



Financing LNG Ships

Guy Ranawake and Afonso Reis e Sousa

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TAYLOR-DEJONGH

LNG Experience

Atlantic Basin

**Qatargas II
LNG Qatar**



FA to Lenders
US\$5 bn

**Equatorial
Guinea LNG**



FA to Sponsors
US\$1.7 bn

**Sonatrach,
Skikda Trains
4,5,6
Algeria**



FA and Debt
Arranger
US\$250 mm

**Atlantic LNG
Train 1
Trinidad**



FA to Sponsor
US\$1 bn

Pacific Basin

**Alaska LNG
and Pipeline
USA**



FA to State
US\$12 bn

**RasGas
LNG Train 3 Qatar**



FA to Sponsors
US\$1.4 bn

**Jamaica LNG
Jamaica**



FA to Sponsor
Confidential

**Angola LNG
Angola**



FA for Project
Company
US\$1.5 bn

**Tambeyneftegaz
Russia**



FA to Sponsor
Confidential

**Qatargas
Upstream
LNG Qatar**



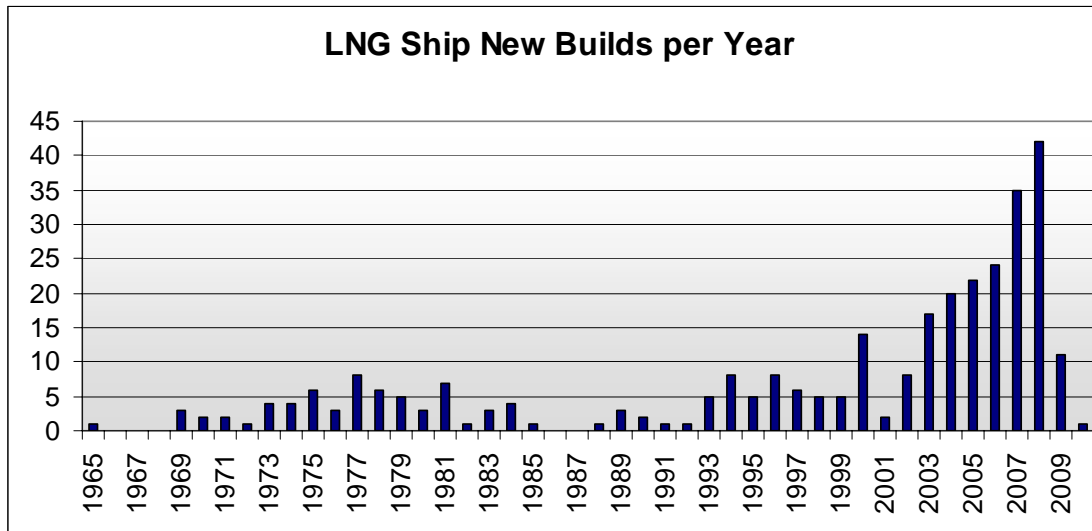
FA to Lenders
US\$600 mm

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LNG and LNG Shipping Market

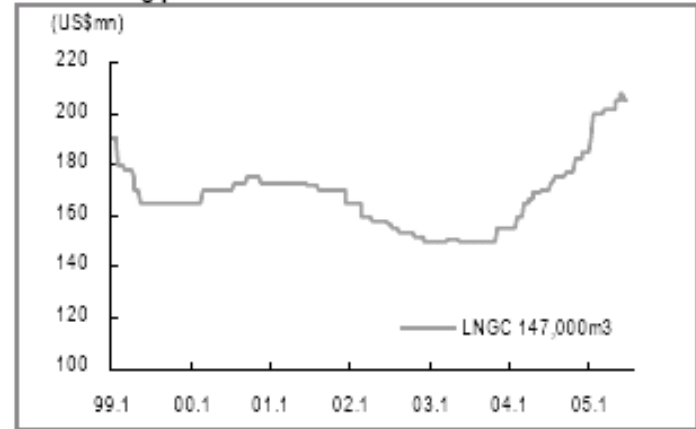
- Demand in LNG ships driven by growing number (and capacity) of liquefaction and regasification plants.
 - Between 2005 – 2010:
 - 150 – 170% projected growth in global liquefaction capacity
 - 80 – 90% projected growth in global regasification capacity



Capital Needs

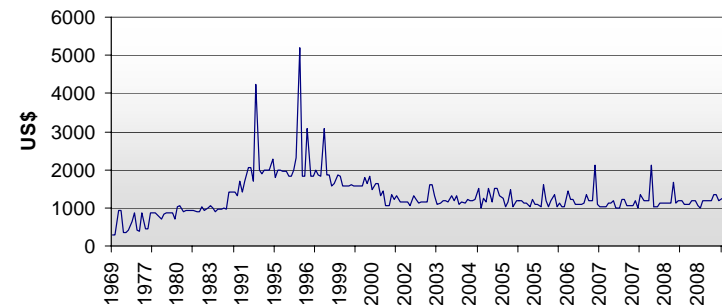
- Despite tech advances, new-build prices still growing
 - High input prices
- Newer, larger vessels have brought down price/m³, though total costs still increasing.
 - Cost of new Q-Flex LNG Vessel: \$210M - \$215M
 - Up to 8 ships required for a single project

Newbuilding price of LNG carriers



Source: Clarkson, Woori I&S Center

New-Build LNG Vessels: \$/m³



The Short(er)-Term Market

Where did the Spot/Short-term Market come from?

- Excess capacity and debottlenecking at upstream and liquefaction projects
- Demand for LNG exceeding contracted supply
- Downstream buyers looking for one-time purchases to meet surges in demand

Where did the ships come from?

