

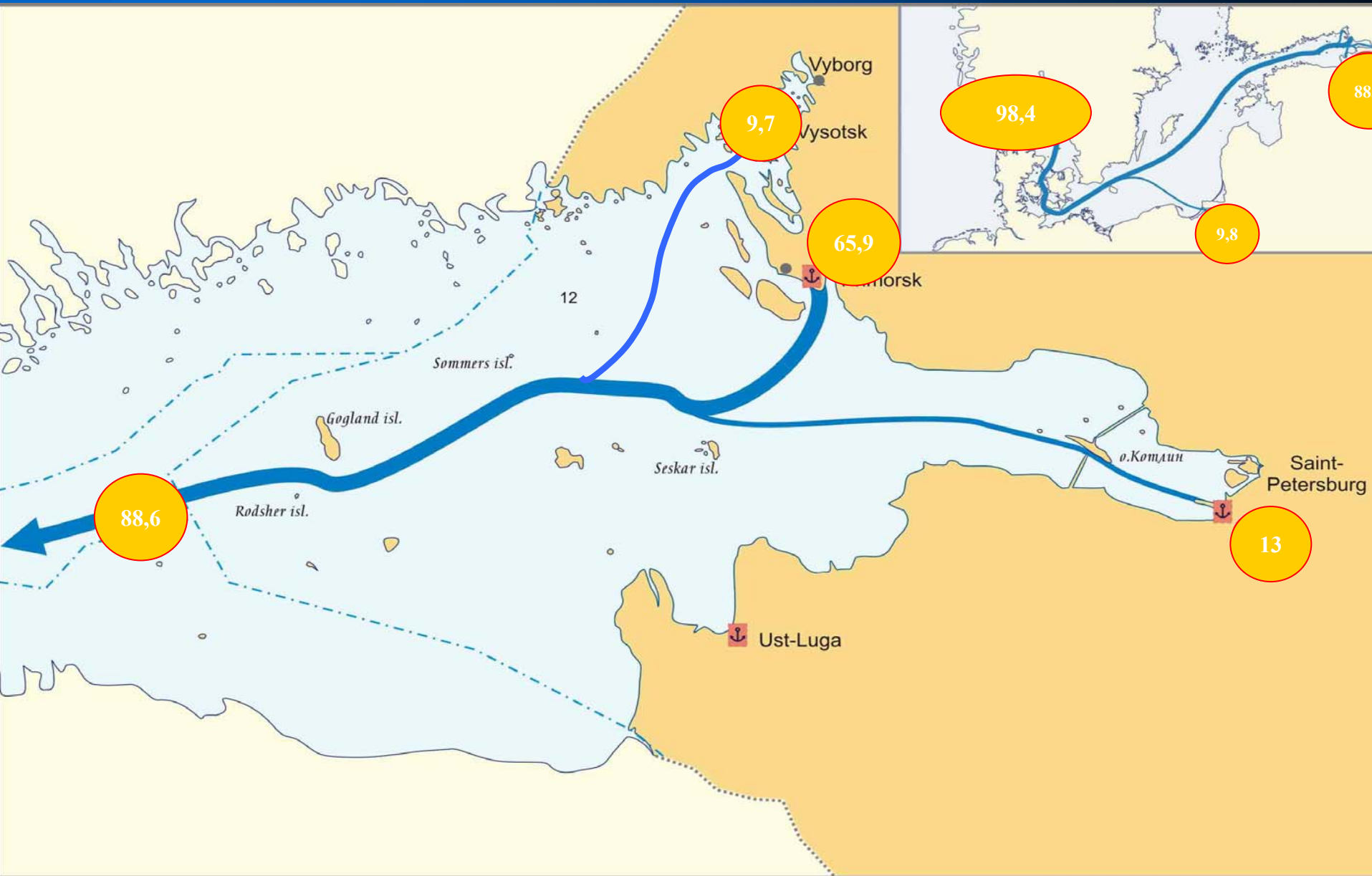
Export of heavy fuel oil and crude oil via Baltic Russian ports

