“Россия и Центральная Азия: ценообразование на газ и альтернативные газовые маршруты”

А.А.Конопляник, д.э.н.,
Консультант правления, ОАО Газпромбанк,
Профессор, РГУ нефти и газа им. И.М.Губкина,
кафедра «Международный нефтегазовый бизнес»,
Москва, Россия

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“Современные рынки природного газа:
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Three key gas pricing mechanisms

- **Cost-plus (net-forward) pricing:**
  - Ricardian rent (long-term difference between costs & marginal costs => utilized at physical market)
- **(Net-back) replacement-value-based pricing:**
  - Ricardian rent *plus*
  - Hotelling rent (long-term difference between marginal cost & replacement value of competing fuel(s) => utilized at physical market)
- **Exchange (commodities) pricing (futures / options):**
  - Ricardian rent *plus*
  - Hotelling rent *plus/minus*
  - Windfall profits/losses (to cover short-term supply/demand imbalances; difference between supply/demand "equilibrium" price & replacement value => utilized at paper market)
    - UK 2007: while contractual price at physical gas market in Cont.Europe 350 USD/mcm, UK spot price fluctuate in between 1000+USD/mcm & negative prices (less 0 USD/mcm)

Non-renewable energy pricing: economic & legal background

- Resource owning state: to maximize long-term resource rent => sell gas to export market with highest replacement value (USSR/Russia => EU)
  - Economic: Groningen concept of LTGEC (1962) = long-term contract + pricing formula linked to gas replacement values (prices of replacement fuels) + price review (+ net-back to delivery point)
  - Legal: UNGA Res.1803 (1962) + ECT Art.18 (1994/98) = state sovereignty on natural/energy resources
  - => Sovereign right of exporter/resource-owning state to give or not to give to importer politically-motivated economic concessions in form of discounted export pricing/prices (to share its resource rent with foreign state)
- Cost-plus-based instead of replacement-value-based export pricing = *political* export pricing => USSR-COMECON up to end-1980-s, Russia-Ukraine 1992-2006, Centr.Asia-Russia-Ukraine 1992-2009...

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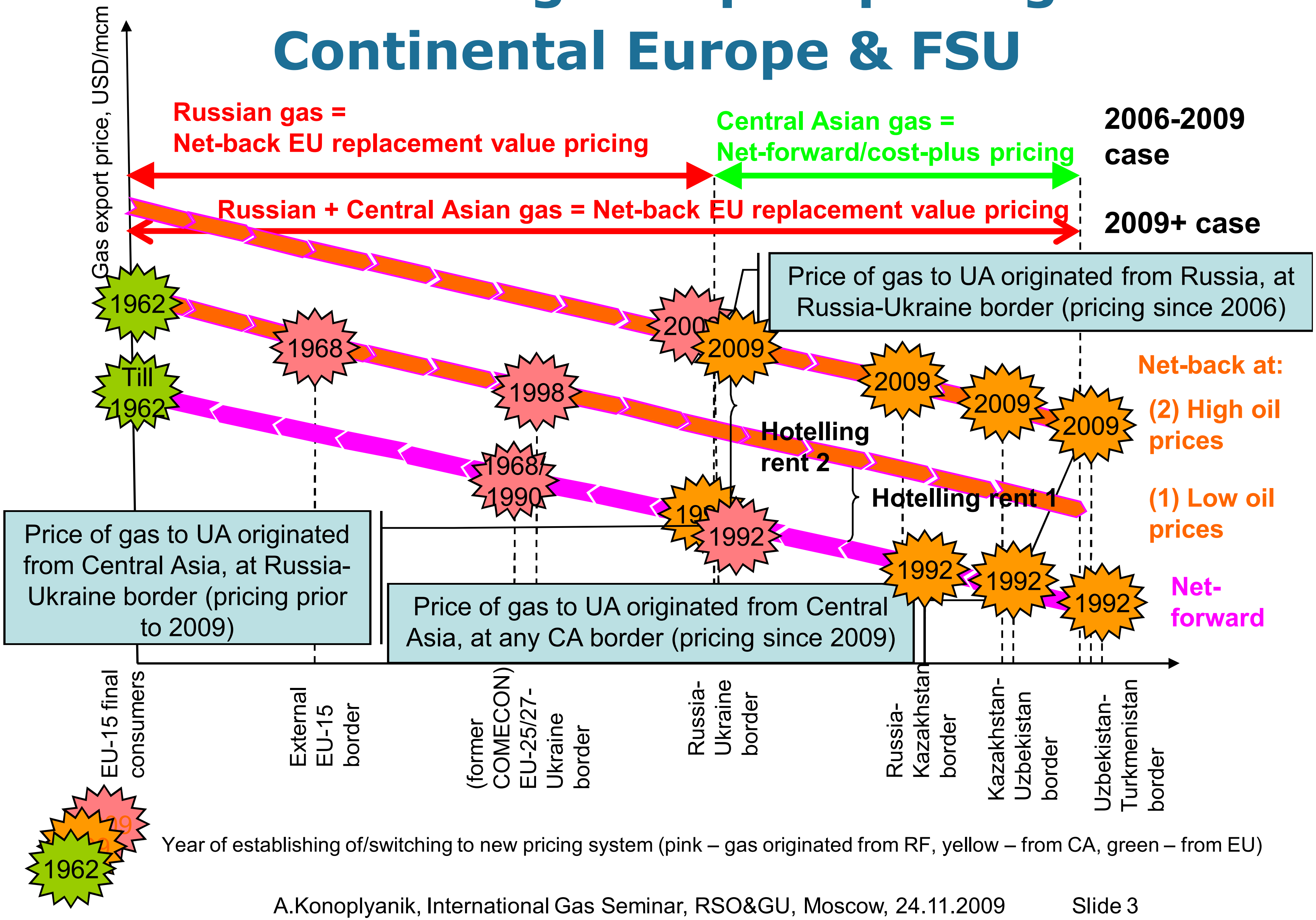
- Non-renewable energy pricing: economic & legal background
- Evolution of gas export pricing in Continental Europe & FSU
- Russia-Ukraine-Central Asia: Central Asian inter-CIS pricing options
- Changing Central Asian gas pricing & export priorities
  - Worldwide-oriented
  - Westward-oriented

