



CLARKSON RESEARCH STUDIES

THE ICE CLASS TANKER MARKET



Stephen Gordon

Clarkson Research

DNV Seminar

16th March 2005



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THE ICE CLASS TANKER MARKET



1. INTRODUCTION

2. DEMAND

3. SUPPLY

4. THE MARKET

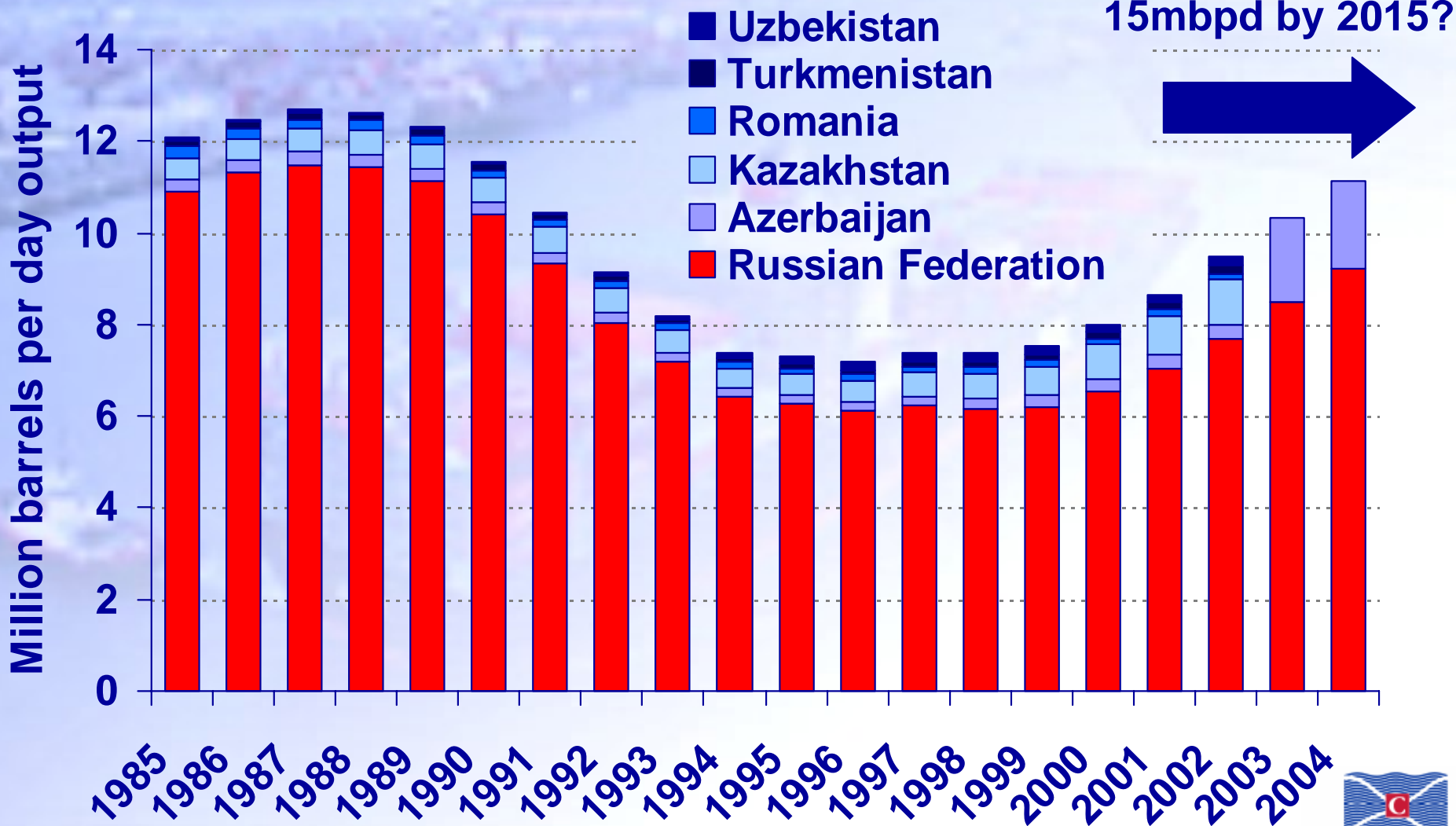
5. THE OUTLOOK




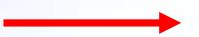



FSU Oil Output – Keen to Grow

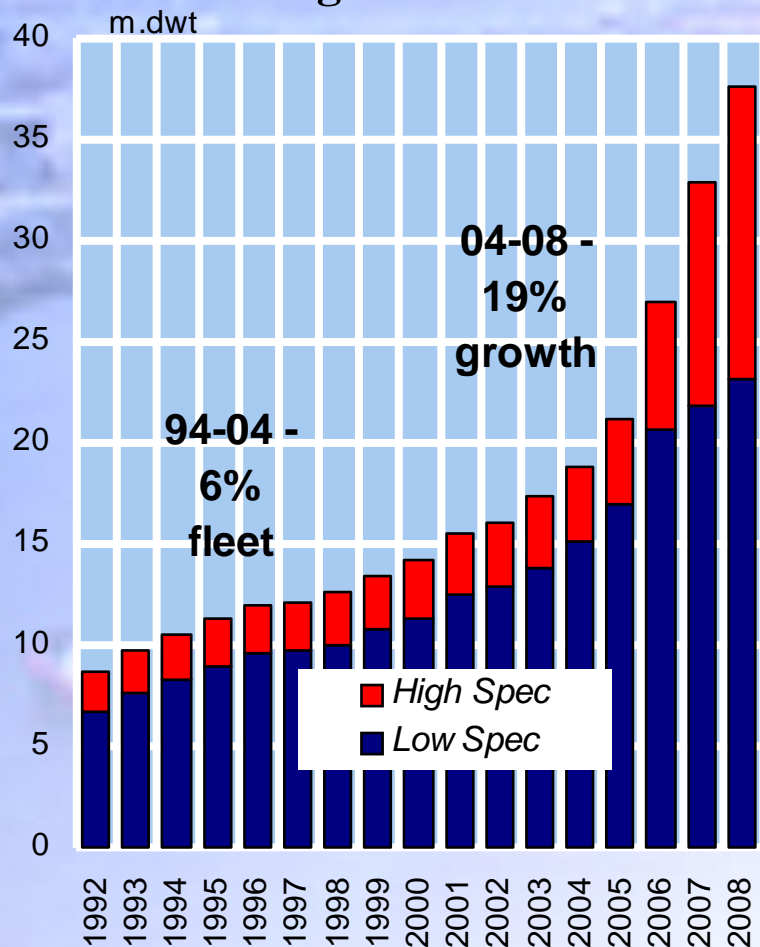
15mbpd by 2015?





-  Proposed Pipeline
-  Existing Pipeline
-  Pipeline under construction

Breaking New Ground?



Source: Clarkson Research Studies

The Ice Option for Russian oil

- 3% of the total tanker fleet in 1992 had some form of ice class
- We estimate that 10% of the fleet by 2008 will have ice class
- “High Spec” fleet is set for massive growth



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East Russia

Sakhalin Timeline

Date	Event
1994	Production sharing agreement signed for Sakhalin-2
1995	Production sharing agreement signed for Sakhalin-1
July 1999	First oil produced from Vityaz (Sakhalin-2 Phase I)
2001	Exploration of Sakhalin-4 & Sakhalin-5 projects began
December 2003	Exploration of Sakhalin-4 & Sakhalin-6 discontinued
January 2004	Government cancels Sakhalin-3 tender, delaying project
October 2004	First well drilled at Sakhalin-5
End 2005	Sakhalin-1 pipeline to De-Kastri begins operations
2006	Tanker operations from De-Kastri begin
End 2006	Sakhalin-2 pipeline to Korsakov begins operations
2007	Sakhalin-2 Phase II operations begin
2008	Sakhalin-5 exploration work complete





