



# Finding Petroleum Conference

## Exploration in the post-Macondo world

### Russia – Problems and Opportunities

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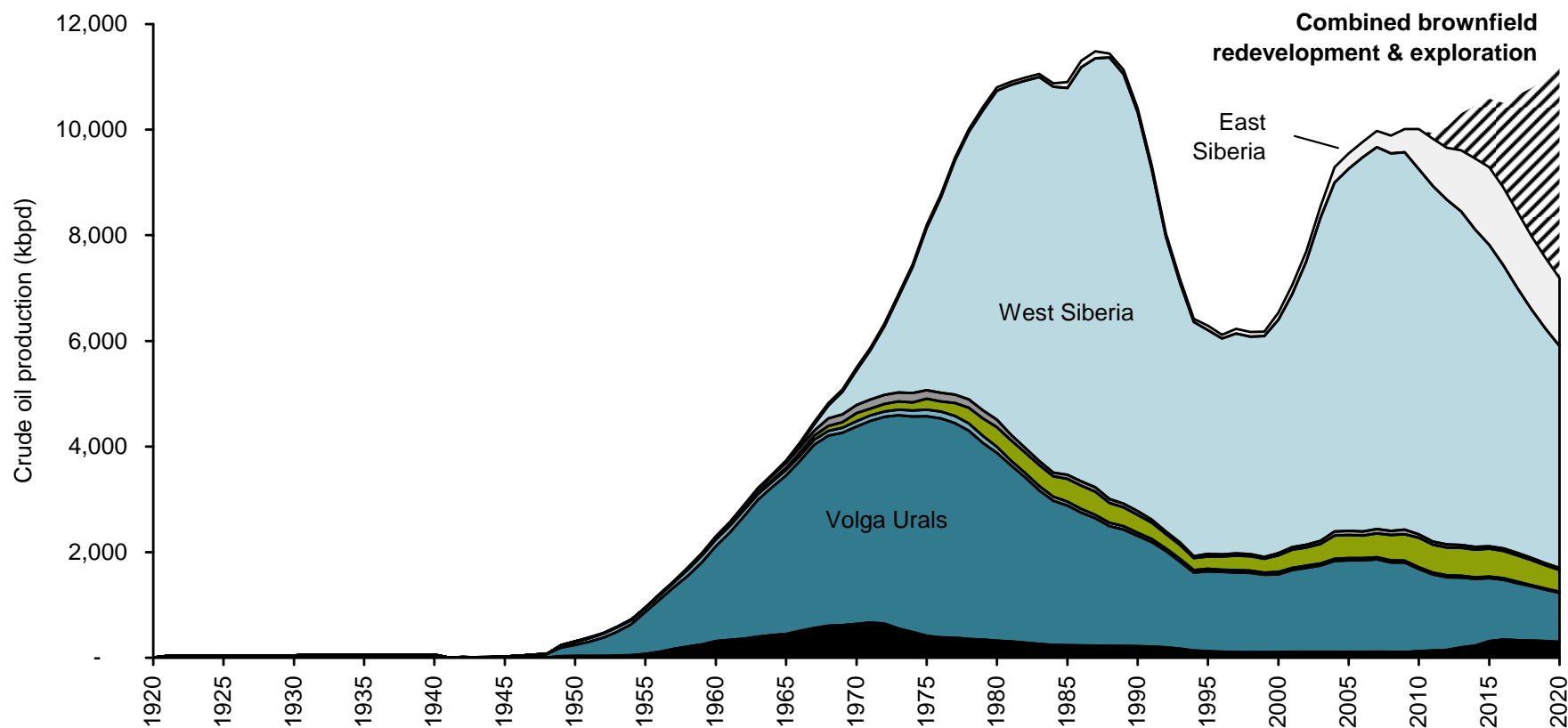
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# Long view on Russian oil production – the exploration challenge

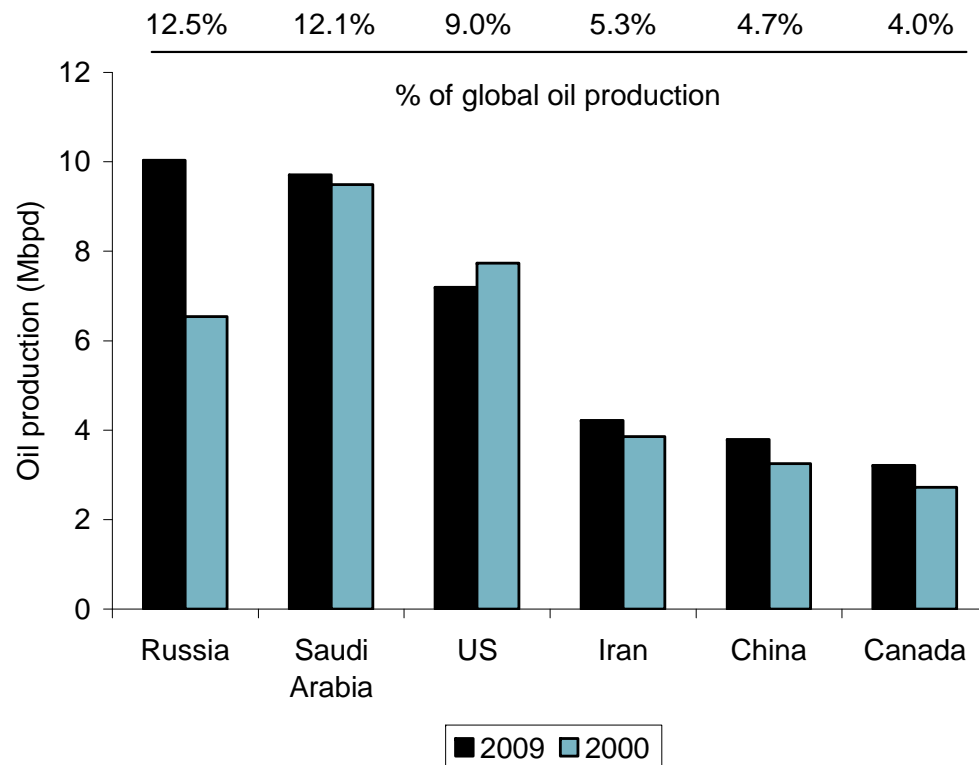


Source: Company reports, IHS and Bernstein estimates

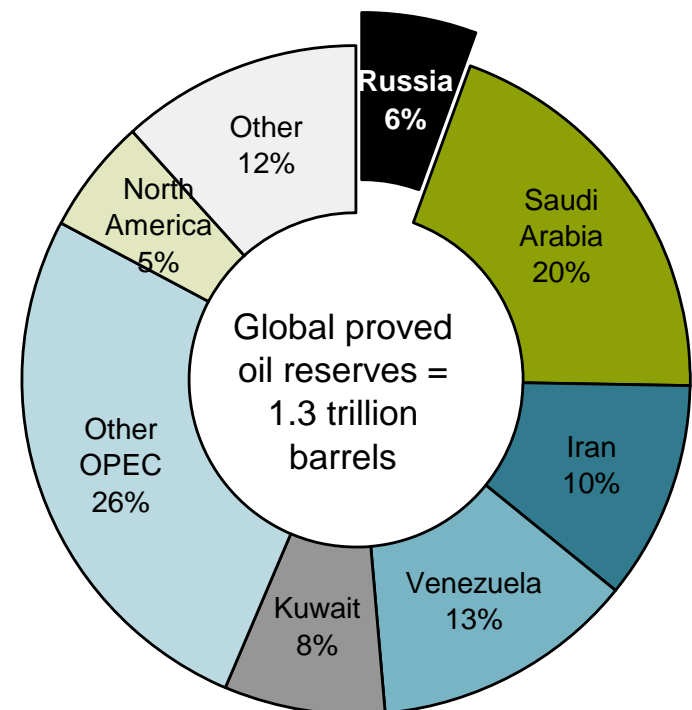
# Why Russia still matters: the world's No.1 oil producer

- During 2000-2009, the cumulative increase in Russian oil production represented 43% of total growth in non-OECD crude output
- In the context of global oil supply, these additional 3.5Mbpd represent the equivalent of Canada (3.2Mbpd)

World's leading oil producers, 2000 and 2009



Distribution of world's proved oil reserves (2009)