Evolution of gas export pricing in Continental Europe & FSU



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Central Asian inter-CIS alternative (1)

- To sell its gas directly to Ukraine:
  - During 2005-2006 Russia-Ukraine gas dispute Ukraine was arguing for gas import price calculation on the basis of gas replacement value within Ukrainian domestic market, which is much lower that within EU market =>
  - If Ukraine to follow consistent policy regarding import gas pricing, it is to present the same pricing principles to Central Asian gas exporting states as well,
  - Export gas price at external border of Central Asian exporter, if calculated as net-back replacement value at the domestic Ukrainian market, will be relatively low

Central Asian inter-CIS alternative (2)

- To sell its gas to Ukraine via Russia:
  - Russia agreed to buy Central Asian gas at their external borders at the price calculated as net-back replacement value at the EU market =>
  - Export price at external border of Central Asian exporter would be relatively high – higher then according to Ukrainian scenario (previous slide)

  \+

  - Russia contracted (booked) all export volumes of Central Asian gas and took all costs and risks of its transportation to the end-use markets

Central Asian inter-CIS alternative (3)

- Central Asian gas exporting states are willing to receive maximum Hotelling rent & to minimize export costs & risks =>
- It is more profitable for them to sell their gas to Russia at their external borders at the price, linked to gas replacement value at the EU market (maximization of Hotelling rent), with further Westward transportation of their gas by Gasprom (exclusion of risks & costs of transit), - compared to other options

Central Asian inter-CIS alternative (4)

(New debate on direct sales of Turkmen gas to Ukraine since 2010)

- Turkmenistan seeks for highest possible export border price, Russia proposes & contracted such ECONOMIC price on Turkmen border since 2009,
- If Ukraine would like to over-bid Russian price of Turkmen gas, this would be POLITICAL Ukrainian price (economic Russian price plus political premium) = deviation from market-oriented Russia-Ukraine post-2006 developments in gas,
- In this case Russia is in no case obliged to present its transit capacities for Turkmen (Ukrainian) gas (even if Russia would not have withdrawn from provisional application of the ECT) =>
- No possibilities for direct Turkmen sales to Ukraine

