LNG Costs and Natural Gas Prices

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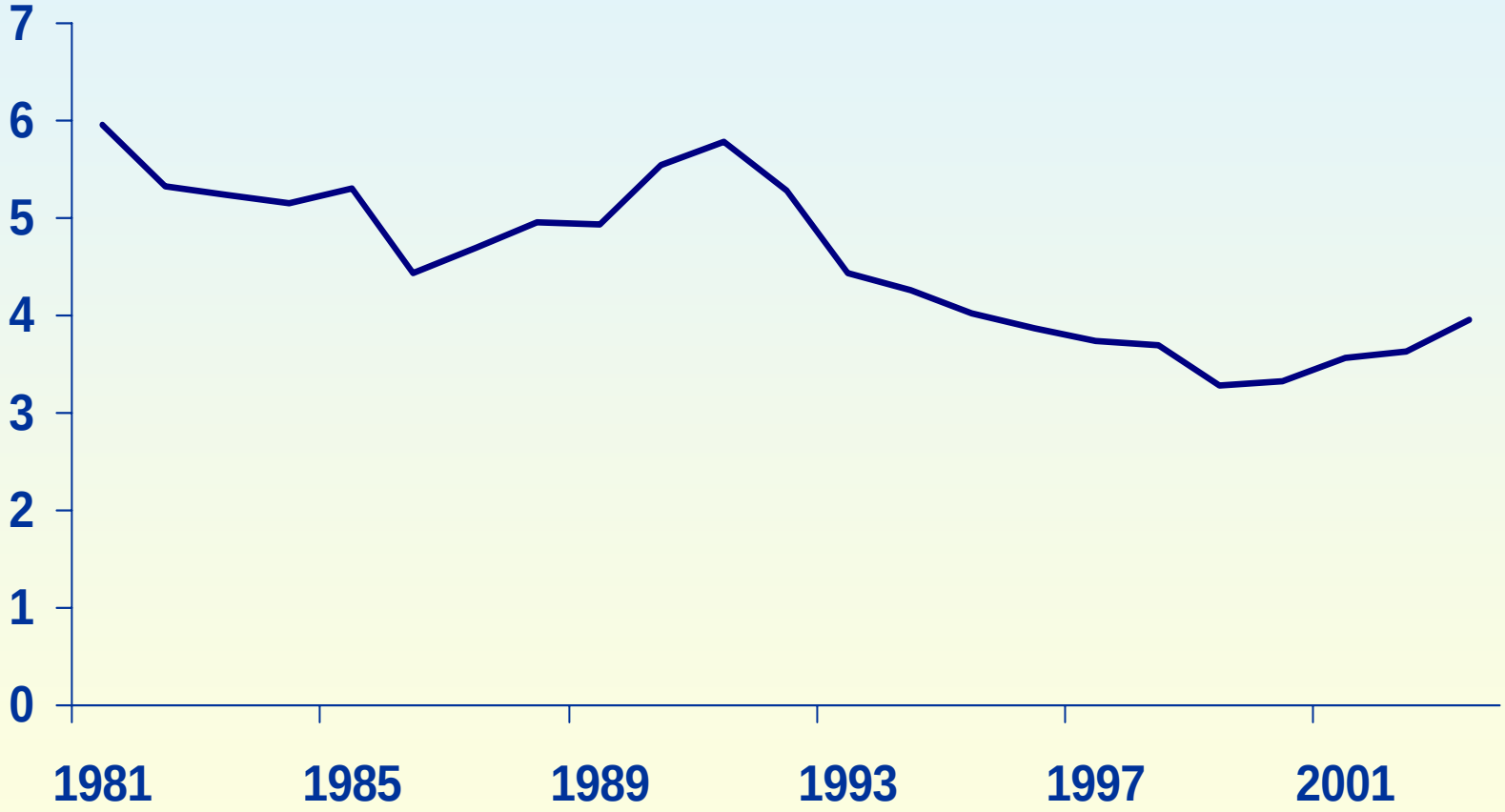
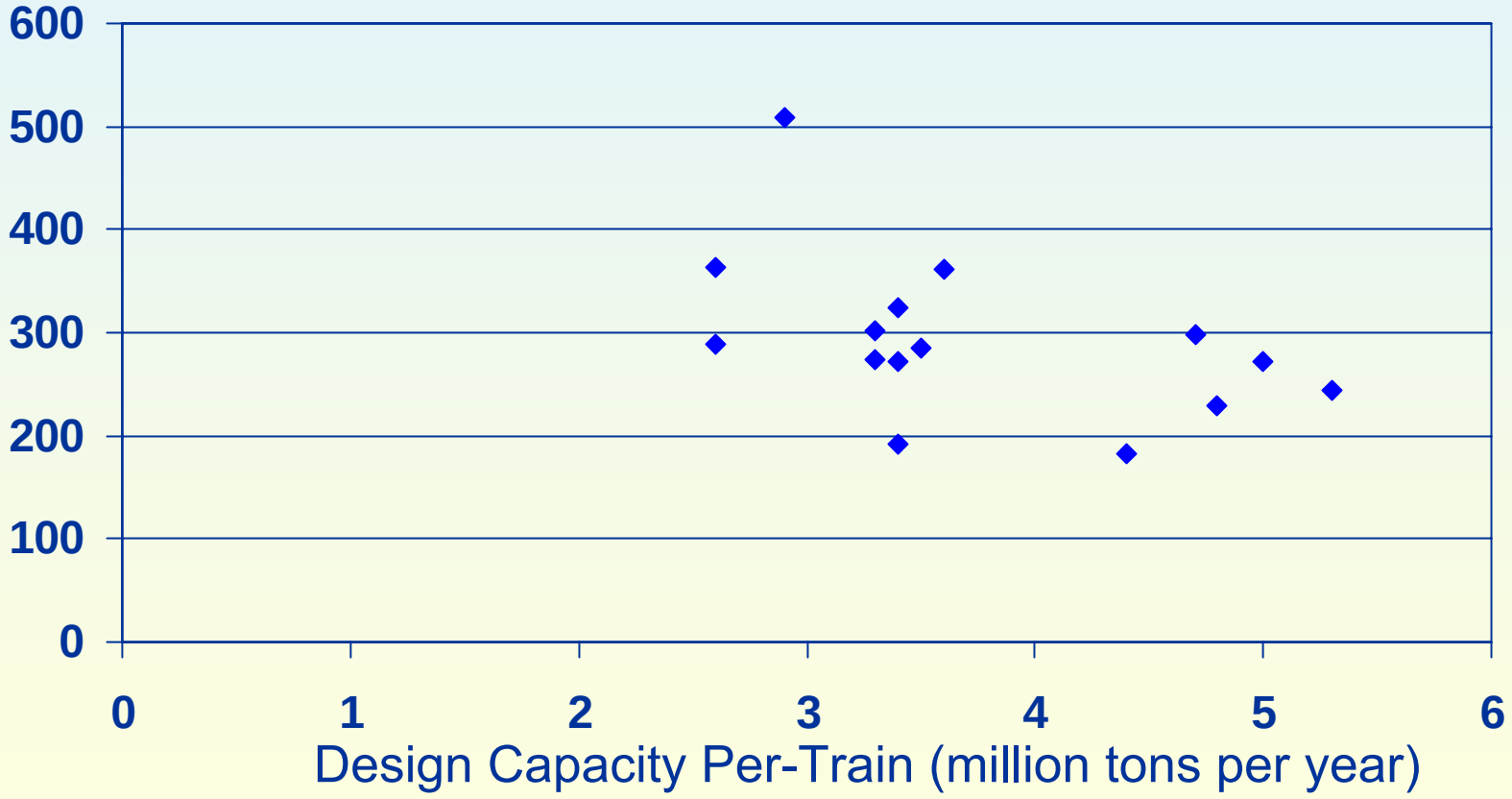
Foreign Direct Lifting Costs for Oil and Gas, 1981-2003 (2003 dollars per barrel of crude oil equivalent)