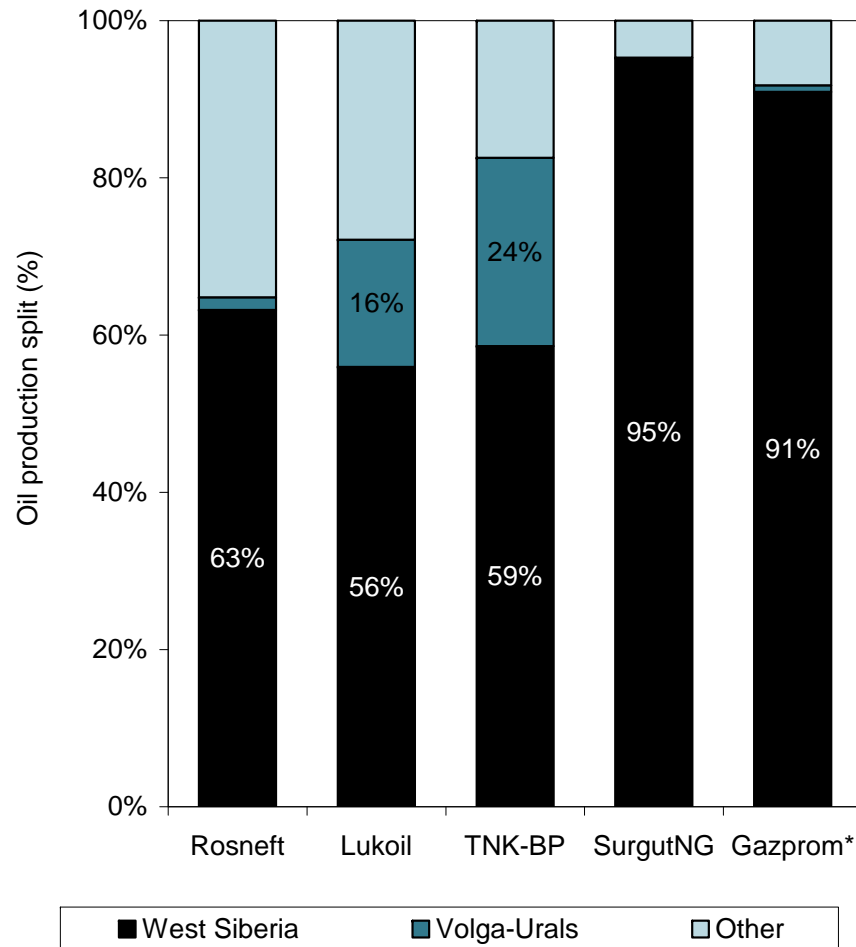


Source: BP Statistical Review

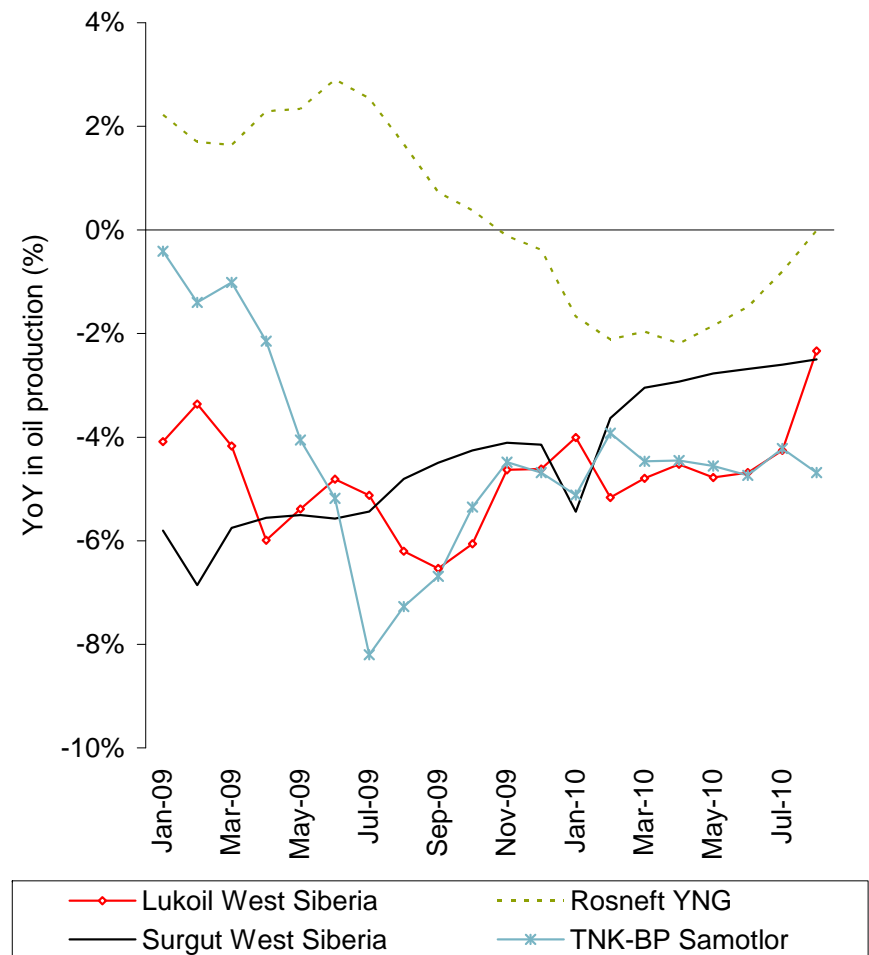
# Mature West Siberian fields declining at 4-6%

■ West Siberia and Volga-Urals combined represent >80% of Russia's oil production

Oil production breakdown by region (2009)



Year-on-year decline rates across W Siberian assets



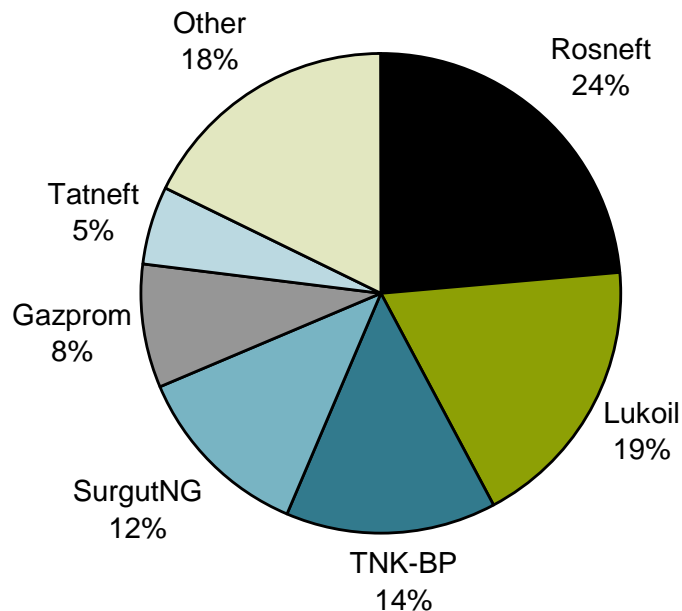
Source: Company reports, Neftecompass and Bernstein estimates

\*Includes Gazprom Neft

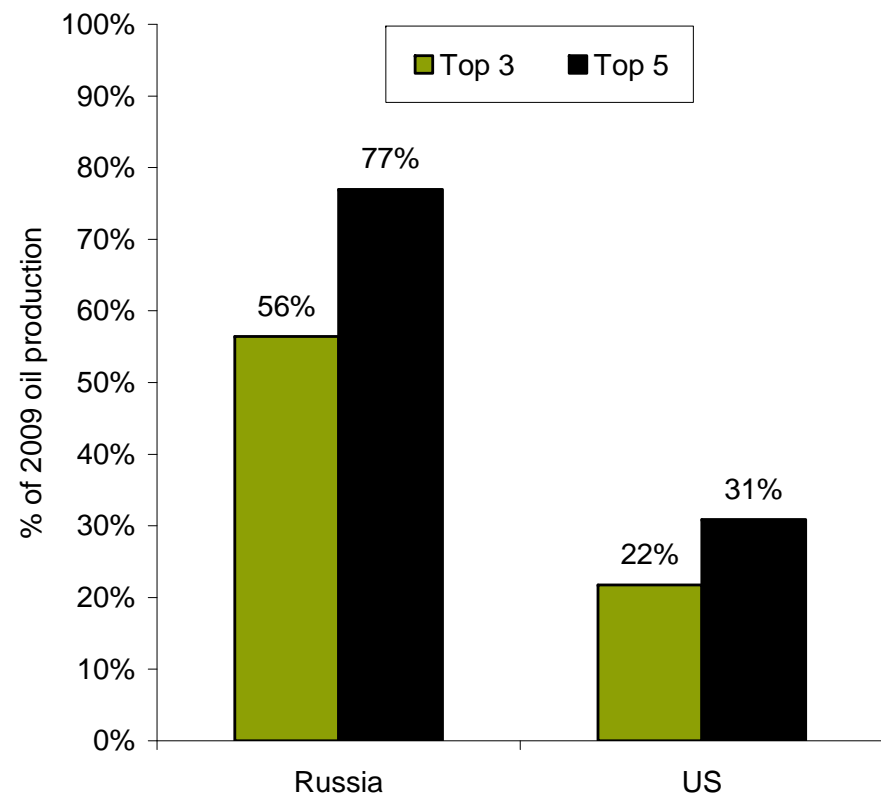
# Very high degree of concentration in Russian upstream