- 2000-2002 – Low new build prices
- Strong interest among shippers take advantage of “buyers’ market”

Size and Growth Prospects

- Traditionally only marginal segment of LNG market (1-2% of total LNG sales).
- Currently, spot/short-term sales represent nearly 10% of total sales
- Predictions of spot/short-term sales currently at 20-30% of market by 2020

LNG Shipping Finance Overview

- Financing methods
 - Traditional corporate finance
 - Retail market now being tapped (Teekay LNG)
 - Limited recourse
- Demand for limited recourse financing due to large capex requirements for new-build LNG vessel projects
 - Avg. price of LNG tanker on order - US\$190MM
 - Nearly all LNG projects require multiple vessels to meet capacity, increasing strain on balance sheet

Limited Recourse Financing

- Shipping Limited-Recourse Financing involves a blending of Project Finance and Asset-backed Finance

Project Finance	Asset-Backed Finance
<ul style="list-style-type: none">• Contractual agreements underpin revenue stream• Project risk allocation• Shipping risks	<ul style="list-style-type: none">• Residual asset value• First priority lien and related security

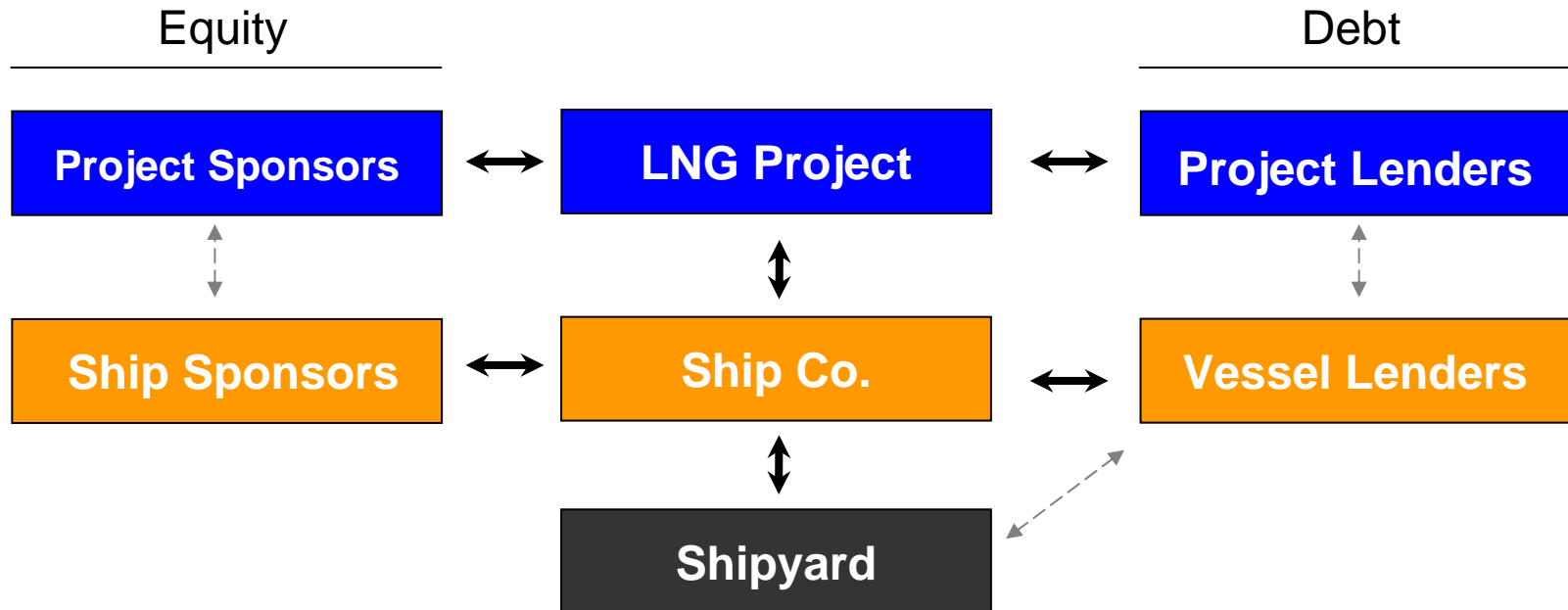
Shipping in the LNG Value Chain



- Upstream Risk
 - Lenders will require ship-or-pay obligations from LNG producers
- Downstream Risk
 - Firm terminal use agreements must be in place that allow the ship offload access
- Security Package

Limited Recourse Financing (contd.)

Simplified Contractual Structure



LNG Shipping Finance Overview

Sources of financing for LNG Shipping projects:

Debt:

- Traditional shipping banks
- Export credit agencies
- New Sources of capital (e.g. Islamic Banks)

Equity

- Traditional shipping companies
- New Sponsor participants
 - Greater participation among producers **and** buyers
- New techniques to raise capital
 - e.g. KG financing

New Approaches and Techniques

- Decoupling of Time Charter Party Agreements and SPAs
 - Depends on perceived credit strength of Charterer/LNG Project
 - Other sources of revenue (e.g., condensate sales revenue e.g. QG II)
 - Expansion versus Greenfield
 - Diversion flexibility and LNG Value Chain structures
 - Sub-chartering flexibility



CONTACT INFORMATION

London, UK

Guy Ranawake
Director

Afonso Reis e Sousa
Director

4 Millbank
London
SW1P 3JA
United Kingdom

T +44 (0)20 7233 4000
F +44 (0)20 7340 2188

TAYLOR-DEJONGH