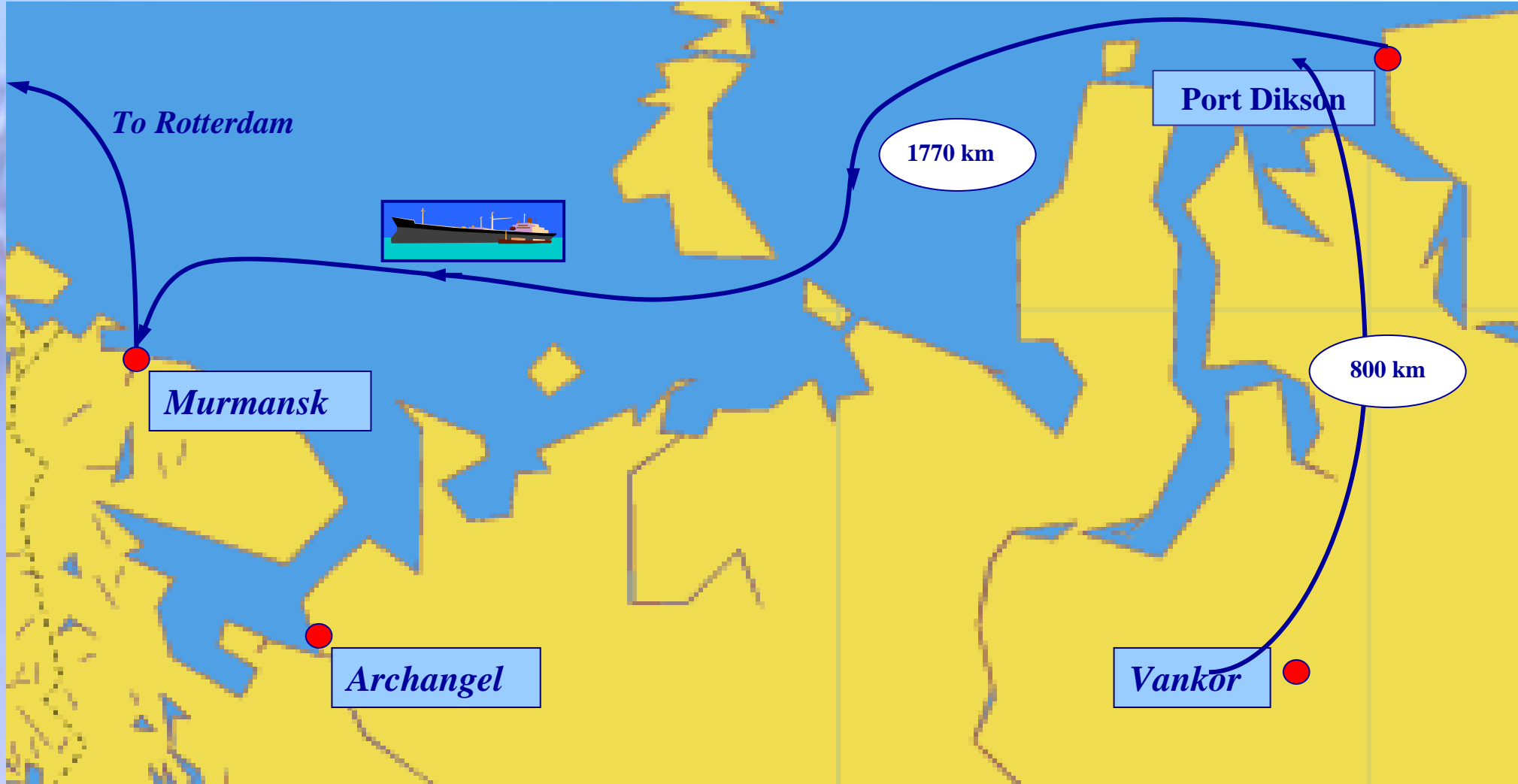
Sakhalin Shelf Project Summary

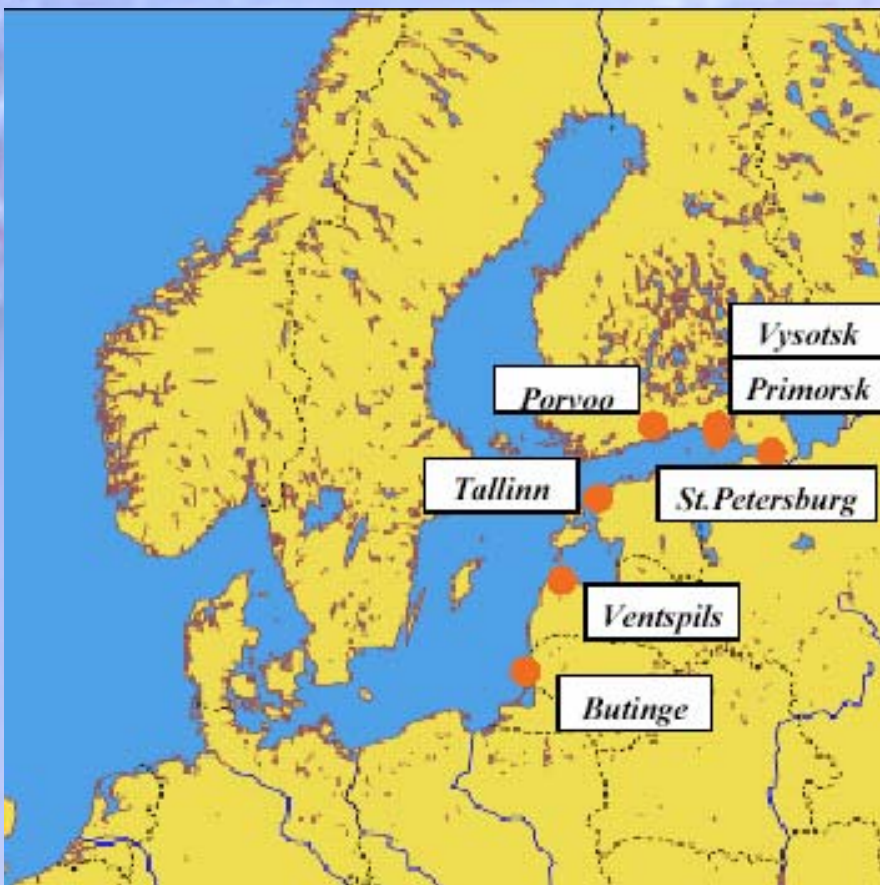
Project	Investment	Partners	Status	Status
Sakhalin-1	\$12 billion	ExxonMobil 30% Sodeco 30% ONGC Videsh 20% SMNG- Shelf 11.5% Rosneft-Astra 8.5%	Active	PSA in place, pipeline completion due end-2005
Sakhalin-2	\$12 billion	SEIC-Mitsui 25% Shell 55% Mitsubishi 25%	Active	PSA in place, oil exports from Vityaz terminal under way, LNG export contracts to Japan finalised, LNG exports to California being negotiated
Sakhalin-3	\$151 million (exploration only)	Reapportionment awaited	Under development	
Sakhalin-3	\$380 million (exploration only)	ExxonMobil 66% Rosneft 17% SMNG 16%	Under development	
Sakhalin-4	Not defined	BP 49% 25.5% Rosneft-SMNG 25.5%	Discontinued	Active exploration discontinued December 2003
Sakhalin-5	Not defined	BP 49%	Under development	PSA approval process encountering delays
Sakhalin-6	Not defined		Discontinued	Active exploration discontinued December 2003

Data populating this table has been collected from a variety of sources. Further details are available from Clarkson Research Studies.









Baltic

- Rapid developments in recent years (BPS now 1mbpd)
- Next stage of growth more moderate (1.2mbpd by 2010)
- Key “swing” region of ice class demand
- Ice ports now handling large volumes
- Prospects for additional Russian port in Gulf of Finland

Region (mbpd)	2005	2010?
East Russia	0.07	0.25
North Russia	0.18	0.76
Baltic	1.78	2.18

Exports from ice ports

- Sakhalin – watch out for pipelines
- North Russia very exciting but many challenges and crude export channels unclear
- Steady Baltic growth as further BPS expansion expensive