- Following the 2000-2006 wave of mega-mergers, the Russian oil industry became highly concentrated with Top 5 players controlling close to 80% of upstream production
- The North American E&P model is largely non-existent in Russia

Russian oil production split, by company (2009)



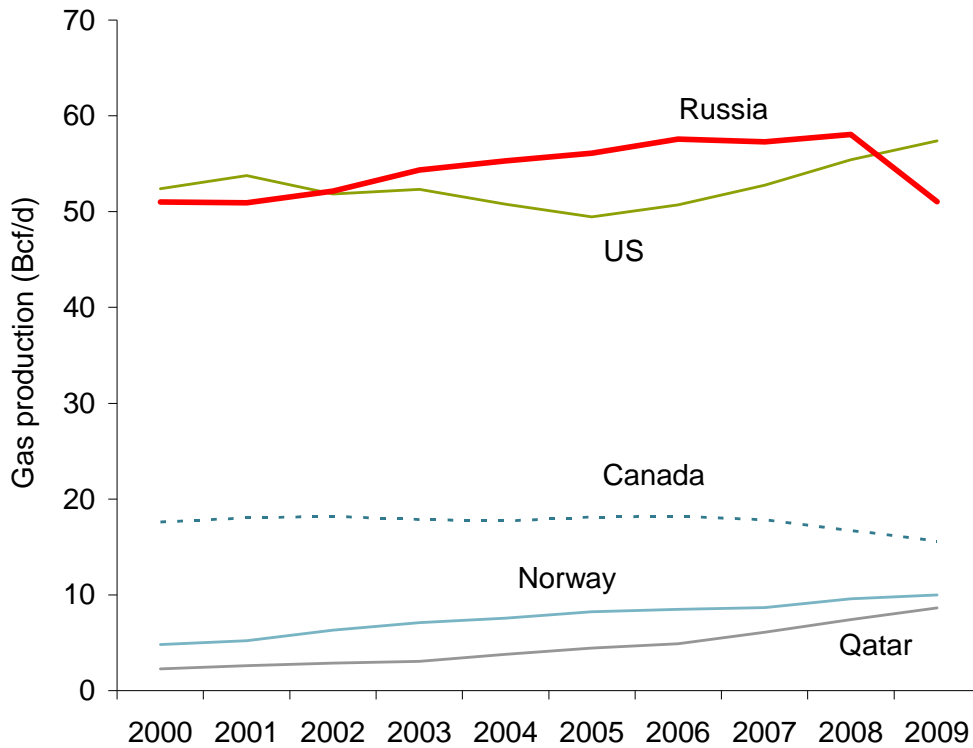
Upstream concentration in Russia and US (2009)



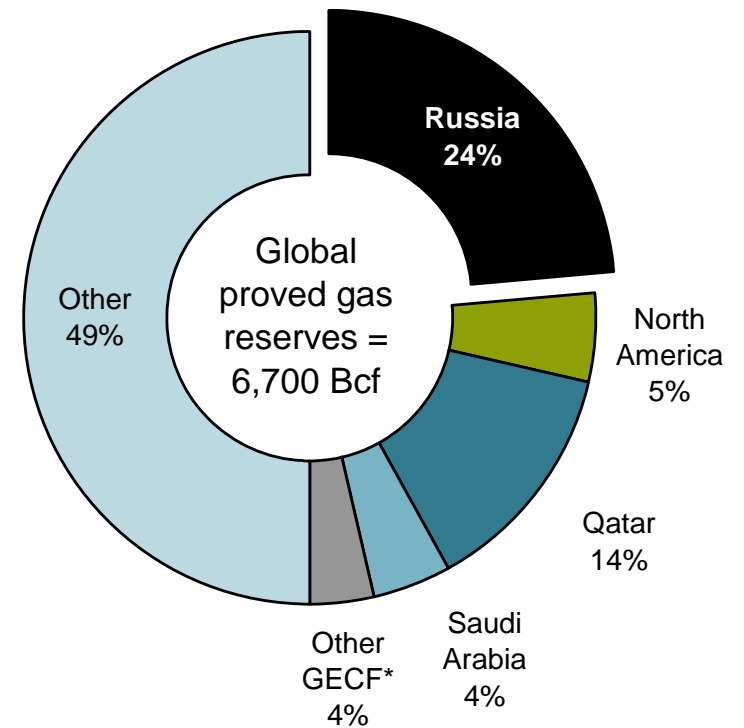
Source: Company reports and BP Statistical Review

# ...Russia is also No.2 in natural gas

World's biggest natural gas producers, 2000-2009



Distribution of world's proved gas reserves, 2009



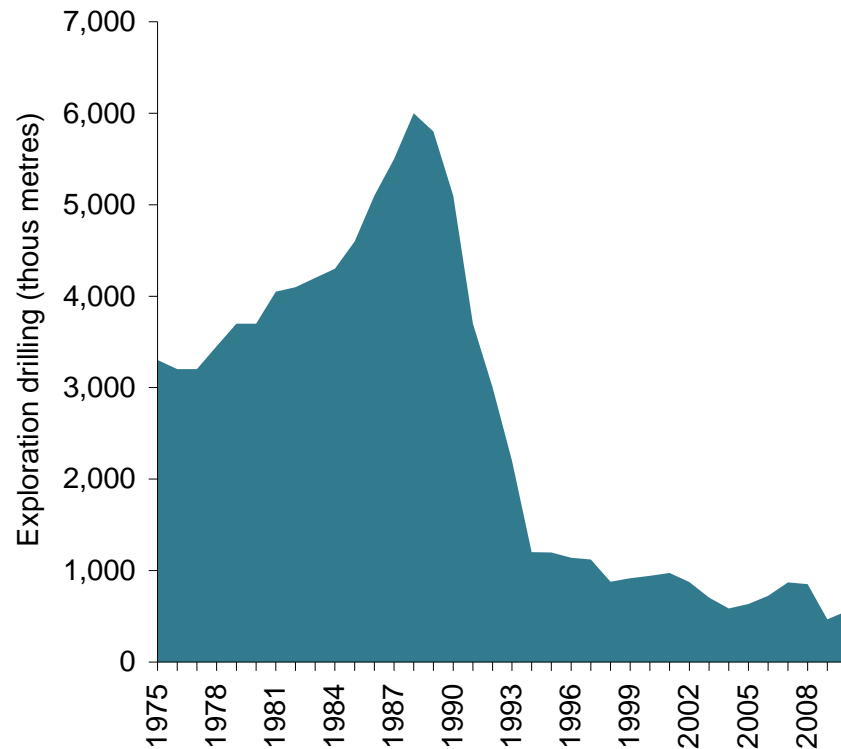
Source: BP Statistical Review \*GECF = Gas Exporting Countries' Forum

**What can Russia do to maintain and grow production?**

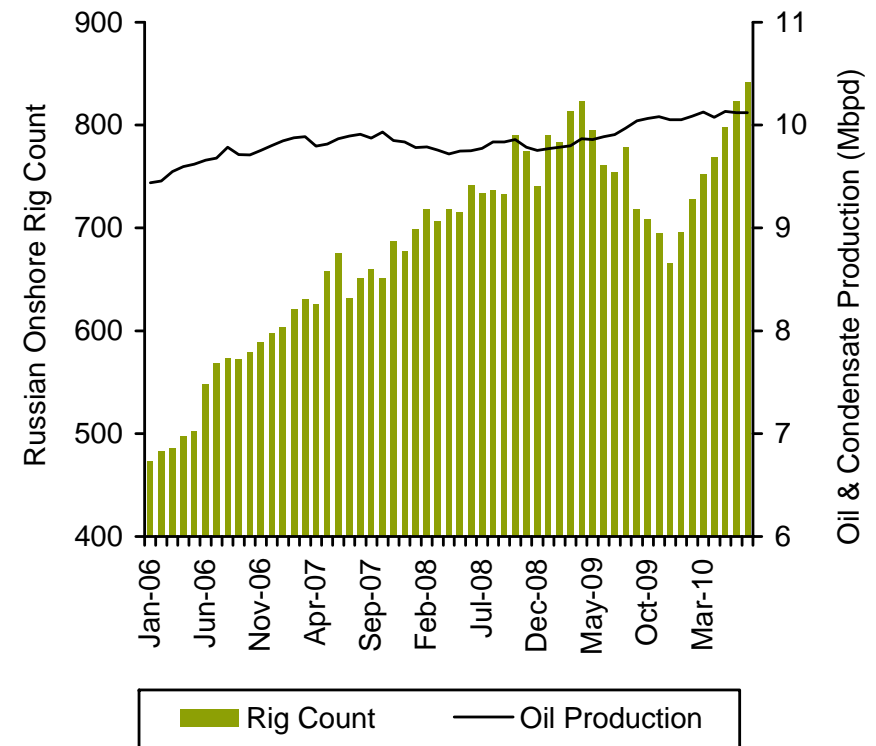
# Option #1 – Go forth and explore?

