		

It:Italy Aus:Austria Ch:Switzerland Cz:Czech Rep Slo:Slovakia Pol:Poland Lat:Latvia Lit:Lithuania Hun:Hungary Tur:Turkey
 Cro:Croatia Bul:Bulgaria Rom:Romania Bel:Belarus Ukr:Ukraine RuF:Russia Geo:Georgia Uzb:Uzbekistan Mol:Moldova



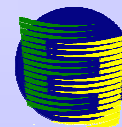
REPORTS ON NATURAL GAS AND CRUDE OIL TRANSIT

Objective - to increase transparency on compliance with the ECT transit principles :

- **Non-discrimination and Transparency**
- **Access to pipelines and transit tariffs**
- **Establishment of new transit capacity**

Recommendations:

- **Create more transparency for transit (access and tariffs, in particular)**
- **Consider all factors influencing transit**
- **Establish rules for new capacity development**
- **Cooperate for clear operational arrangements**
- **Separate transit from gas supply**



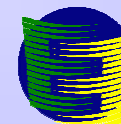
REPORT ON GAS TRANSIT TARIFFS

Main Findings:

- Large variations in Transit Tariff levels
- Transit Tariffs in non-EU countries substantially lower than most tariffs in the EU (the gap narrowed recently)
- Transit Tariffs higher than Domestic Tariffs
- Lack of transparency; many countries do not publish transit tariffs or underlying methodologies

Recommendations:

- “One size fits all” approach *not* possible
- The methodology chosen must ensure financial sustainability of the system and avoid excessive rate of return
- Most immediate challenge is to improve transparency of transit tariffs:
 - Clearer institutional set-up for transit
 - A one-stop-shop for all administrative issues
 - More transparent intergovernmental negotiations (at least advanced information/ early warnings)



INTERNATIONAL PRICING MECHANISMS FOR OIL AND GAS

Objective:

To provide an analytical framework of pricing mechanisms of cross-border trade of oil and gas

To be released
in March 2007

Scope:

Facts and analysis of present pricing mechanisms and their historic development under different:

- Contractual structures: Supply and demand-based pricing (cost-plus vs. replacement value/net-back and respective escalation formulas, commodities pricing)
- Energy commodities market structures (real time, forward, futures and options markets)
- Regional markets: gas - USA/Canada, UK, Continental Europe (based on Dutch exports), Russia/CIS/EU
- Pricing patterns (oil vs. gas, pipeline gas vs. LNG)

Recent developments in:

- International energy resource pricing mechanisms
- Contractual pricing arrangements (long-term & short-term contracts)

