

## **LNG Service (LNGS)**

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## I. Introduction

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MSI's LNG Service (LNGS) is an interactive, menu-driven modelling system, forecasting the international market for liquefied natural gas (LNG). It is a highly effective support tool for shipowners, shipyards and industry suppliers and provides:

- MSI's **Comprehensive database** of bilateral LNG trade from 1980 to 2015, updated every quarter to MSI's latest forecast scenario.
- A **Market Analysis and Forecasting Model** built on explicit industry assumptions, enabling users to generate alternative forecast scenarios for LNG supply and trade and to test the sensitivity of MSI's quarterly Base Case scenarios to key market risks.

Along with our quarterly scenario updates, MSI provides our in-depth LNG market report which provides a comprehensive guide to long-term LNG market complementing historical and forecast data from MSI's latest LNGS model with in-depth text and charts highlighting and analyzing key trends and forecast risks.

## **II. Data Coverage and Sources**

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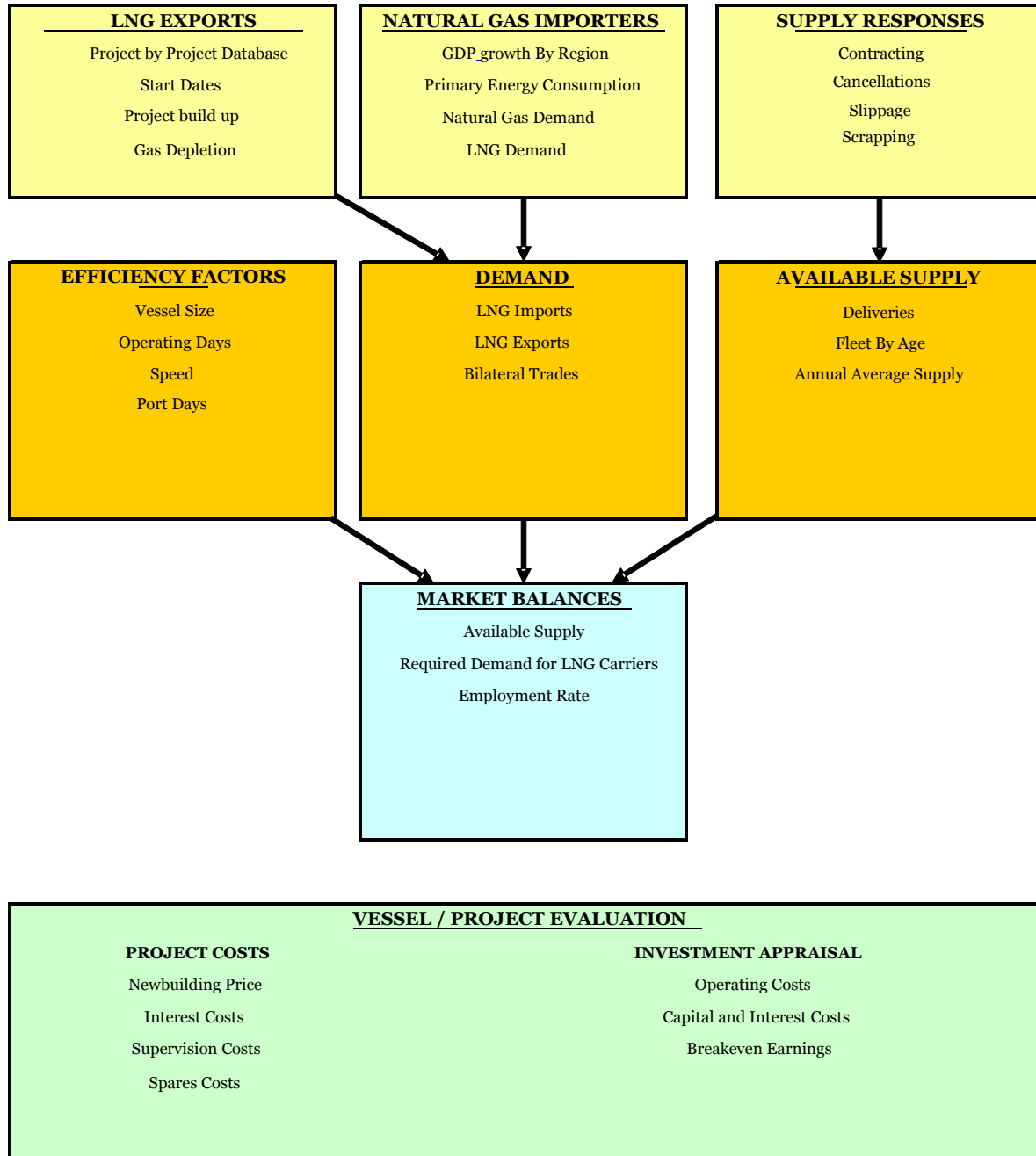
The LNGS provides historical and forecast timeseries data from 1980 to 2015 for:

- Macroeconomic and energy consumption variables including:
  - Annual GDP growth rates by region
  - Primary Energy Demand
  - Natural Gas Demand
  
- LNG Seaborne Cargoes including:
  - Imports and Exports by Country Region
  - Comprehensive LNG Bilateral Trade
  
- LNG Carrier Trading Efficiency Assumptions:
  - Vessel Size
  - Operating Days
  - Speed
  - Laden distance
  - Ballast Ratio
  - Port Days
  
- Required Demand for LNG Carriers
  - Comprehensive Bilateral Demand
  
- LNG Carrier Supply Data:
  - Contracting
  - Orderbook
  - Scrapping
  - Fleet size
  
- LNG Carrier Market Balances and Fleet Utilisation Ratio
  
- Prices and Required Earnings:
  - Newbuilding and Secondhand Prices
  - Interest and Supervisions Costs
  - Operating Costs
  - Interest and Capital Costs
  - Breakeven Earnings



### III. Model Structure

Below is a schematic overview of the LNG Service model structure.