- Exploration activity in Russia collapsed in the early 1990s, and even today it remains very low compared to historic levels
- The doubling in Russian rig count over the last 5 years has not caused a material uplift in oil production

Exploration drilling in Russia since 1975



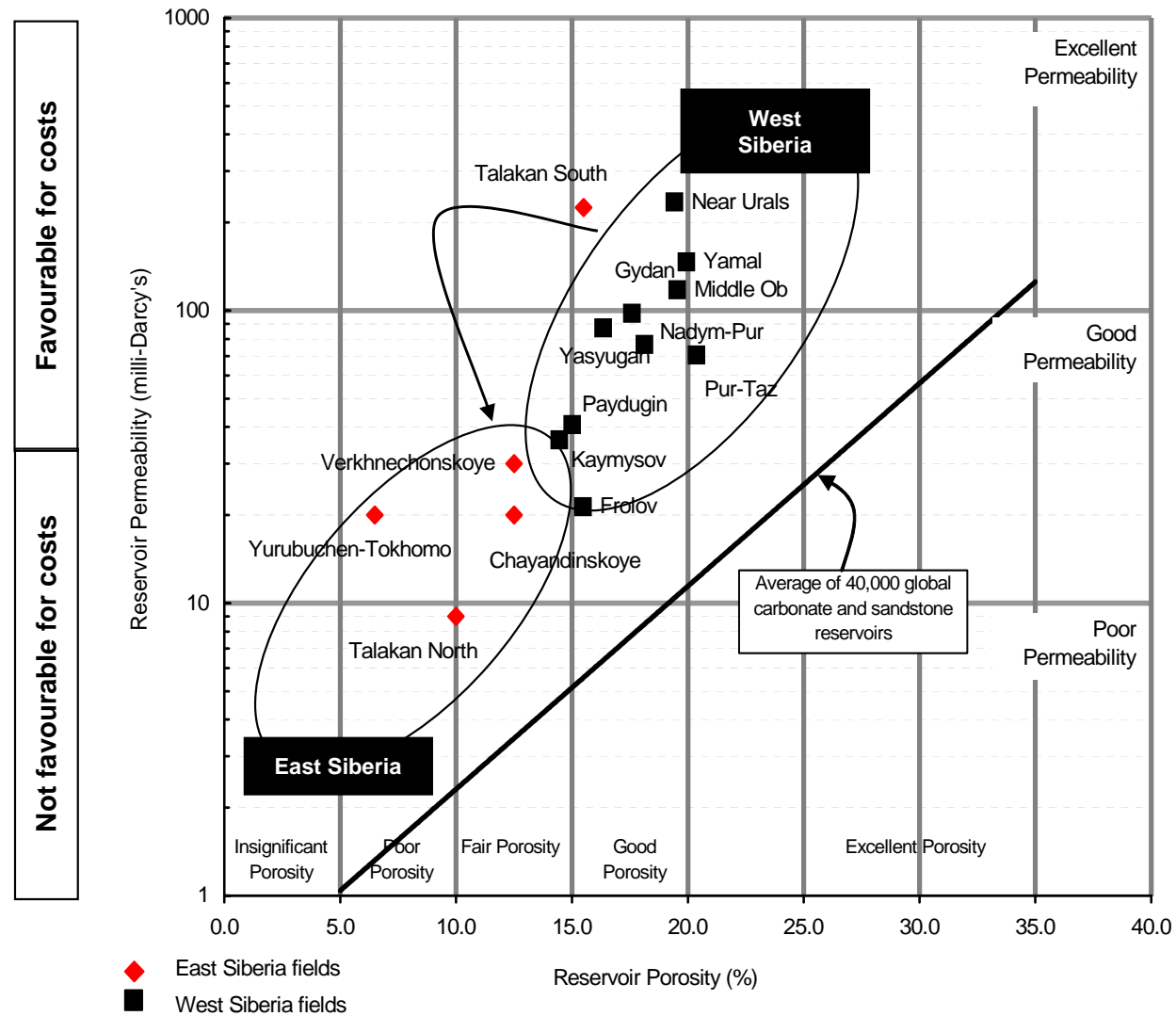
Schlumberger Russian rig count



Source: CDU-TEK, Interfax, Schlumberger, Zarubezhneft and Bernstein estimates

# What about East Siberia? Looks different from West Siberia (I)

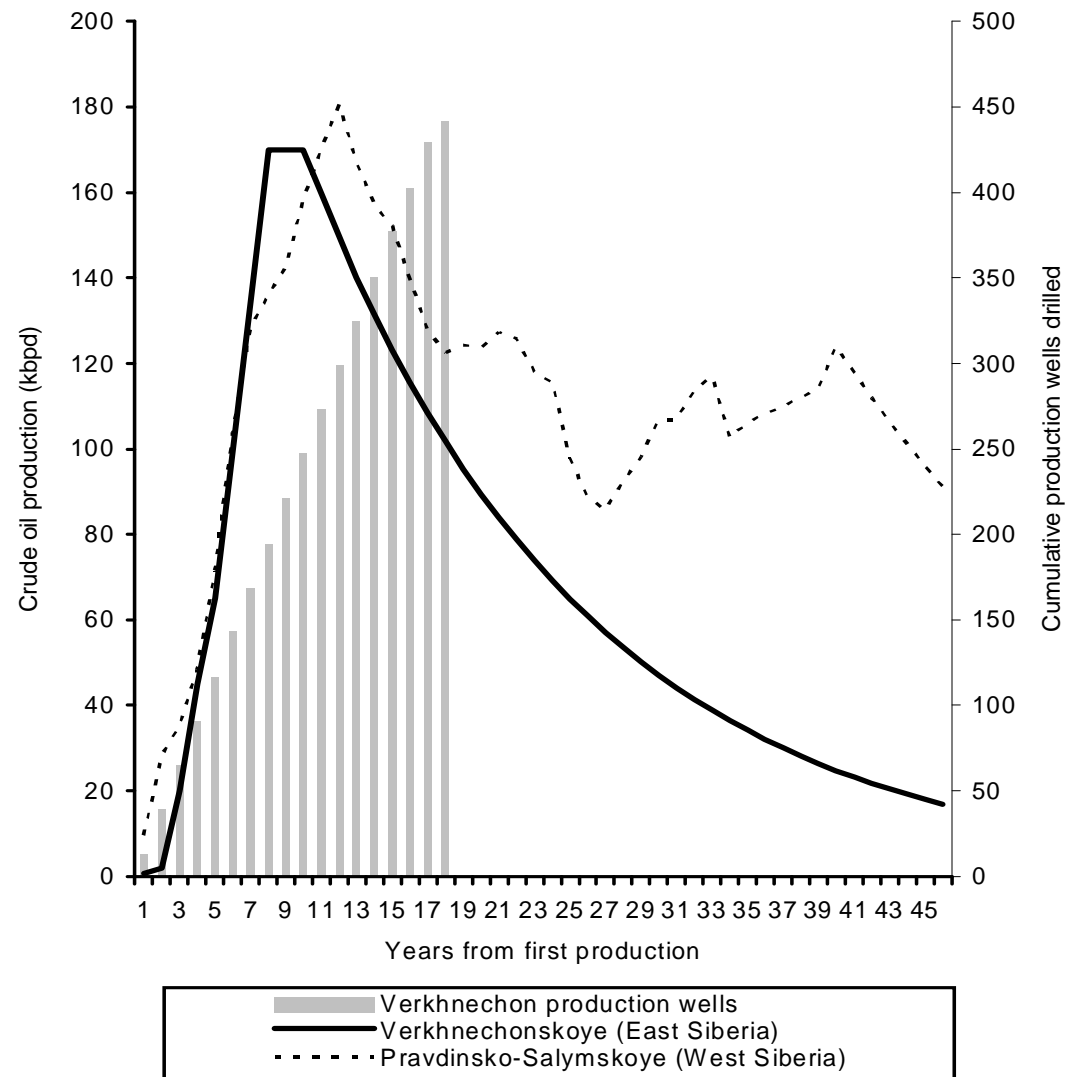
- Reservoir permeability in East Siberia could be lower by an order of magnitude and porosities lower by half relative to West Siberia