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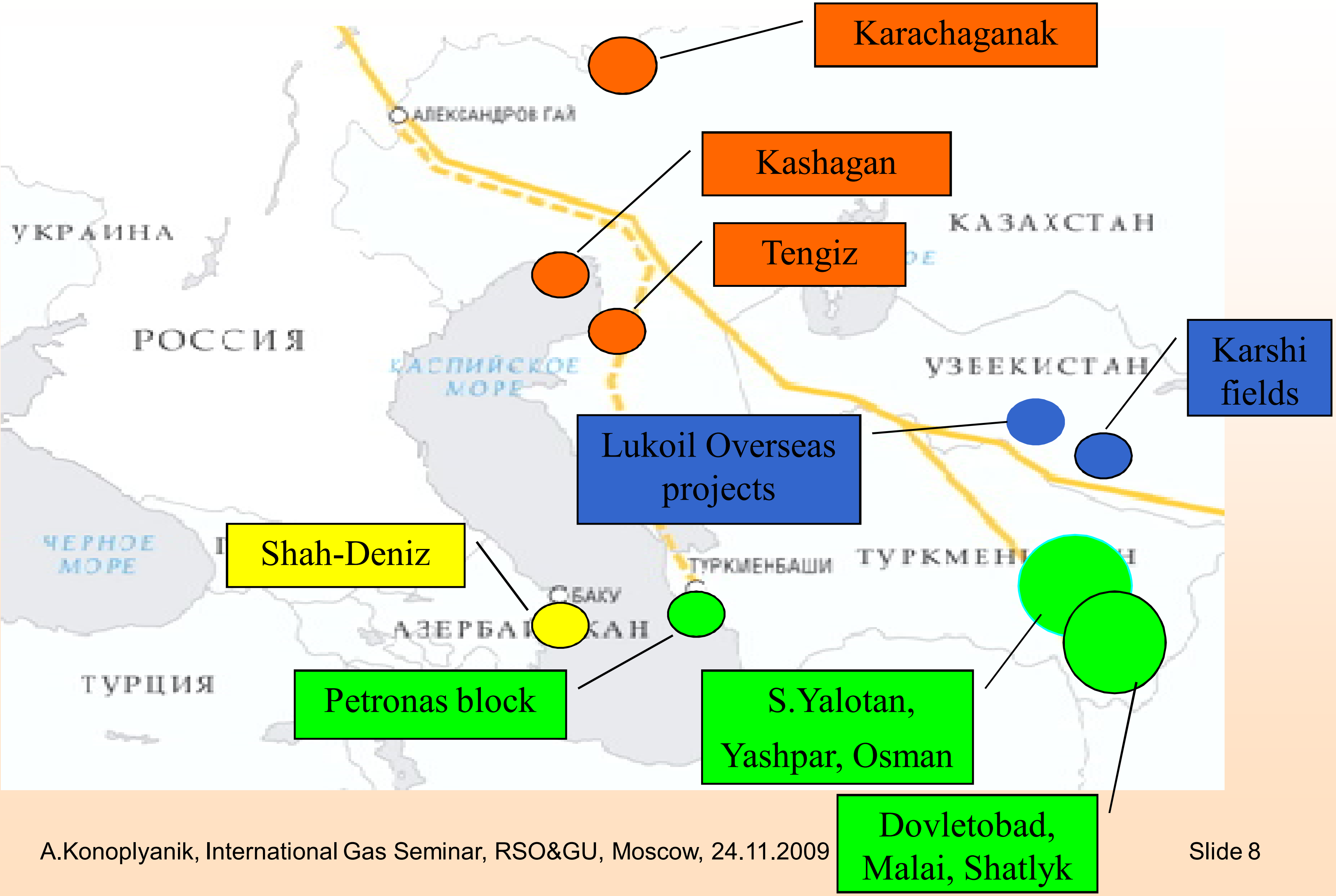