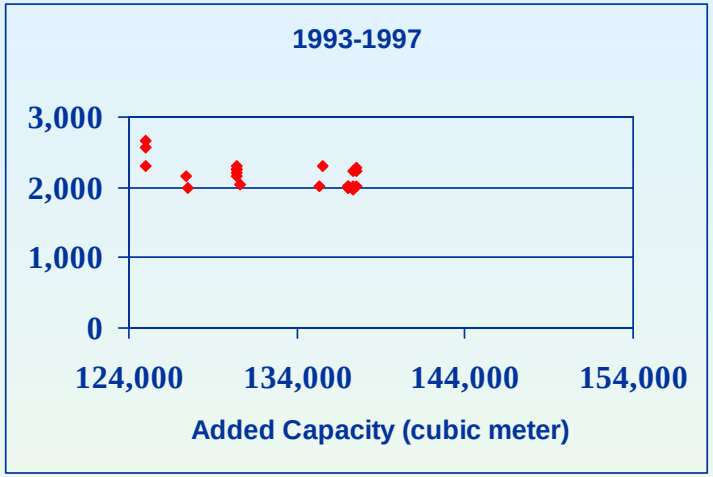
Source: Financial Reporting System

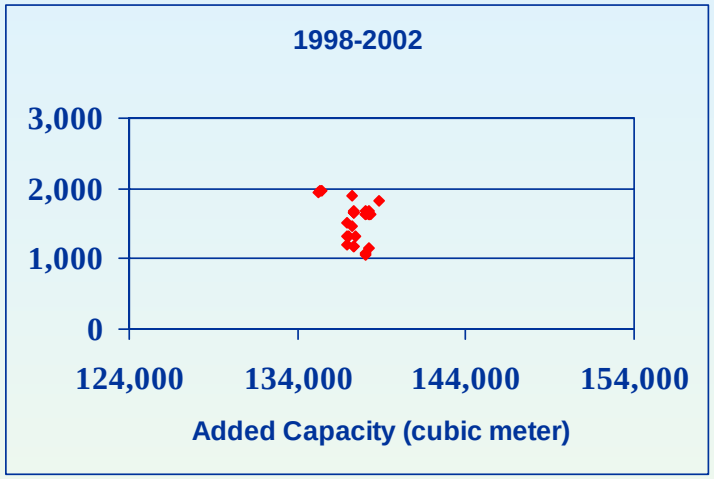
Greenfield Liquefaction
Per-Unit Capital Cost vs. Capacity
(2004 dollars per ton capacity per year)

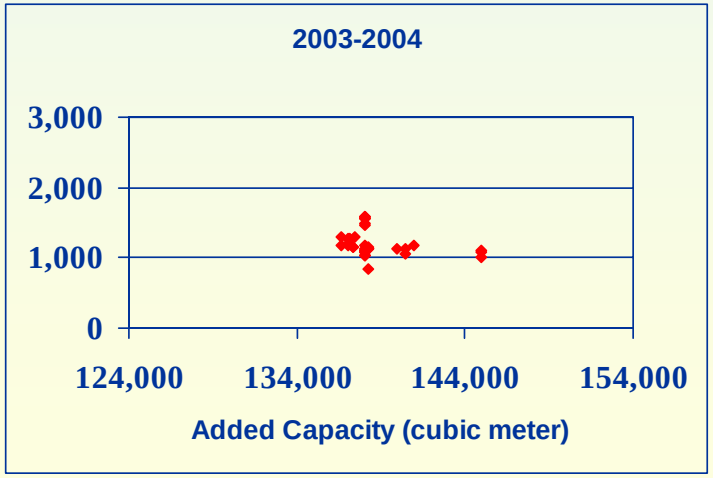


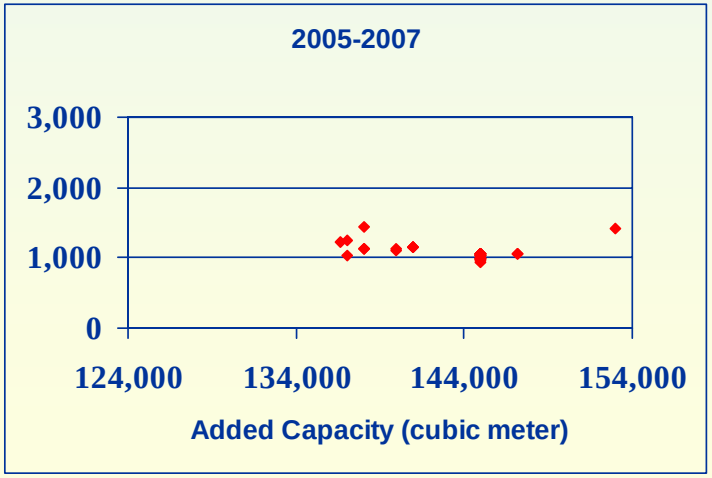
Source: Wood Mackenzie - Global LNG Online

Ship Price Per Volume vs. Added Capacity (2002 dollars per cubic meter)