Source: Company reports, USGS and Bernstein estimates

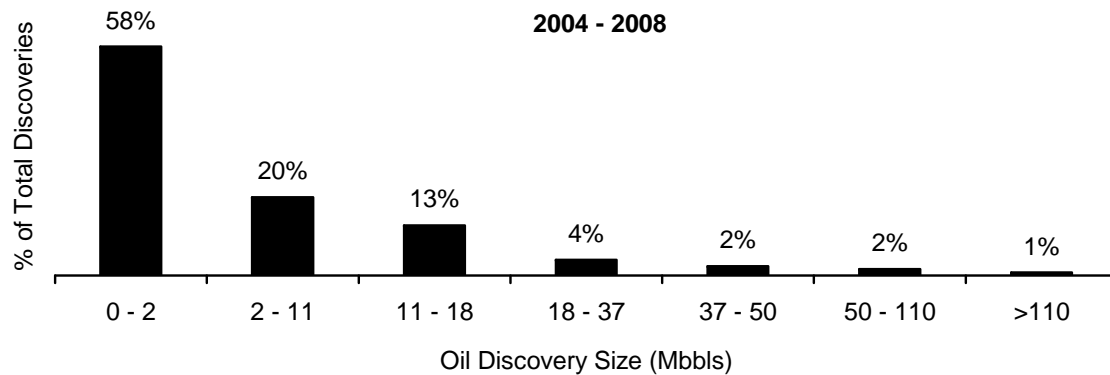
# What about East Siberia? Looks different from West Siberia (II)

- Ramp-up rates for the East Siberian fields are much slower compared to typical fields in West Siberia and we see risk of disappointment
- Verkhnechonskoye development plan aims for 170kbpd production with 200 wells drilled
- Compare this to Tullow's offshore Jubilee field which targets plateau production level of 120kbpd with just 9 wells



Source: Company reports and Bernstein estimates

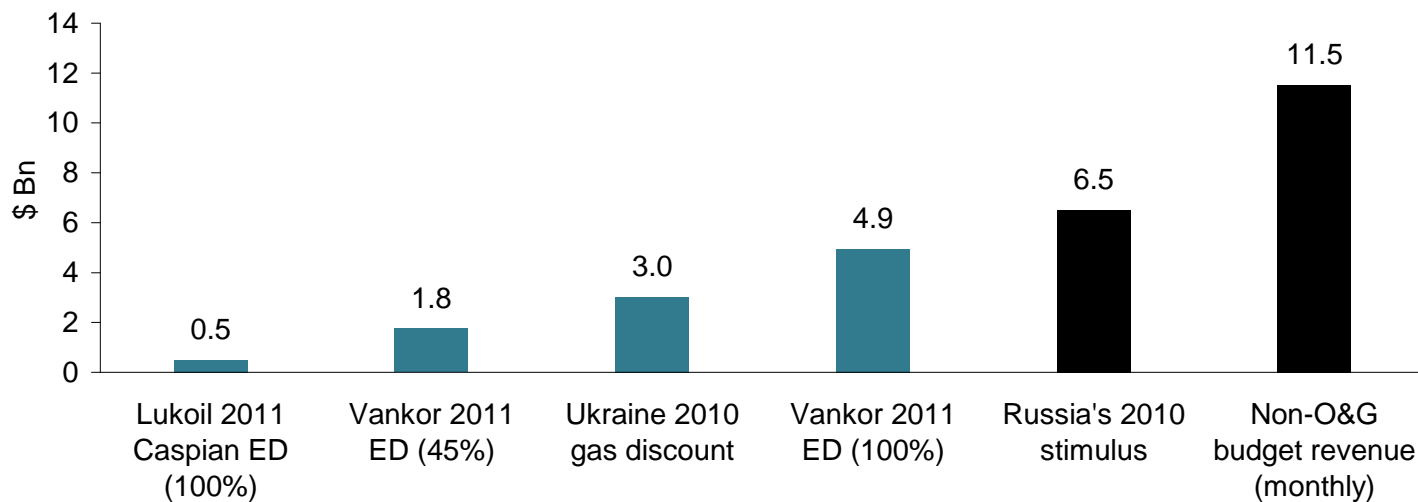
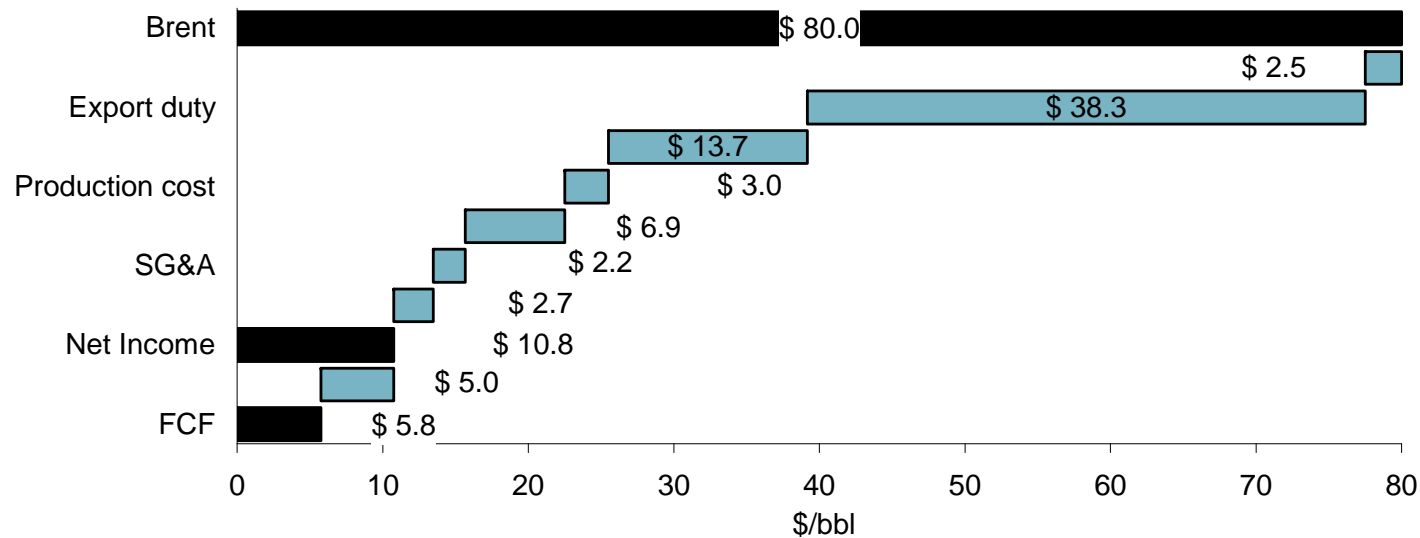
# Exploration is not the answer with today's tax regime



			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Oil Production		kbpd	0.0	1.5	3.5	3.5	3.3	3.2	3.0	2.9	2.7	2.6	2.4	2.3
	11.3	Mbbls	0.0	0.5	1.3	1.3	1.2	1.2	1.1	1.0	1.0	0.9	0.9	0.8
Oil Price		\$/bbl	80	80	80	80	80	80	80	80	80	80	80	80
FX		RUB	30	30	30	30	30	30	30	30	30	30	30	30
Revenue		\$M	-	44	102	102	97	92	88	83	79	75	71	68
ED		\$M	-	22	51	51	48	46	44	41	39	37	35	34
MET		\$M	-	8	18	18	17	16	16	15	14	13	13	12
Opex	4.00	\$M	-	2	5	5	5	5	4	4	4	4	4	3
Transport	5.00	\$M	-	3	6	6	6	6	5	5	5	5	4	4
SG&A	2.50	\$M	-	1	3	3	3	3	3	3	2	2	2	2
PBT		\$M	-	8	19	19	18	17	16	15	14	14	13	12
Tax	20%	\$M	-	2	4	4	4	3	3	3	3	3	3	2
NI		\$M	-	6	15	15	14	13	13	12	12	11	10	10
Capex	107.5	\$M	30	40	38									
Upstream FCF		\$M	(30)	(34)	(23)	15	14	13	13	12	12	11	10	10
NPV		\$M	-22											
IRR		\$M	4%											