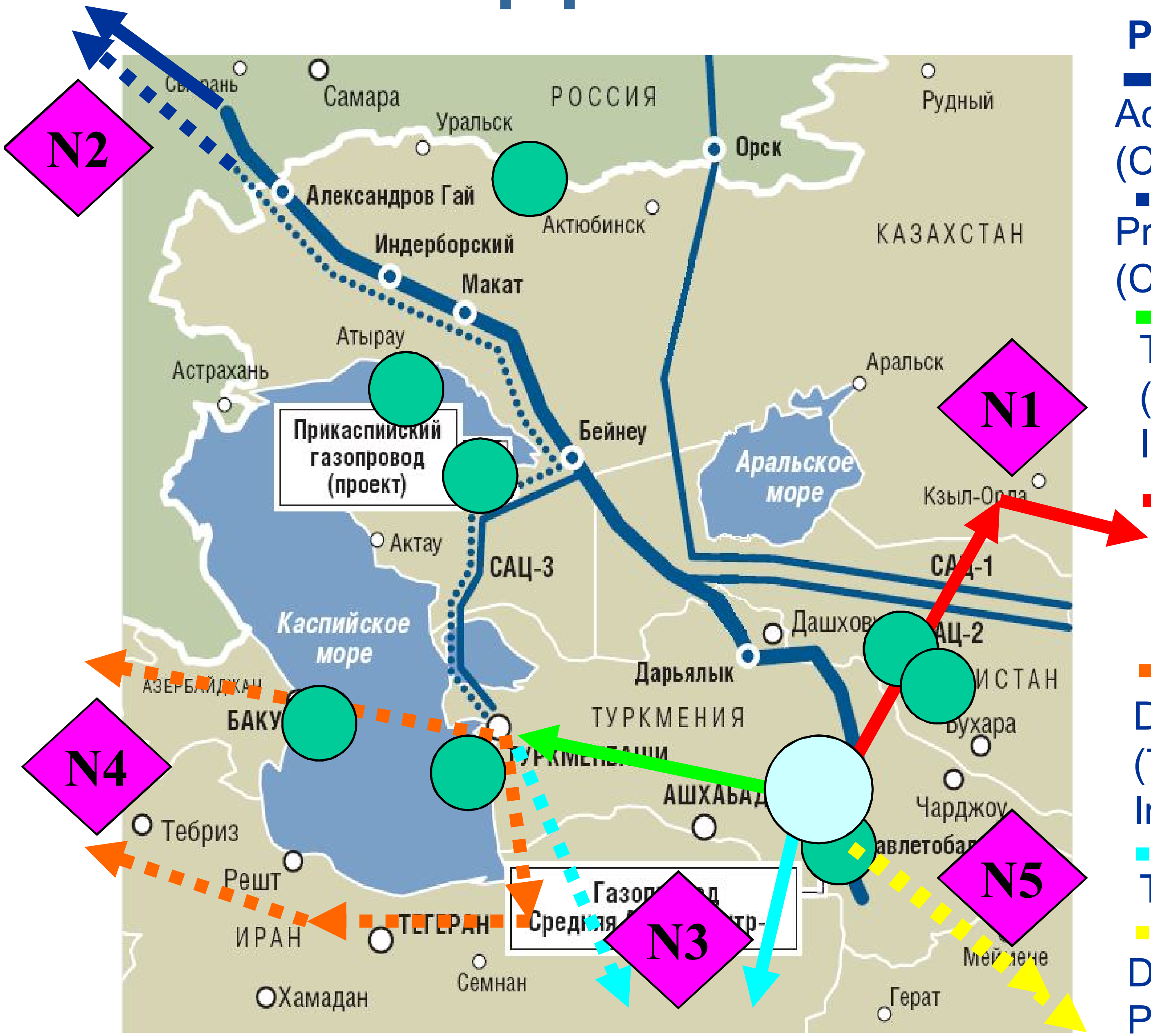
Major Central Asian gas areas