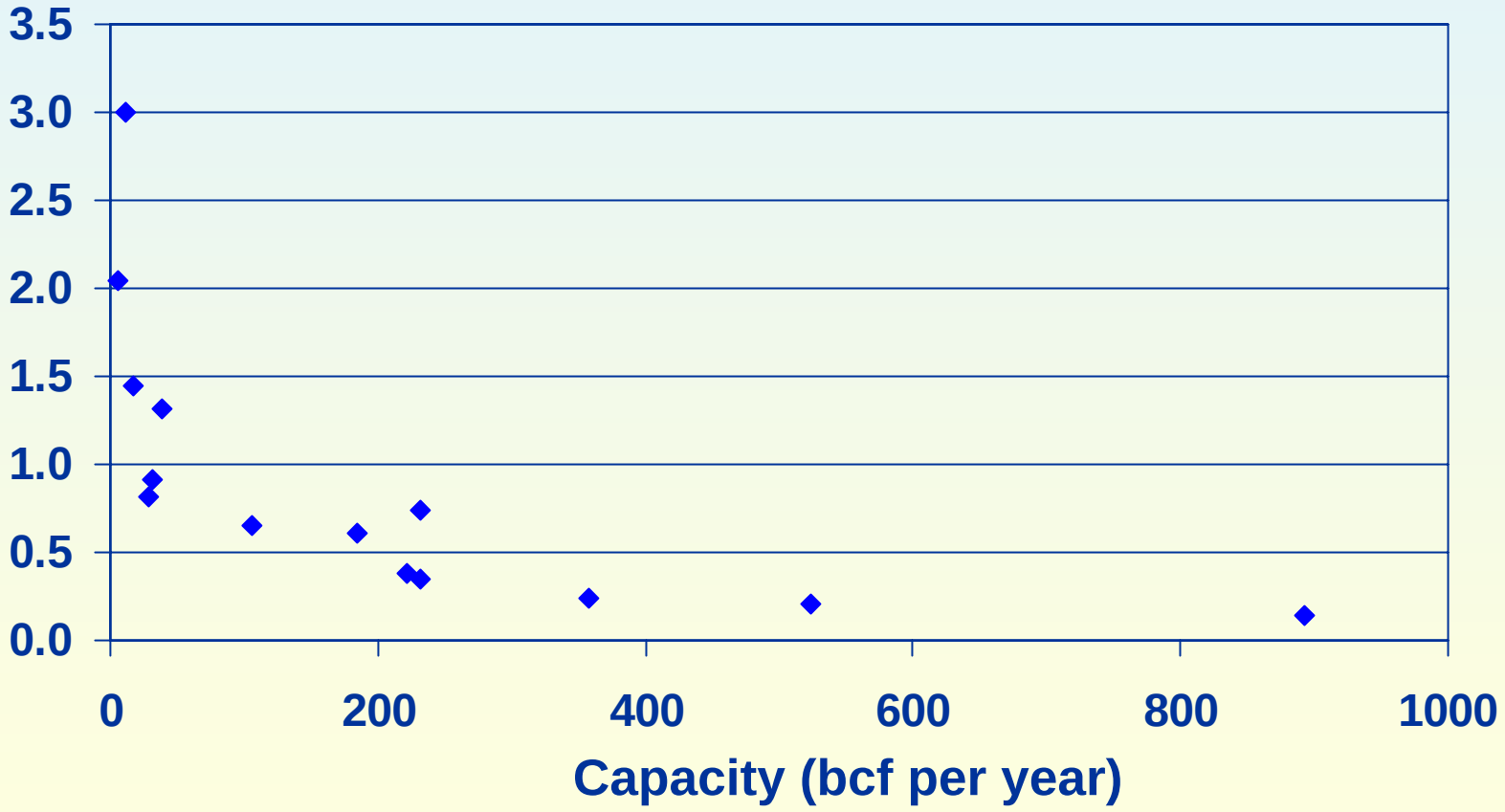






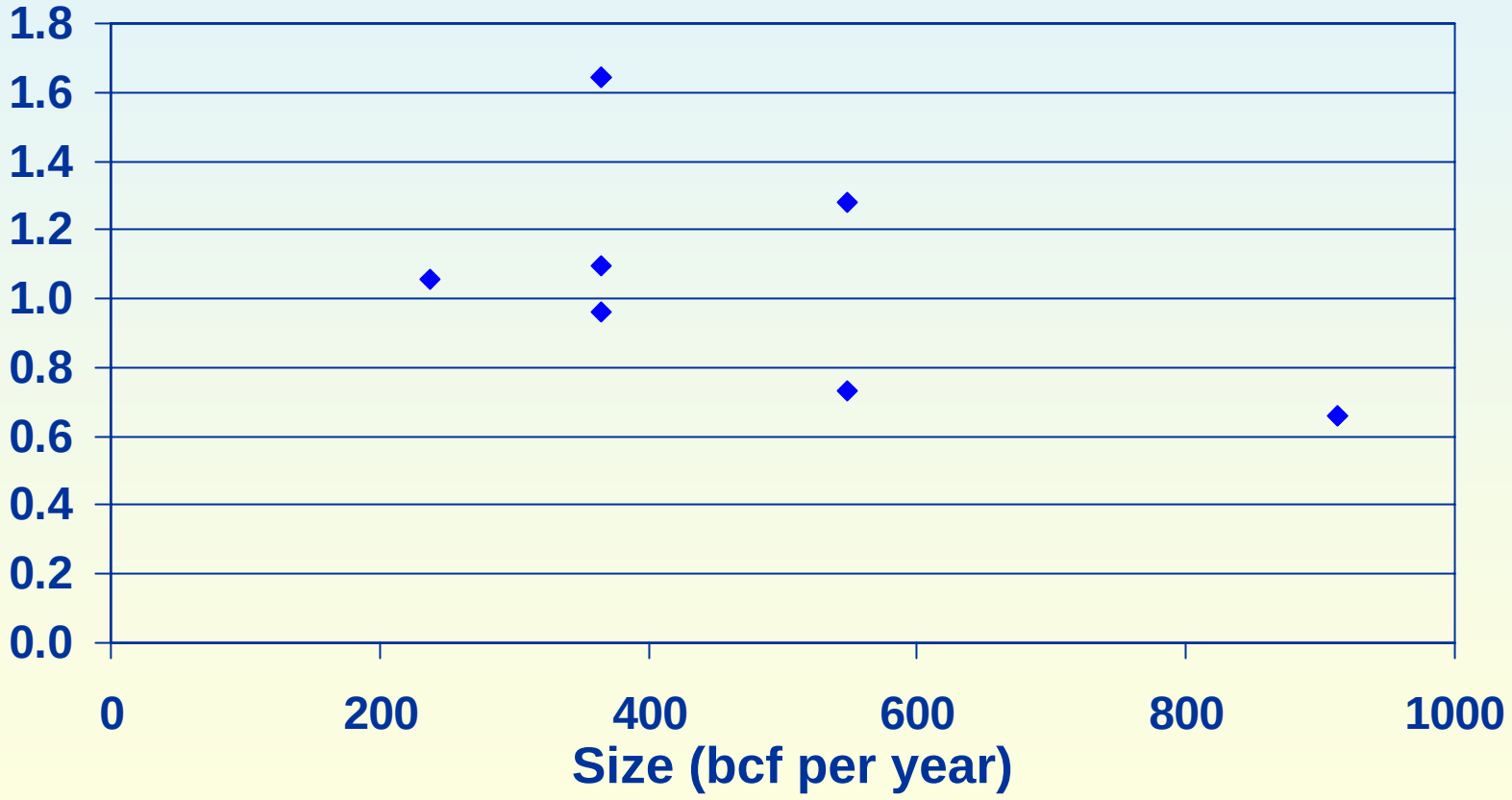
Source: Colton & Co. – www.coltoncompany.com

Japan Regasification Terminal Construction Costs (1995 billion yen per bcf capacity per year)