# Zero (or reduced) export duty for East Siberian oil is a very expensive proposition for the Russian government

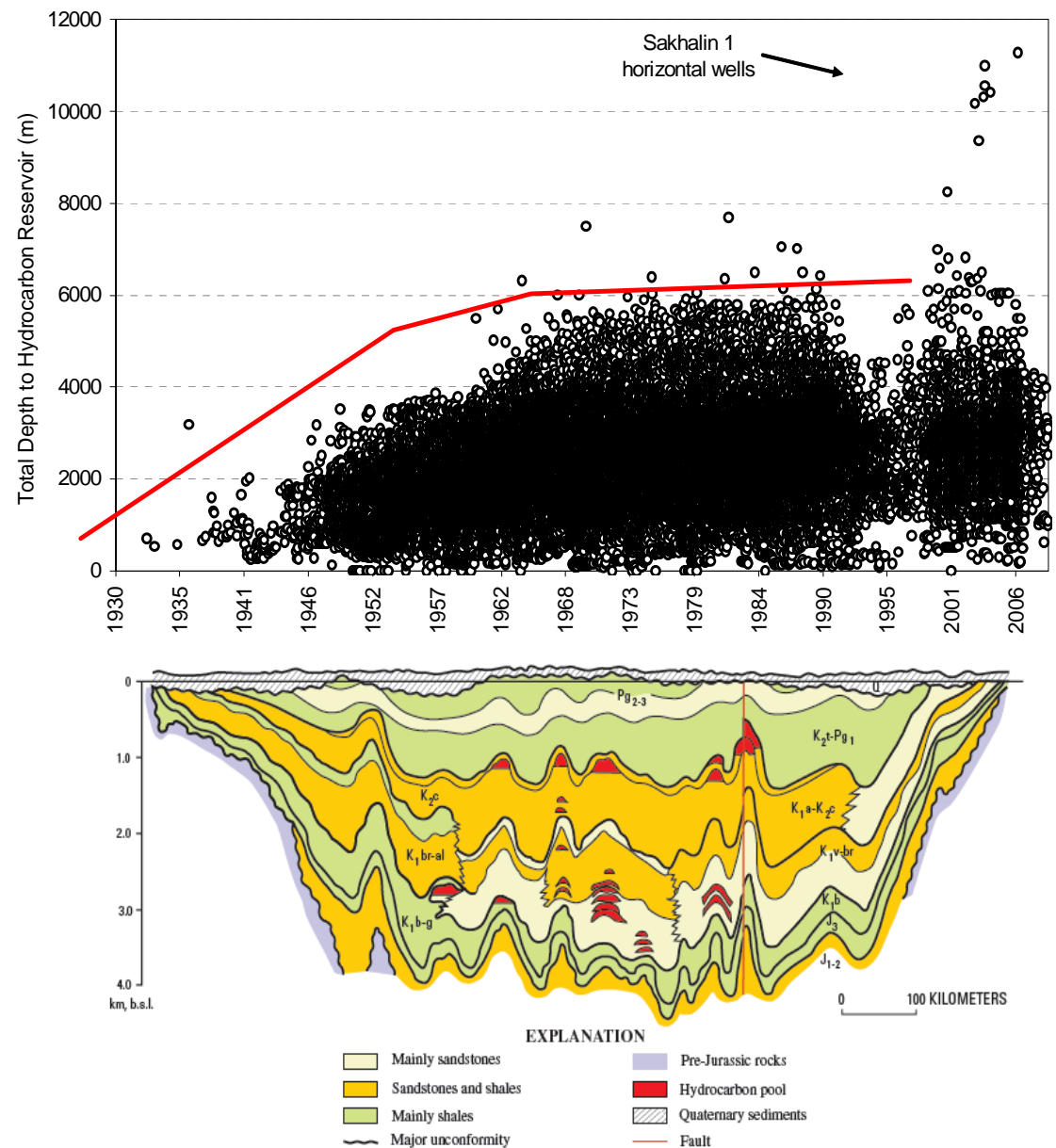
- It is obvious why the Russian oil companies are asking for tax breaks – but less obvious that the government can afford them



Source: Ministry of Finance of Russia, Company reports and Bernstein estimates

# Option #2: Drill deeper where reserves are located?

- We believe that there is limited sedimentary strata below the 4km depth in West Siberia and Volga-Urals; and below 6km in Timan-Pechora
- Analysis of 63,000 wells suggests the industry is already encroaching on the geological limit
- Industry realistically targeting the Achimov layers 4km deep

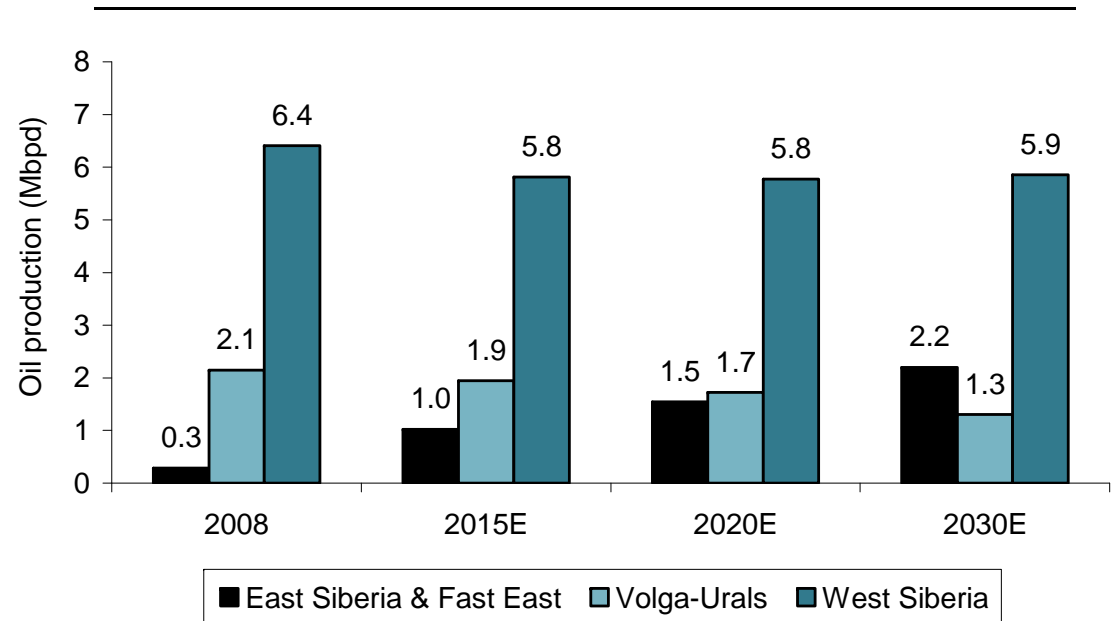


Source: IHS, USGS and Bernstein estimates

# Option #3 – Accelerate greenfield development?

- Russia's 2030 Energy Strategy envisages Russian production remaining flat around the 10Mbpd for the next 20 years
- By 2030, production from the new petroleum provinces of East Siberia, Far East (includes Sakhalin) and offshore Caspian should reach 2.6Mbpd representing 25% of the total in Russia
- The vast majority of these greenfields were actually discovered in the 1970s and 1980s

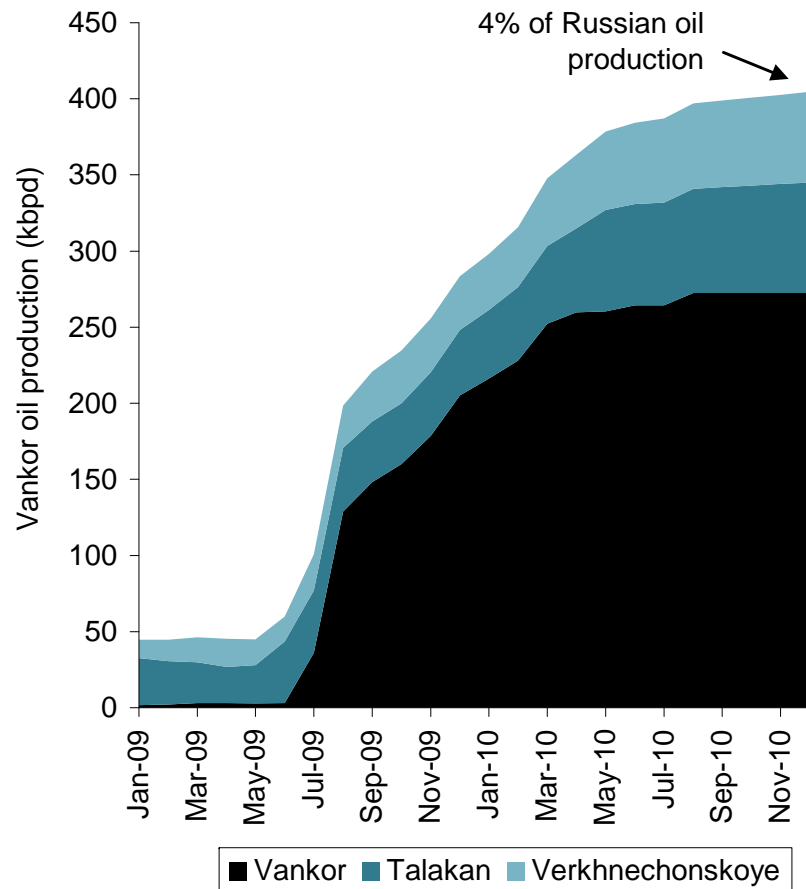
Russian oil production forecast (2030 Energy Strategy)