Central Asia gas export potential

State	2009 export, BCM	Max export potential, BCM	
Turkmenistan	<50 (?)	110-115	S.Yalotan up to 75 BCM; 15-20 BCM offshore
Uzbekistan	15	40-45	Up to 15 BCM Lukoil Overseas & to 10-15 Karshi
Kazakhstan	11	32	Mostly due to Kashagan, Tengiz & Karachaganak
Azerbaijan	8	15-20	Mostly due to production increase at Shah-Deniz

Alternative pipelines from Turkmenistan



Pipelines:

Acting via Russia (CAC 1-4) to Europe

Pre-Caspian to Russia (CAC-3) to be expanded

To be constructed (East-West Turkmen Interconnector)

Being constructed to China (via Uzbekistan and Kazakhstan)

Discussed to Europe (Trans-Caspian and via Iran)

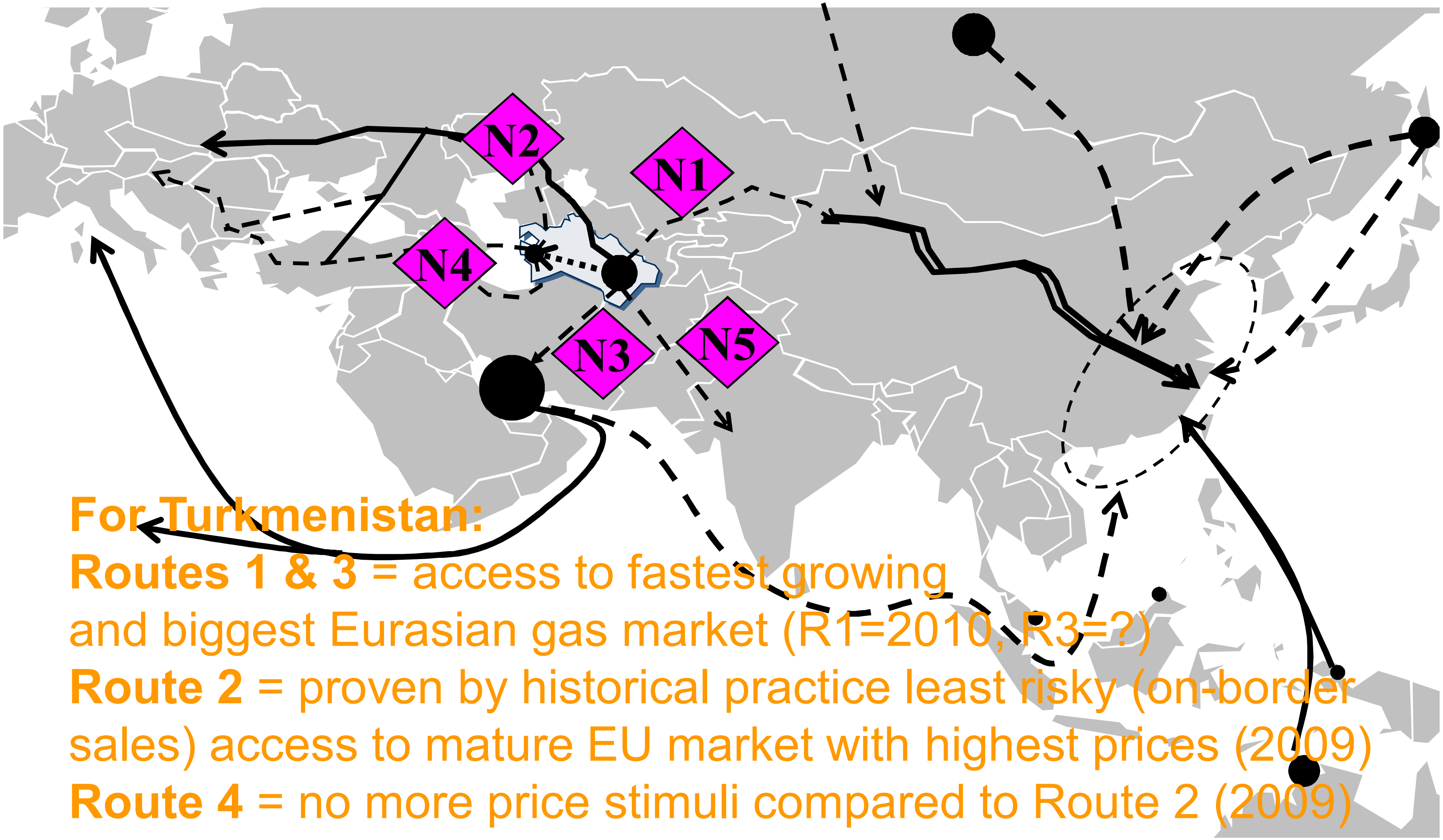
To Iran

Discussed to India-Pakistan via Afghanistan

Turkmenistan: 5 export options

N	Pipeline	Capacity	
1	To China	Up to 30 BCM/y	Start operation 2010; 100% financing by China
2	Via Russia Westward	42.5+30 BCM/y	Current volume + pre-Caspian (expansion CAC-3)
3	By-passing Russia to EU	Up to 31 BCM/y+	Nabucco etc; connection either via trans-Caspian or via Iran
4	To Iran	Up to 14 BCM/y	Currently 8
5	To India-Pakistan via Afghanistan	Up to 20 BCM/y	Highly speculative due to high transit risks & political instability

Central Asian Gas at Competitive Eurasian markets



For Turkmenistan:

Routes 1 & 3 = access to fastest growing and biggest Eurasian gas market (R1=2010, R3=?)