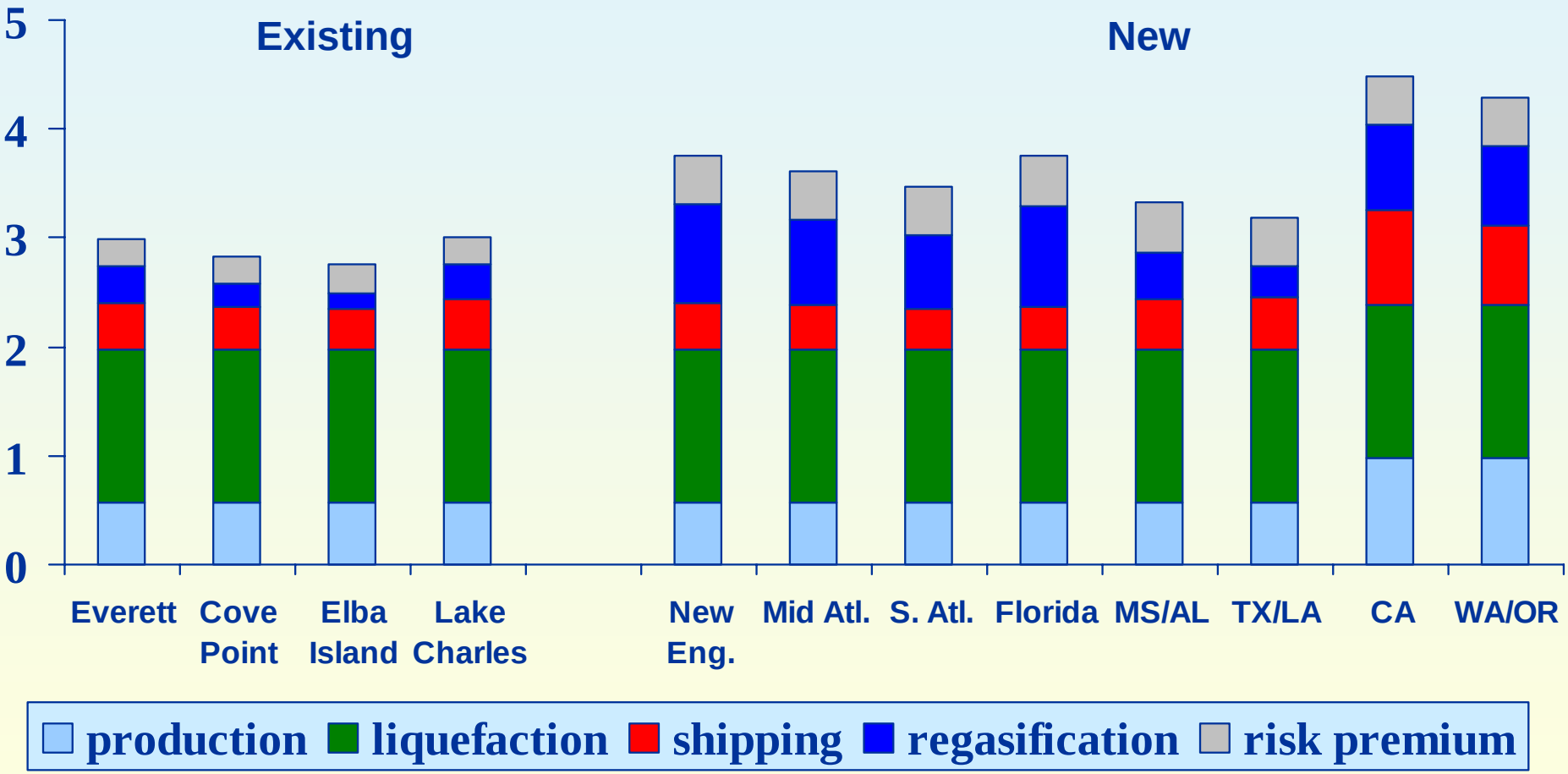
Source: METI -Japanese Ministry of Economy, Trade and Industry

Gulf Coast-Onshore Proposed Regasification Project Capital Costs (million 2004 dollars per bcf capacity per year)



Source: Office of Oil and Gas, Office of Integrated Analysis and Forecasting

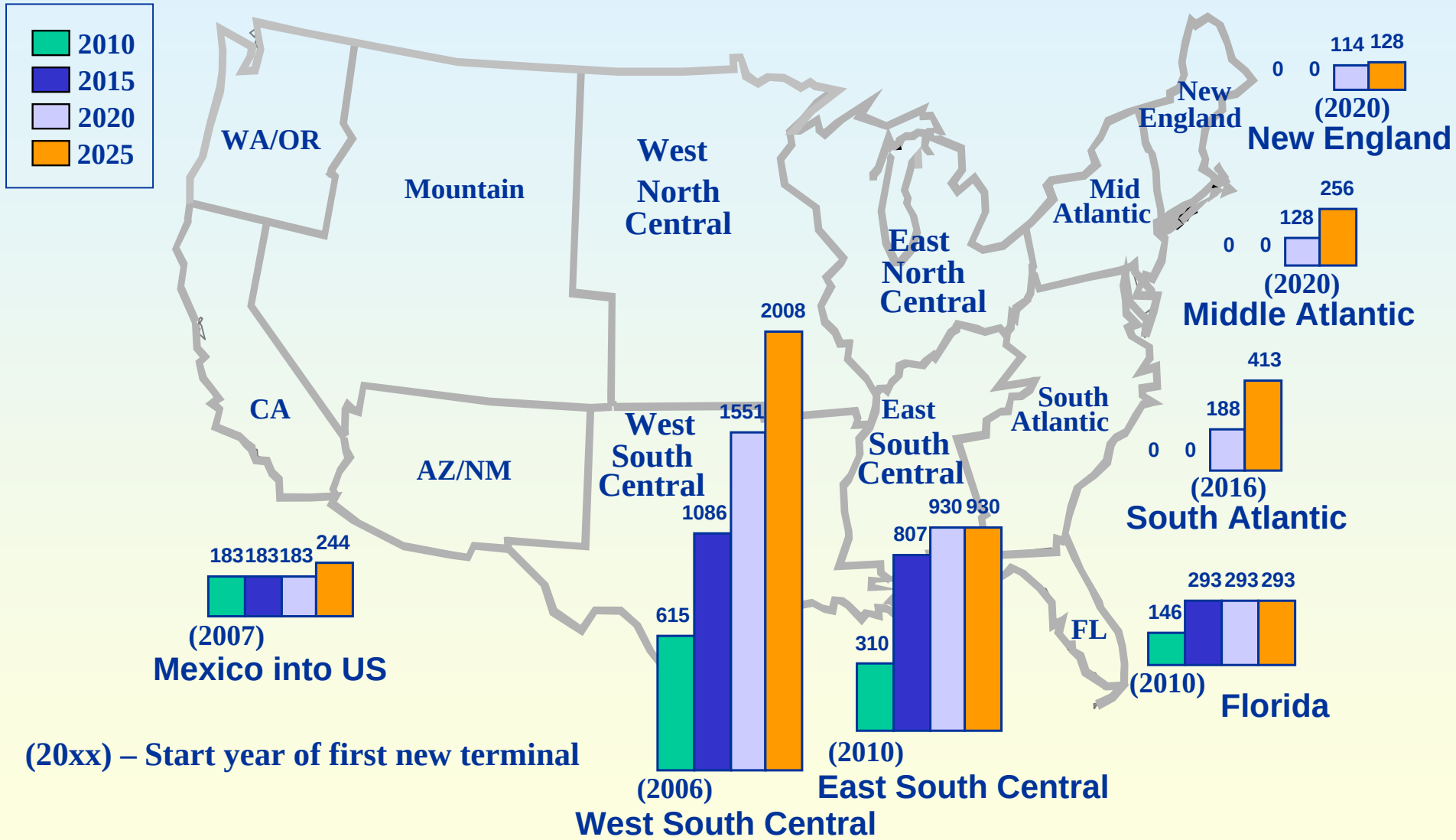
Components of Minimum Regional LNG Trigger Prices by Region (2003 dollars per thousand cubic feet)



* Regasification includes pipeline cost from Bahamas

Source: 2005 *Annual Energy Outlook*

Regional LNG Imports at New Terminals, 2010, 2015, 2020, and 2025 (billion cubic feet)