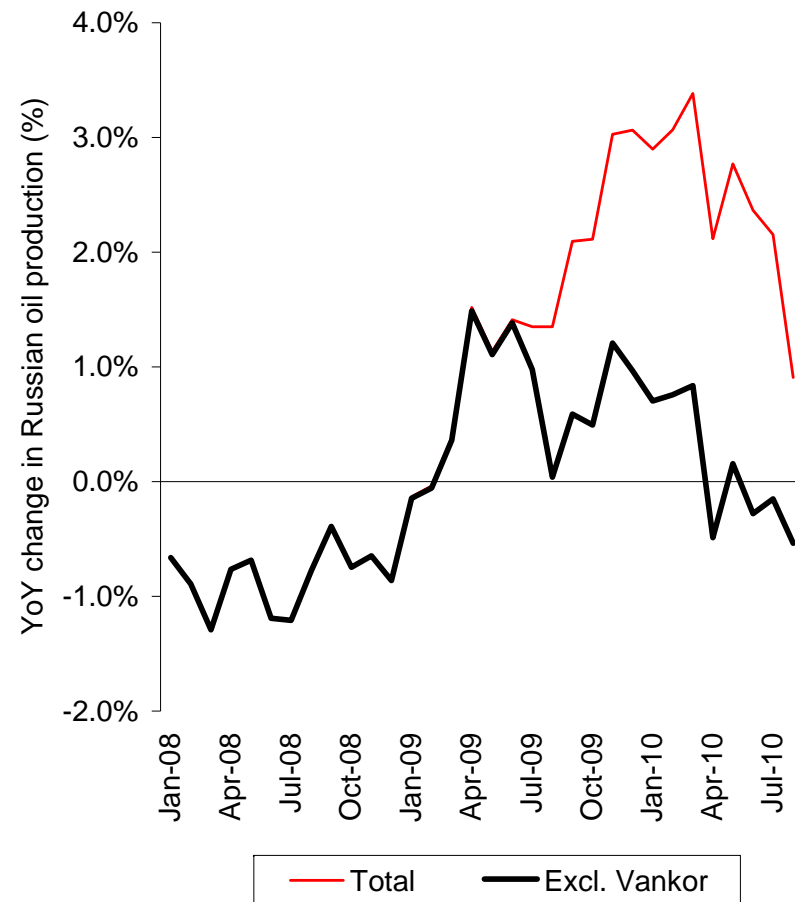
Field	Vankor	Uvat	Talakan	VCNG
License holder(s)	Rosneft	TNK-BP	SurgutNG	TNK-BP, Rosneft
Discovery	1988	Since 1960s	1987	1978
Production start	2009	2009	2008	2008
Peak production	2014	2016	2016	2014
<b>Production (kbpd):</b>				
End 2009	205.0	59.6	43.2	35.2
End 2010	270.0	72.7	72.8	59.5
Peak	496.5	220.6	120.5	140.6
Recov. reserves (Mbbls)	2,900	1,300	900	1,000

# East Siberia: An investment boom fuelled by tax incentives

East Siberian oil production split by asset



Year-on-year change in Russian oil production

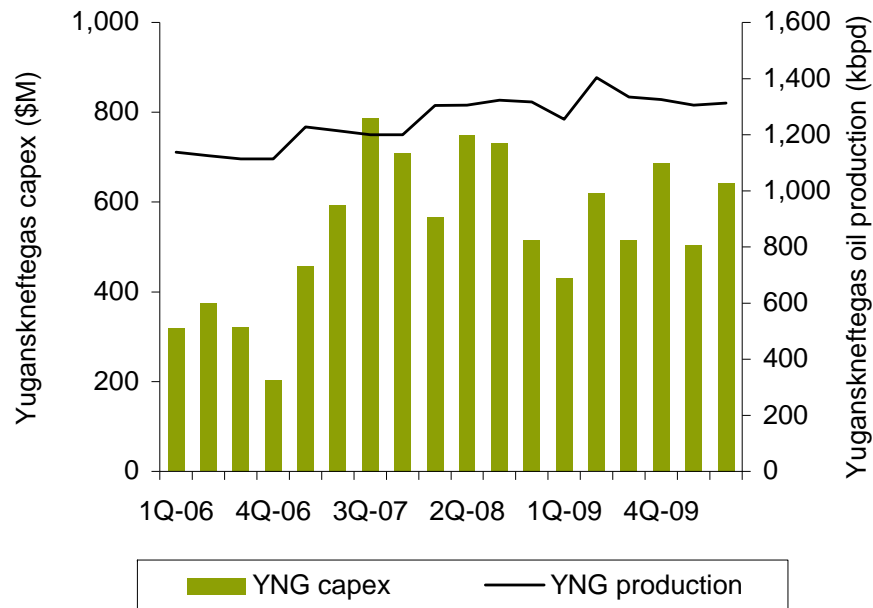


Source: Neftecompass, Company reports and Bernstein estimates

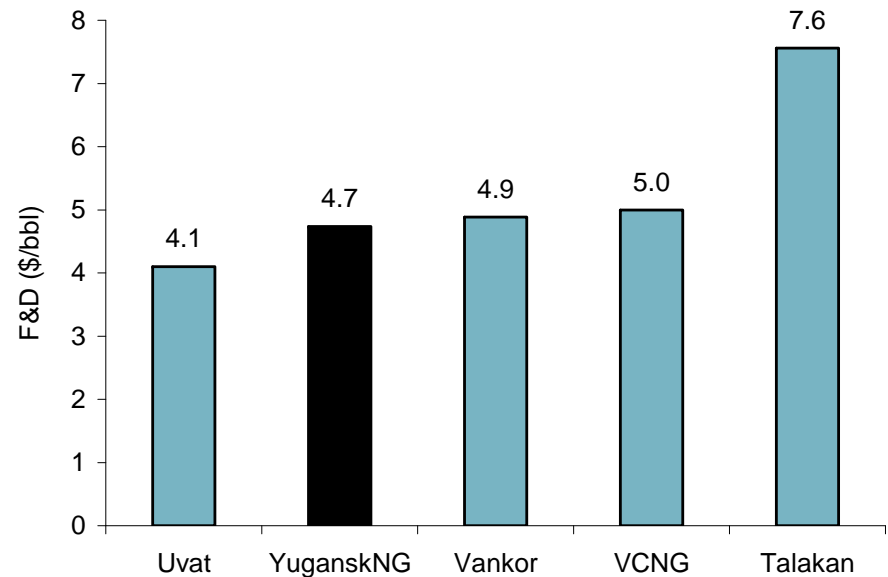
# Reasons to believe the Russian Oils are underestimating the cost of developing major greenfields

- Since 2006, Rosneft has invested almost \$10Bn in its flagship upstream asset Yuganskneftegas (43% of oil production) in return for 2.1Bn bbls of production
- Implied unit capex of \$4.7/bbl – same as declared F&D costs for Vankor and Verkhnechonskneftegas!

YuganskNG production profile vs. asset capex



Declared F&D/boe costs for major greenfield projects



Source: Company reports and Bernstein estimates

# Summary

- Russia is a key resource base for oil and gas, so the stakes are high
- However, exploration activity never fully recovered from the 1990s collapse with very few large discoveries made in the past 20 years
- Meanwhile, the high degree of upstream concentration inhibits the emergence a strong wildcat E&P industry
- Exploration track record of recent years has been disappointing with the average discovery size of 11Mbbls not economical under the existing tax environment
- East Siberia is not the resource base many believe due to the poorer quality rocks and inferior reservoir characteristics compared to West Siberia
- The opportunity is really about near field exploration and brownfield redevelopment in the West Siberia and Volga-Urals regions

**THANK YOU!**

# Disclosure Appendix

# Valuation Methodology

- For the Russian Energy Stocks, we use DCF valuations to determine our price targets, incorporating WACC rates ranging from 12-14% and terminal growth rates ranging 0%-3%

<b>Company</b>	<b>WACC</b>	<b>Terminal growth rate</b>	<b>Target price (\$/GDR)</b>
Gazprom	12.9%	2.0%	32.1
Novatek	11.7%	3.0%	90.0
Rosneft	12.7%	1.0%	7.0
Lukoil	13.4%	0.0%	52.1
Surgutneftegas	14.5%	1.0%	7.9

# Risks

- Oil prices forecasts are heavily dependent on GDP expectations. As such, should GDP be stronger than expected or weaker than expected it could materially change the outlook for oil demand and prices and for the cash flow generation of the peer group. In addition supply disruptions caused by weather or terrorism remain a material risk and would place further upward pressure on pricing. The greatest risk to our target prices is a significant decline in crude oil prices, as these stocks commonly trade in line with commodity prices. Additionally, downward revisions to production volume targets could adversely impact share prices.
- **Russian equities** fall into the emerging market (EM) category and are therefore sensitive to the risks associated with EM economies such as currency devaluation, debt default and political risk, all of which could materially alter the outlook for the companies.
- Specifically for **Gazprom** and **Novatek**, under our positive view on natural gas markets in Russia and Europe, the key risk is material demand destruction across both regions. While this can not be ruled out, historical time series analysis does indicate that natural gas is the least impacted non-renewable commodity during prior downturns. Moreover, fundamentals such as declining core European production, limited storage availability, new gas fired power plant developments, and lack of unconventional sources such as those currently ramping up in the US, all point to a greater need for natural gas in Europe's supply.