Maritime Strategies International Ltd.

The model contains a database of current, planned and possible LNG projects. From known contract details and other information we project the export pattern for each train in each project. Where projects are more speculative we have taken a view based on the stated aims of the project sponsors.

At the same time, we review the development of infrastructure in importing countries and policy statements from governments and gas importers. These set the framework for total imports into each country.

Combining the two approaches we arrive at a realistic base case for LNG trade development over the forecast period. Data is expressed in Million Tonnes and Billion Cubic metres of gas (BCM).

Our bilateral trade matrices are converted to required demand for LNG carriers using a methodology adapted from our bulk shipping models. Using voyage distances along with working assumptions for efficiency factors such as speed, port time, we calculate the quantity of LNG shipping capacity required to carry projected trade in Million Cubic Metres (Mn CuM).

The LNG industry supply-side is fully characterised and forecast. Data covers LNGC contracting, deliveries and fleet capacity and age profiles. Explicit forecasts for contracting and scrapping translate into projected fleet growth.

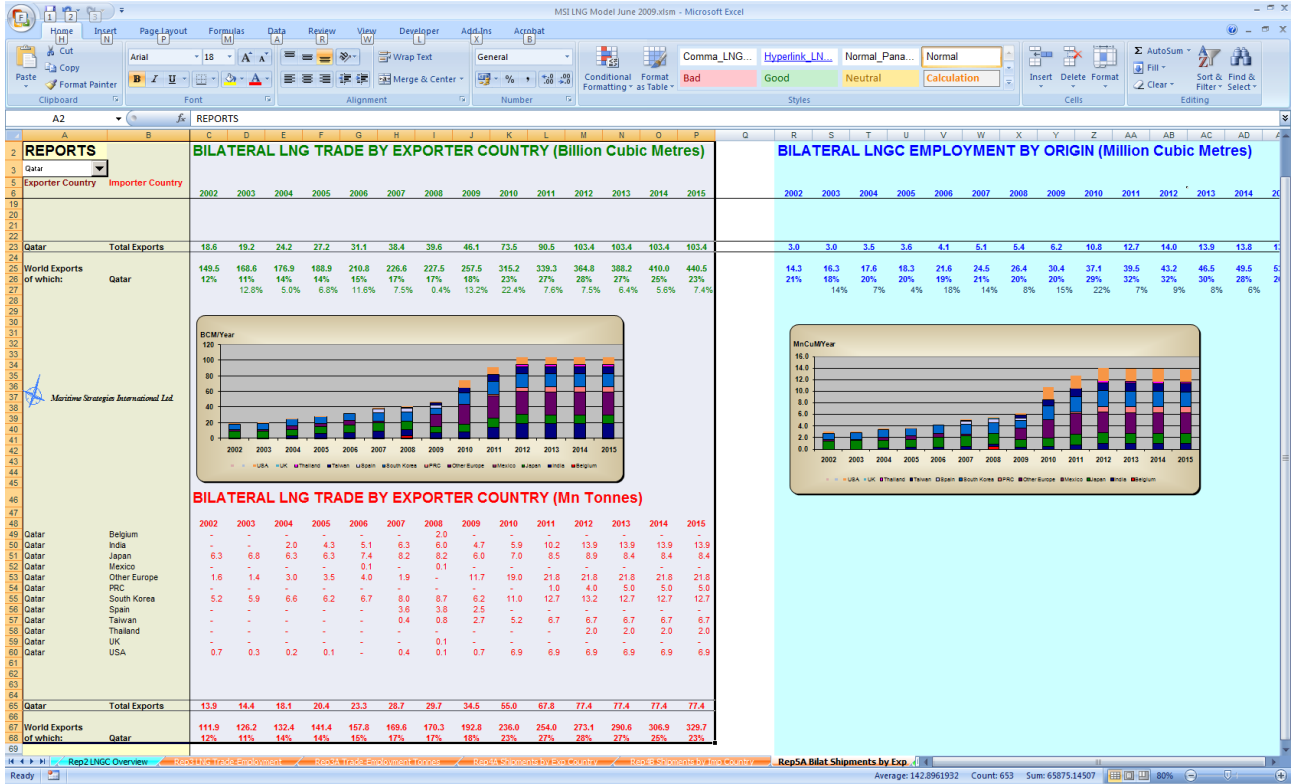
Based on the net change in requirement for LNG carriers on each route in Mn CuM and the probable size of ships deployed we have projected the annual total requirements for the number of ships required to be delivered over the forecast period.

Users may overwrite MSI's base case assumptions to test the impact of alternative scenarios on LNG carrier requirements.

The service is especially beneficial to shipbuilders, banks, equipment suppliers who are interested not only in the future requirements for LNG Ships but also the geographical sourcing of future newbuildings.



IV. Sample Screenshot





## V. Deliverables

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An LNG Service package can include a combination of the following:

- Modelling software
- Biannual Market Reports
- Reference Guide
- Equations Book
- Full telephone support and access to our senior consultants

Each biannual model update is supported by a comprehensive written report containing extensive analysis and industry insights on the international economic environment, cargo trends, fleet developments and forecast sensitivities. The report also provides reasoning behind our Base Case forecast as well as any changes made to it. Detailed data extracts from LNGS are included in each report.

The Reference Guide provides detailed instructions on set up, installation and use of LNG Service software, a description of the forecast methodology and a complete listing of data sources.

LNG is written on a Microsoft Excel® platform, and updates containing MSI's latest forecasts are distributed quarterly.