Source: *Annual Energy Outlook 2005*

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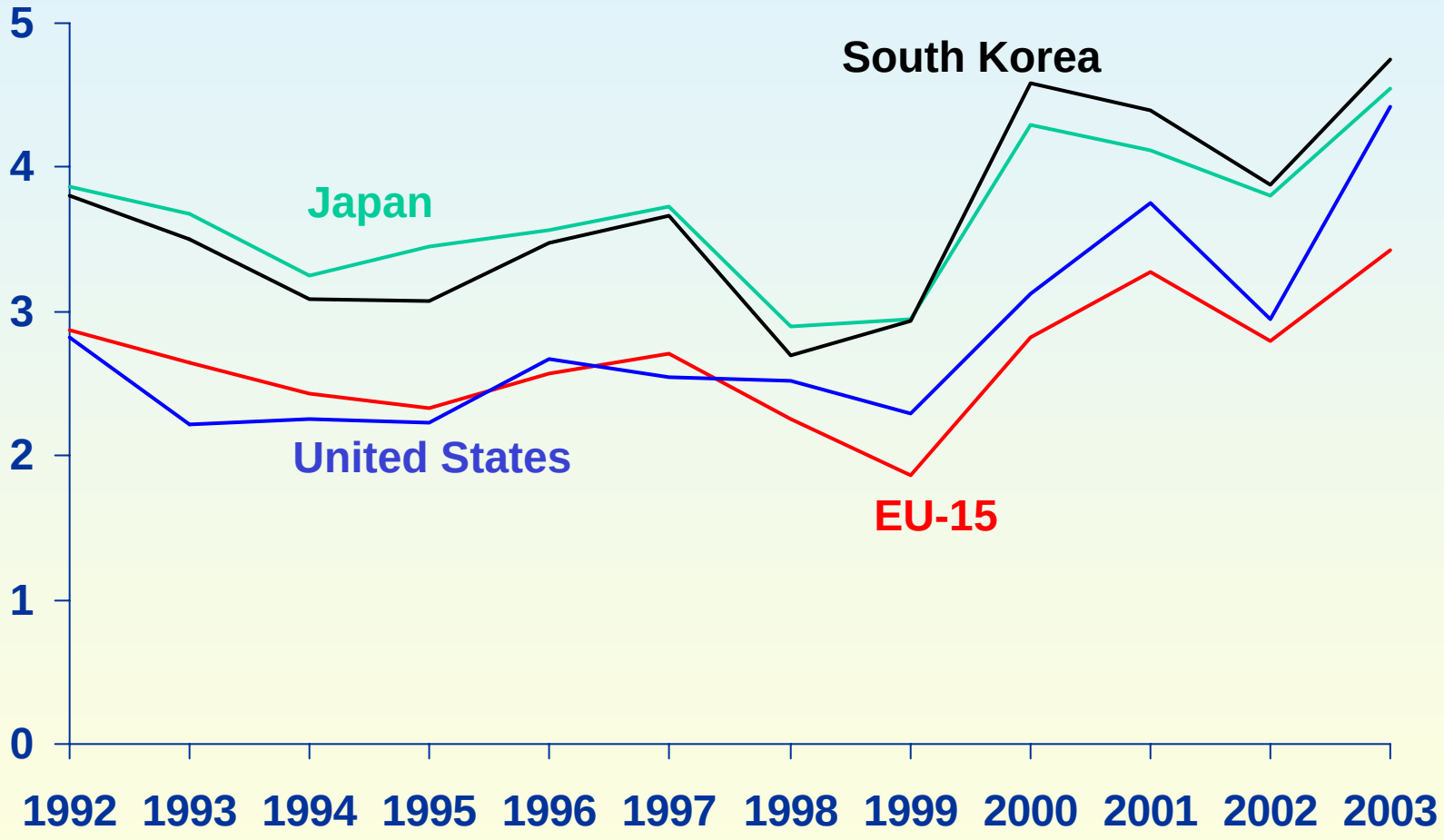
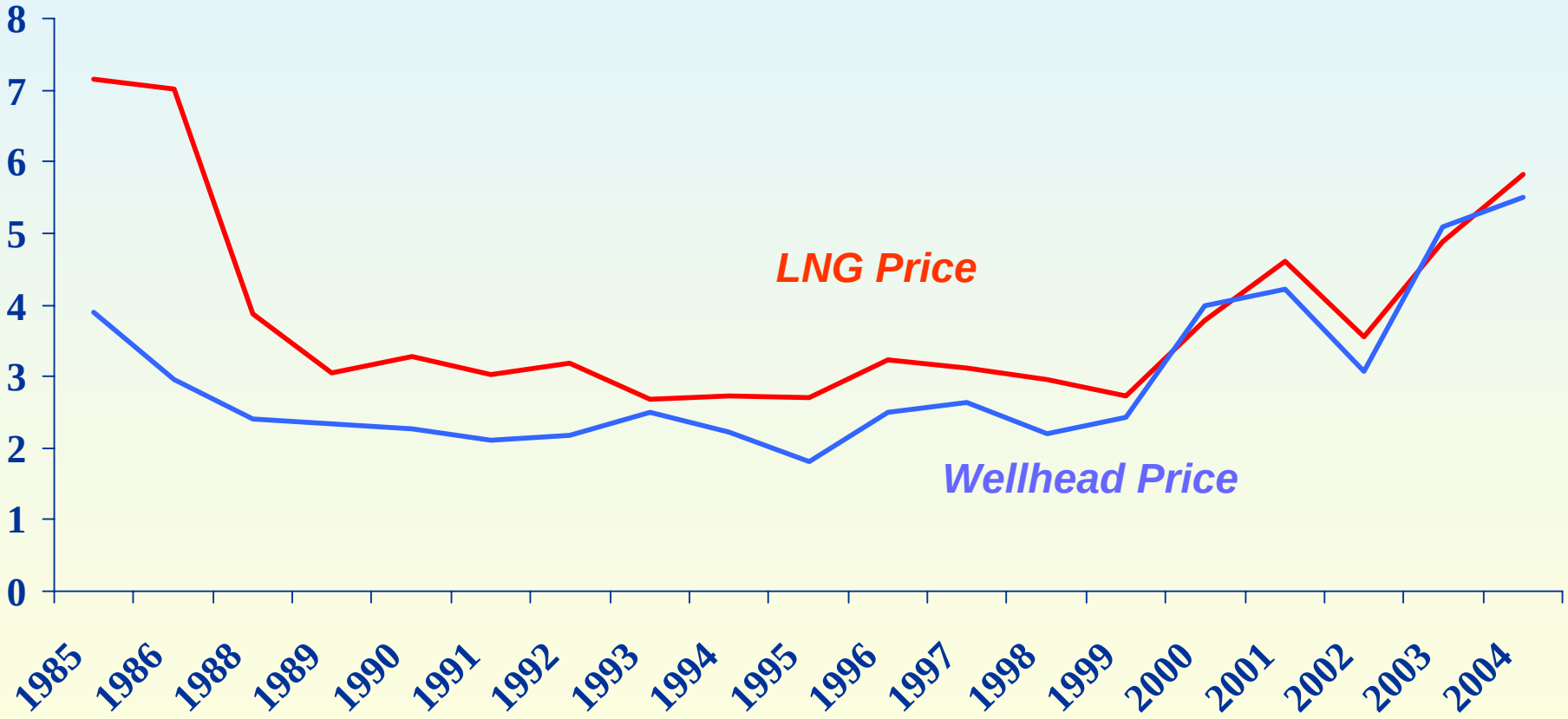
LNG Import Prices, 1992-2003
(2000 dollars per MMBtu)