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**Ticker Rating Changes**

LKOD.LI	U (IC)	01/15/09
NVTK.LI	O (IC)	01/15/09
OGZD.LI	O (RC)	07/16/09
ROSN.LI	U (IC)	01/15/09
SGGD.LI	U (IC)	01/15/09

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 Rating Actions: IC - Initiated Coverage, DC - Dropped Coverage, RC - Rating Change

**ROSN.LI / Rosneft Oil Co**

Date	Rating	Target(USD)
01/15/09	U(IC)	3.00
05/20/09	U	4.80
11/20/09	U	7.00

IC - Initiated Coverage

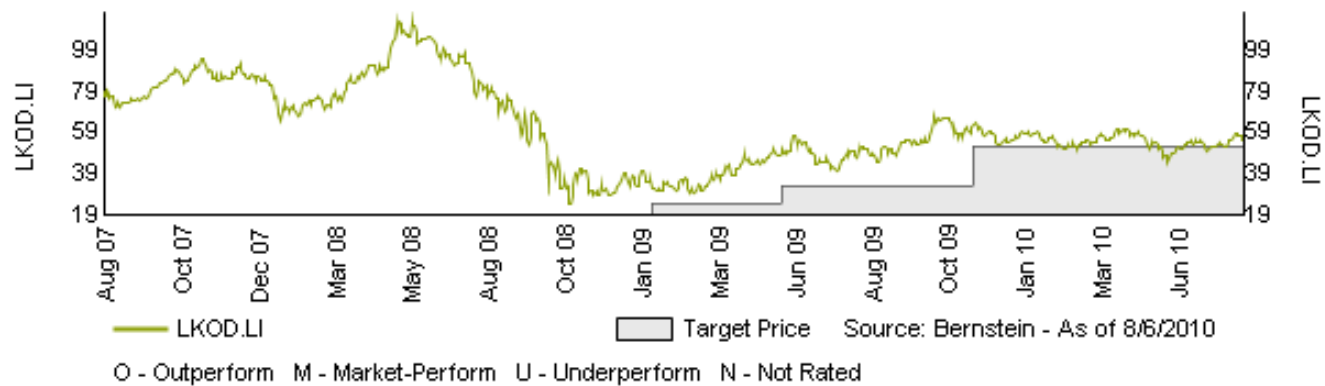


O - Outperform M - Market-Perform U - Underperform N - Not Rated

## LKOD.LI / LUKOIL

Date	Rating	Target(USD)
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05/20/09	U	32.10
11/20/09	U	52.10

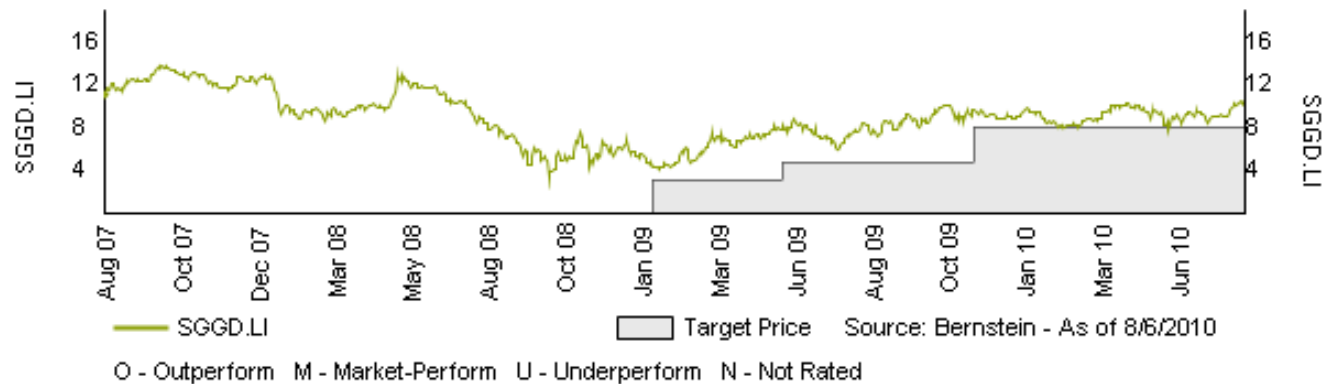
IC - Initiated Coverage



## SGGD.LI / Surgutneftegaz

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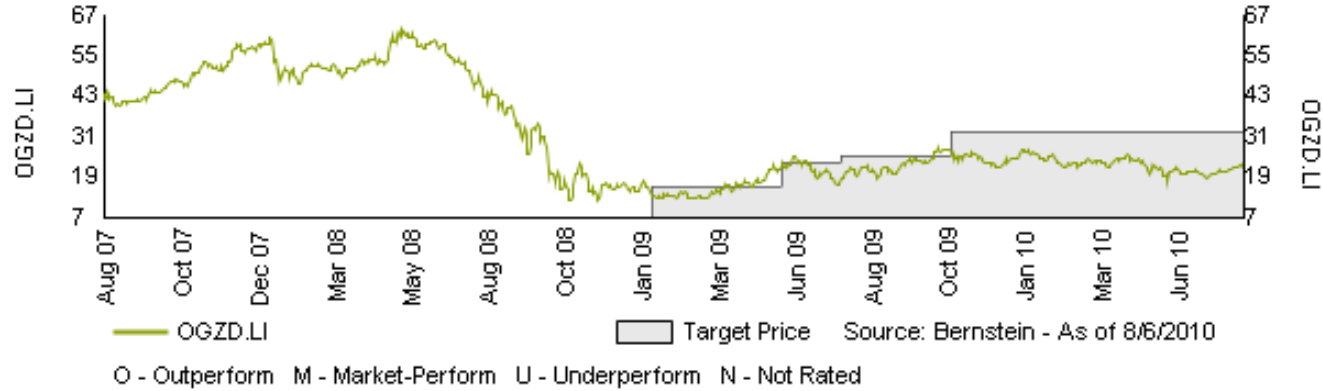
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### OGZD.LI / Gazprom OAO

Date	Rating	Target(USD)
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10/30/09	O	32.00
11/20/09	O	32.10

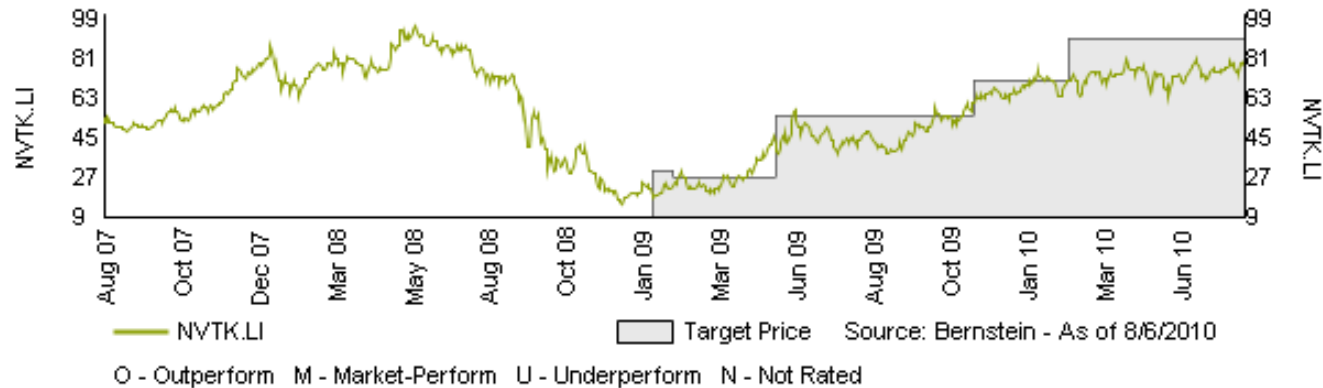
IC - Initiated Coverage



### NVTK.LI / NovaTek OAO

Date	Rating	Target(USD)
01/15/09	O(IC)	30.00
02/03/09	O	27.00
05/13/09	O	55.00
11/20/09	O	70.30
02/18/10	O	90.00

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