Route 2 = proven by historical practice least risky (on-border sales) access to mature EU market with highest prices (2009)

Route 4 = no more price stimuli compared to Route 2 (2009)

Route 5 = most risky & unpredictable

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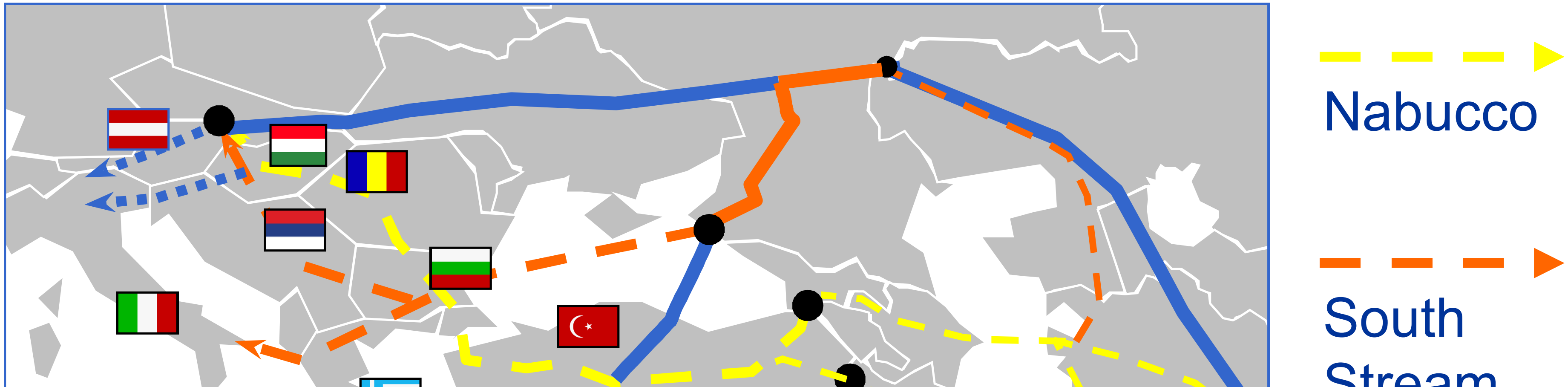
South Stream and Nabucco



Nabucco:

- Best available procedure re access to capacity in place, *but*
- Still no shipping contracts and/or proved reserves (PR: except Azerb.? Iraq?) committed to deliveries via Nabucco, *plus*
- Competition with other pipelines for gas of Shah-Deniz-II, *plus*
- No go for Trans-Caspian (delimitation) and via Iran (US embargo + conflict of interests) pipelines + concerns re Turkey transit
- EU structures ready to finance at minimum pre-investment stages, *but*
- No dedication from private investors to invest until supplies are contracted and LTGECs are signed, *but* pipelines economics can matter

Changing Central Asian gas pricing & export priorities: prior to 2009

- Central Asian gas exporters long-term interest:
  - to receive max market-based gas export price at their external borders => to exclude transit costs & risks
- Prior to 2009:
  - CA gas export pricing = 'cost-plus-plus' at CA external border = much lower than netted-back 'EU replacement value '=> large Hotelling rent => fight for Hotelling rent
  - EU companies interested to utilize Hotelling rent by direct purchases of CA gas at CA external borders & further reselling it at EU market => EU fight for bringing CA gas to EU market by:
    - First, transit through Russia (fight for access to Gazprom pipelines at domestic Russian tariffs => long debate within Energy Charter to use ECT as a vehicle) => when failed =>
    - Then, building alternative pipelines by-passing Russia => Hotelling rent will prove huge CAPEX needed => NABUCCO, etc.

Changing Central Asian gas pricing & export priorities: since 2009

- Central Asian gas exporters long-term interest:
  - to receive max market-based gas export price at their external borders => to exclude transit costs & risks
- Since January 1, 2009:
  - CA gas export pricing = 'EU replacement value' netted-back to CA external border =>
  - No further direct economic stimuli (no price rent) for EU companies to fight for direct purchases of CA gas =>
  - EU came down in export priorities of CA gas exporters
  - *but*: if better pipeline project economics, then low gas transportation tariffs with RRR for pipeline investors=> higher net-back replacement value price for CA exporters possible,
  - but: legal & political obstacles for CA gas to go Westwards by-passing Russia (trans-Caspian & via Iran) =>
  - CA gas for China & Russia?

Thank you for your attention !

www.konoplyanik.ru
andrey.konoplyanik@gpb-ngs.ru