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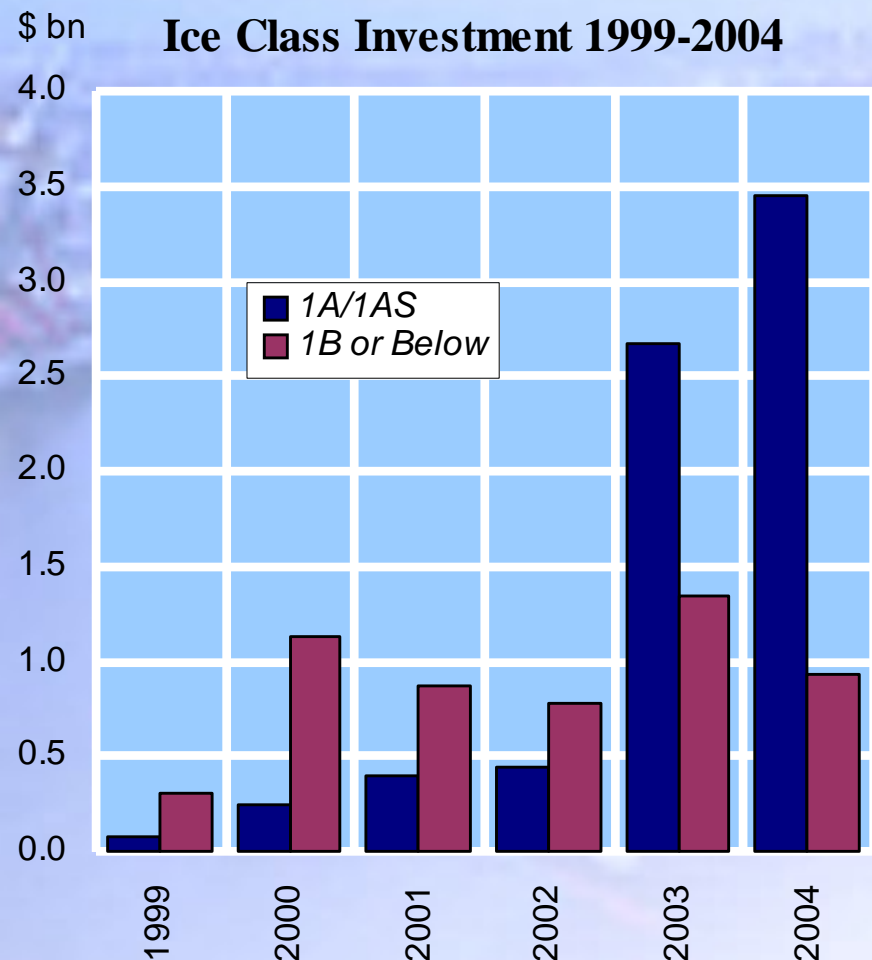


Ice Class Fleet Summary

at: Feb-05

	Total Fleet		Over 20 years		Orderbook		% of fleet over 20 years		% of fleet on orderbook	
	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt
High Spec Ice Fleet	262	4.2	78	1.0	165	11.6	30%	24%	63%	276%
Ice Class 1B and "Lower"	735	19.3	262	2.8	69	3.9	36%	15%	9%	20%
Total Tanker Fleet	5,825	344.0	1,720	48.9	1,295	90.9	30%	14%	22%	26%

Source: Clarkson Research Studies



Source: Clarkson Research Studies

Ice Class Investment

- \$12 billion since 1999, 15% of total tanker newbuilding investment
- Narrowing newbuild premium for ice class
- Shipyards are becoming more flexible

**Top Owners 1A / AS Orderbook**

Owner	No	Dwt
Barclay Shpg. Ltd.	16	659,200
Sovcomflot OAO	10	1,037,200
Western Petroleum	9	664,800
Tsakos Shpg. & Trad.	8	799,700
Minerva Marine Inc.	8	516,000
BP Shipping Ltd.	6	690,000
Dynacom Tankers Mngt	6	672,000
Stena Bulk AB	6	602,000
Pietro Barbaro SpA	6	352,000
Marlow Nav. Co. Ltd.	6	90,000
Others	84	5,493,049
Total	165	11,575,949

Top Builders 1A / AS Orderbook

Builder	No	dwt
Hyundai Mipo	39	1,635,400
Samsung S.B.	22	2,730,100
Hyundai H.I.	18	2,278,300
STX Shipbuild.	18	994,200
Brod. Split	10	818,000
Daewoo S.B.	7	983,000
Onomichi Dockyd	6	438,000
Aker Braila	6	90,000
Volharding	6	84,000
Hyundai Samho	5	565,000
Others	28	959,949
Total	165	11,575,949





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The Market Tomorrow : Issues to look out for

- FUTURE OF RUSSIAN OIL INDUSTRY?
- HOW WILL THE RUSSIAN OIL INDUSTRY DELIVER TO MARKET ?
- NORTH RUSSIA & THE ARCTIC ?
- ICE BREAKER DEMAND ?
- REGULATORY CHANGES ?
- HOW LARGE WILL THE ORDERBOOK GROW ?