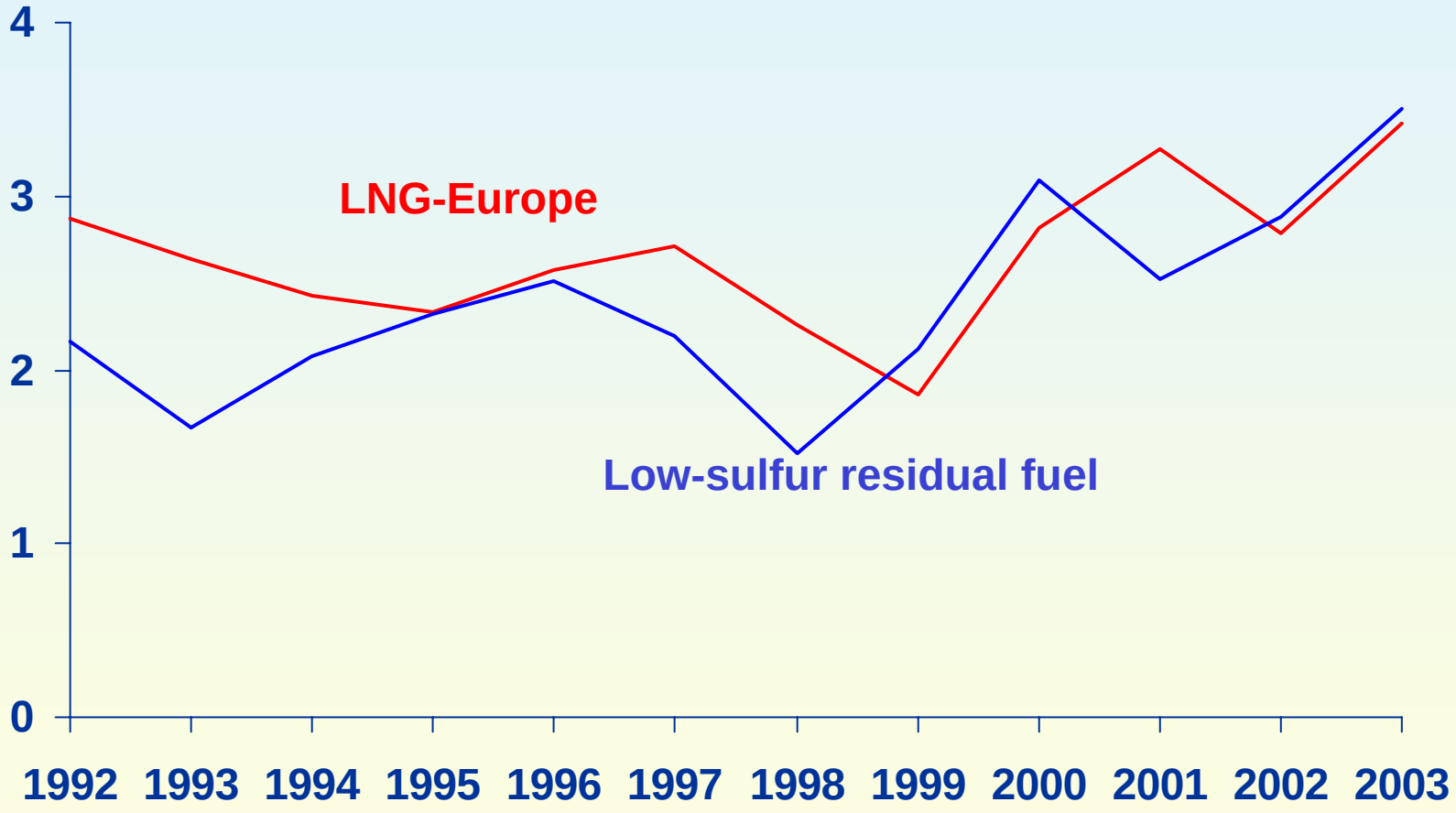
Source: International Energy Agency

LNG Import and Wellhead Prices, 1985 - 2004 (2004 dollars per thousand cubic feet)



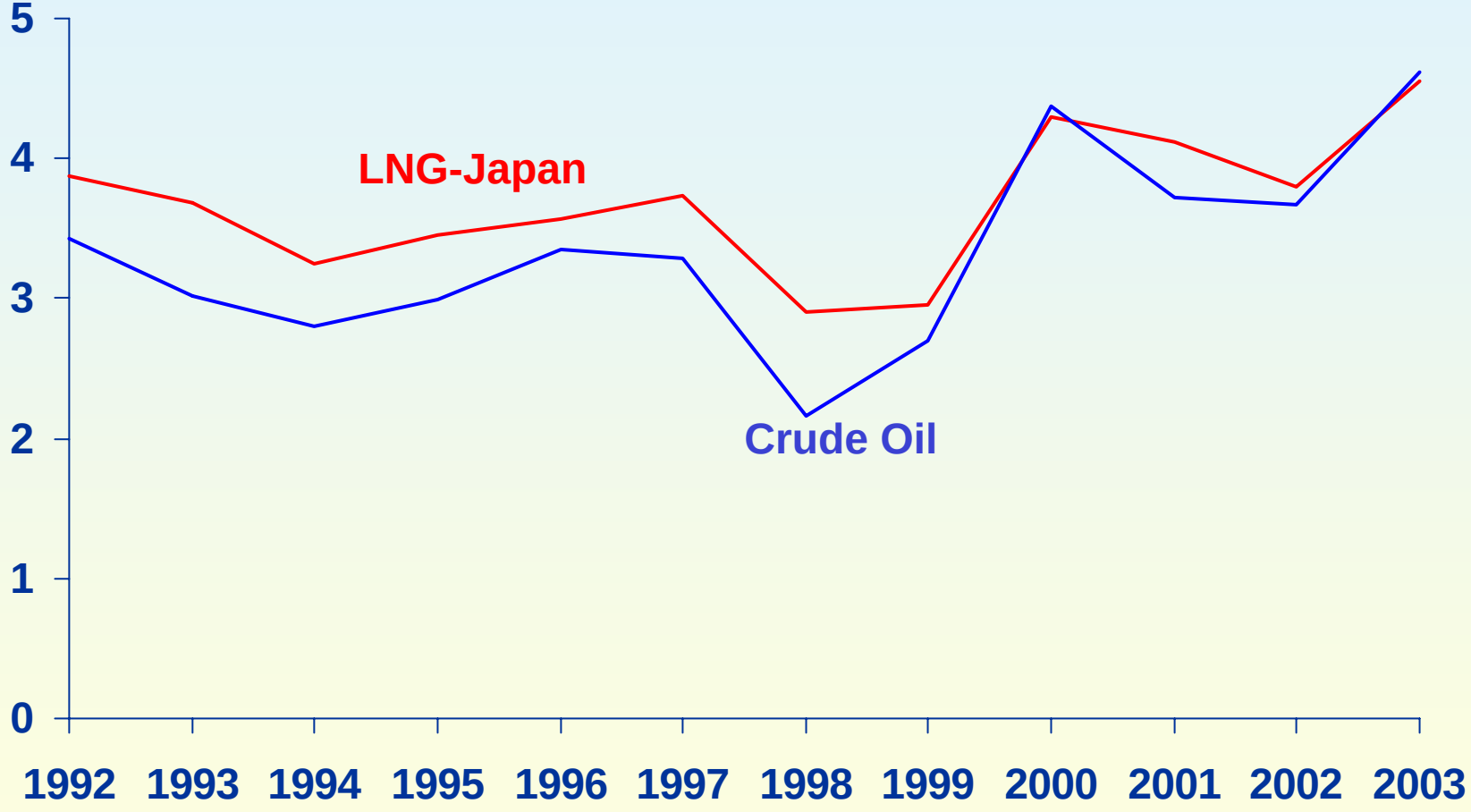
Note: There were no LNG imports in 1987, so that year is skipped.