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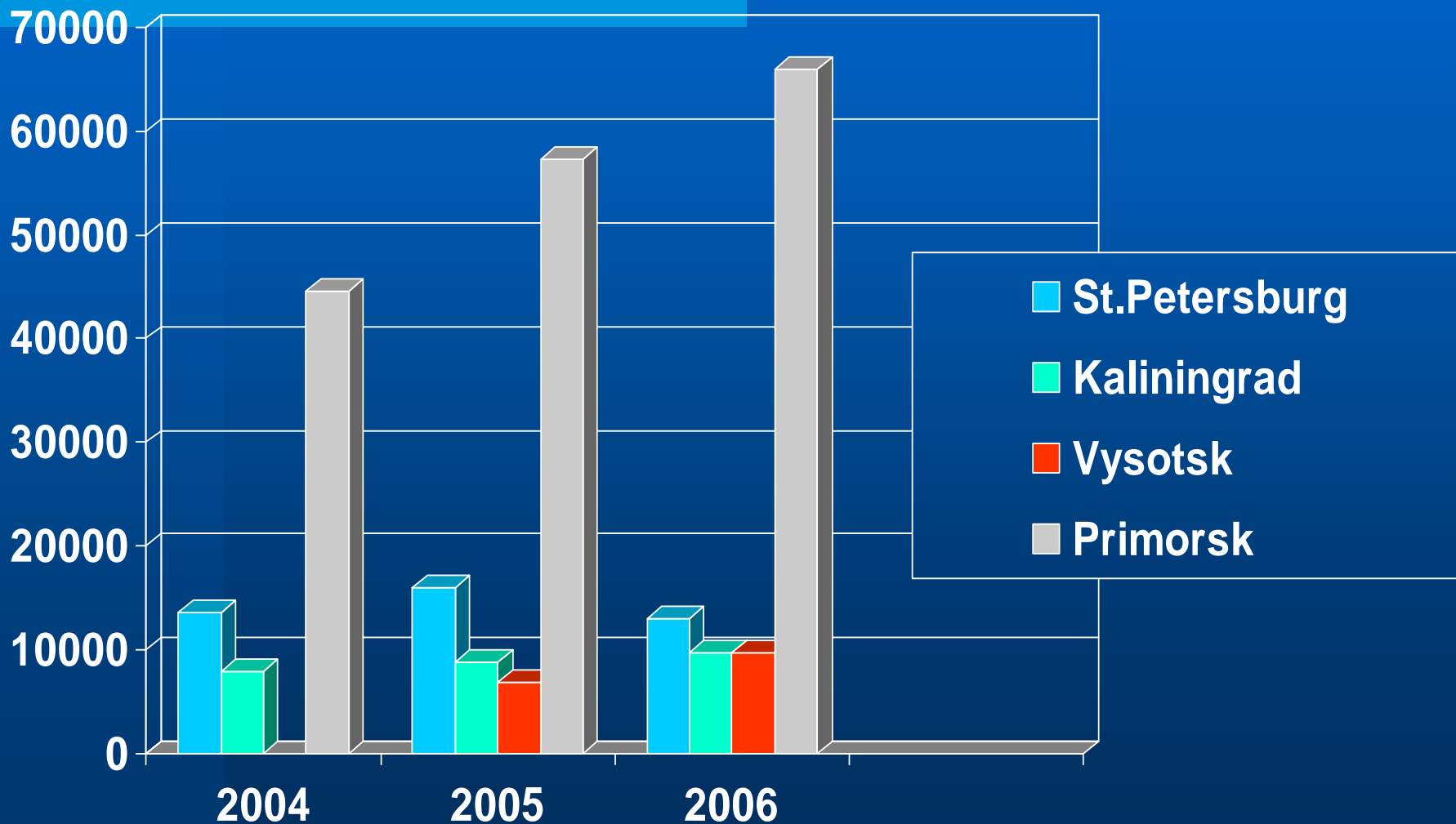
Laboratory “Environmental safety of maritime
transport”, CNIIMF, St.Petersburg, Russia.

St. Petersburg, June 2007

Russian oil transport scheme



Export of oil via Baltic sea ports



HFO (mazuts) properties (according to Russian standard GOST- 10585-99)

Parameters/types of oils	F-5*	F-12	M-40	M-100
Viscosity, kinematic, cSt			(calcul	(calculet.
at 50 C	36	89	240)	620)
At 80 C			59	118
At 100 C				6.8
Water, %	0.3	0,3	1.0	1.0
Sulfur, %	0,5 - 1,0	0,5 - 1,0	0.5-3.5 1.0	0.5-3.5
Ash, %	0.05	0.1		1.0
T chilling, C	-5	-8	10-25	25-42
Density, kg/cub m.	955	960	985	995-1015

Export crude oil classification

Performances	Type according to standard			
	1	2	3	4
1. Density at 20°C, kg/M³, not more	≤ 850	≤ 870	≤ 890	≤ 895
2. Fraction outputs % vol, not less				
Temperature up to 200°C	≥ 25	≥ 21	≥ 21	≥ 19
Temperature up to 300°C	≥ 45	≥ 43	≥ 41	≥ 35
Temperature up to 350°C	≥ 55	≥ 53	≥ 50	≥ 48
3. Sulfur, % mass not more	≤ 0,6	≤ 1,8	≤ 2,5	≤ 3,5

Thank you for the attention