LNG Import and Low-Sulfur Residual Fuel Spot Prices in Europe, 1992-2003 (2000 dollars per MMBtu)



Source: International Energy Agency

LNG Import and Crude Oil Import Prices in Japan, 1992-2003 (2000 dollars per MMBtu)



Source: International Energy Agency

Bivariate Johansen Test Results

Support for the "regional divide"

		Henry Hub	Pipe USA	LNG Europe	Brent	LNG Japan
Pipe USA	H_o: r=0[1] β[2] LOP[3] LOP*[4]	45.33*** 1,-1.03 (0.04) 0.57 14.56***				
LNG Europe		17.79	13.22			
Brent		13.76	13.29	43.82*** 1,-1.31 (0.06) 17.69*** none		
LNG Japan		14.27	12.72	54.97*** 1,-1.15 (0.59) 6.53** none	62.84*** 1,-0.66 (0.02) 45.75*** none	
Pipe Europe		15.78	7.49	26.50*** 1,-1.11 (0.15) 0.48 0.72	24.11*** 1,-0.84 (0.08) 2.32 13.84***	21.11** 1,-1.45 (0.17) 6.12** none

[1] Trace test statistics of the null hypothesis of no cointegration

[2] Unrestricted estimate of cointegrating vector β normalized at the row variable (standard error)

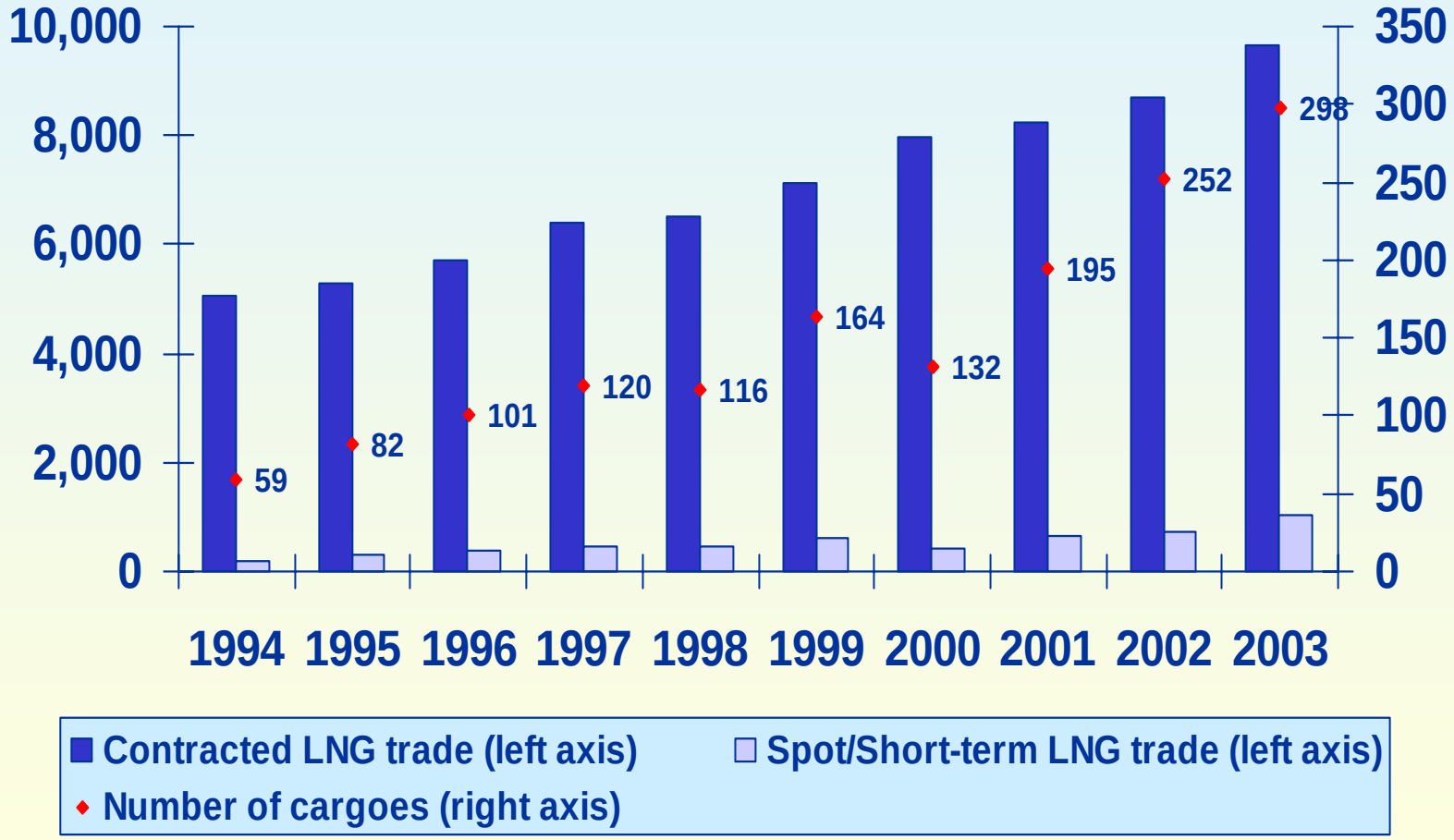
[3] Likelihood ratio test statistic of LOP β=(1,-1)'

[4] Likelihood ratio test statistic of null hypothesis that cointegrating vector β=(1,-1)' has zero mean

Note: One / two / three asterisks indicate significance at the 10% / 5% / 1 % level, respectively.

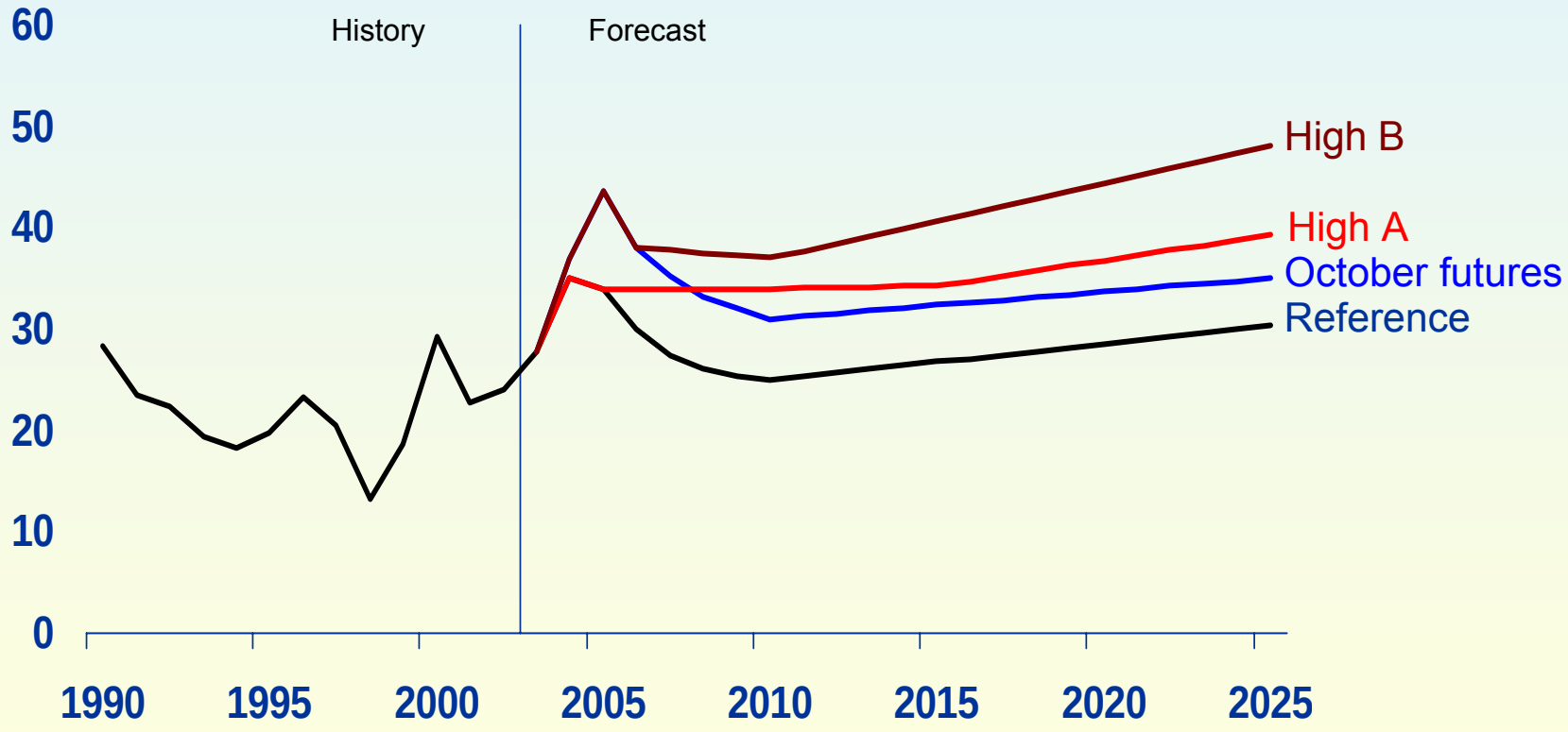
Source: Christian von Hirschhausen, Dresden University of Technology

Spot/Short-Term Vs. Contracted LNG Trade, 1994-2003 (billion cubic feet)



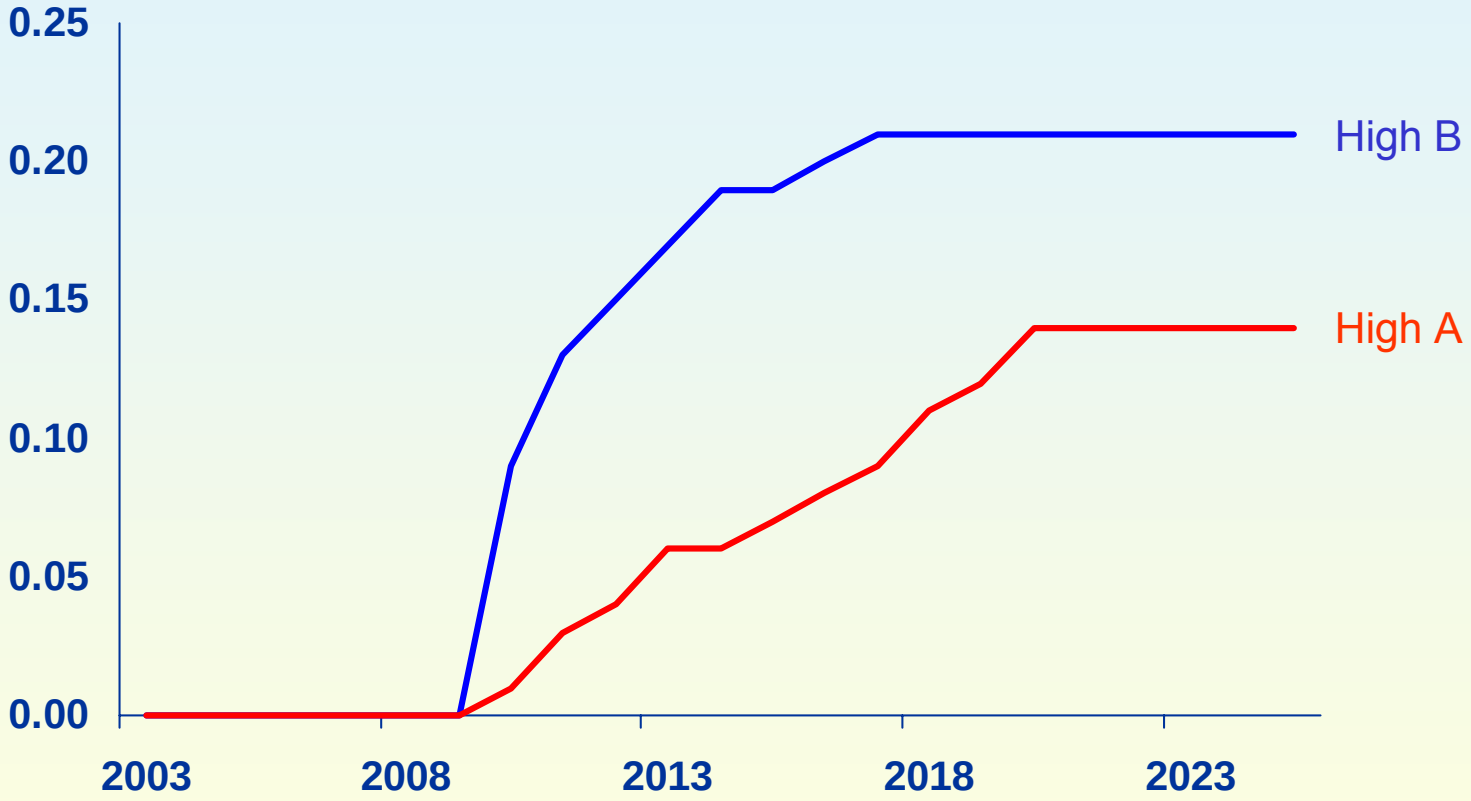
Source: Wood Mackenzie Ltd., Edinburgh, UK.

World Oil Prices, 1990-2025
(2003 dollars per barrel)



Source: *Annual Energy Outlook 2005*

U.S. Gas-to-Liquids Production in High Oil Price Cases, 2003-2025 (million barrels per day)



Source: *Annual Energy Outlook 2005*

World Gas-to-Liquids Production in the Reference and High B Cases, 2025 (million barrels per day)

	Reference	High B
United Kingdom	0.046	0.069
Norway	0.009	0.015
Russia	0.016	0.075
Malaysia	0.051	0.109
Qatar	0.247	0.561
Algeria	0.026	0.166
United States	0	0.208
Total	0.395	1.203

EIA Sources

Financial Reporting System, March 2005

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International Energy Outlook 2004, April 14, 2004

The Global Liquefied Natural Gas Market: Status and Outlook, December 2003

Non-EIA Sources

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Dr. Christian von Hirschhausen, *Price Dynamics in Europe and the North American Natural Gas Market – Towards Convergence?*, February 2005

Wood Mackenzie, *Global LNG Online*

Japanese Ministry of Economy, Trade and Industry

Colton & Co., *www.coltoncompany.com*

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